



Sustainability Audit

Report for Kenilworth School District 38



Building Efficiency

Healthy Environments

Environmental Literacy



Increase:
Material Efficiency
Water Efficiency
Energy Efficiency
Site Efficacy



Increase:
Air Quality
Water Quality
Occupant
Performance



Increase:
Environmental
Literacy,
Engagement and
Communication

Prepared By Wold Architects and Engineers

For Kenilworth School District 38 Board of Education

October 10, 2019 – DRAFT



Illinois
Minnesota
Colorado

designers and researchers for public environments



Sustainability Audit – Report for Kenilworth School District 38



Table of Contents:

-Executive Summary

-3 Pillars of Sustainability - Audit Sections:

1- *Pillar 1 – Resource Use*

- Achievements and Recommendations for Change
- District Wide Energy Use by Site
- Sears School Energy Star Certification Applications
- Survey and Current Facility Practices
- Photos and Floor Plans
- District Wide Energy and Resource Use Data



2- *Pillar 2 – Healthy Environments*

- Achievements and Recommendations for Change
- District Wide Facility and Practices Data
- Health and Fitness Practices

3- *Pillar 3 – Environmental Literacy*

- Achievements and Recommendations for Change
- District Wide Curriculum and Instruction
 - Curriculum maps with sustainability designated
- Educator Surveys and Data

4- *Appendix / Guidelines and Resources*





THANK YOU JOSEPH SEARS SCHOOL!

Katie Nahrwold

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Members of the D38 Board of Education



Sustainability Audit – Executive Summary

Introduction and Process:

Wold would first like to thank the Kenilworth District 38 Board of Education for their approval of the audit process. This signifies a belief in the positive results that can be achieved through sustainable practices and developing a culture of environmental awareness. Members of the Sustainability Committee and the Joseph Sears School educators should be highly commended for their support. A special thank you to Dr. Crystal LeRoy, Superintendent, and Katie Nahrwold, Sustainability Coordinator for their leadership during the process.

Wold completed the sustainability audit for Kenilworth District 38 through method of data gathering, evaluation of data, and formulating recommendations. The recommendations have been structured into categories based upon 3 Pillars of Sustainability. The pillars allow the District's diverse activities, subject matter, achievements and objectives to be aligned into common sustainability goals:

Pillar 1 - Reduce environmental impact, energy use, and resource use.

Pillar 2 - Improve the health and wellness of students and staff.

Pillar 3 - Environmental literacy - provide effective environmental and sustainability education.

Significant efforts from all 3 pillars have been observed. Good structures for communication are through professional development, the Sustainability Committee, the JJSPVA, and the Panthers.

"Just in the last two years, a marked increase in awareness and understanding of how important this all is for our kids and ourselves" - Elisabeth LeBris

Pillar 1 - Reduce Environmental Impact

Energy Use History:

This document presents a compilation of data of energy use from 2017 to 2019 for each building in District, opportunities for reducing energy consumption, together with recommendations for next steps. The intent is to provide a record and benchmark of energy use for further energy analysis studies, and more importantly to see if energy projects actually deliver cost savings, District energy use reduction goals, and regular evaluation to benchmark. The energy use for the Joseph Sear School for both gas and electric have been entered in the Department of Energy's Energy Star program portfolio manager which compares for similar schools located in the same region of the country. Data such as school building size, occupancy, time of use, and number of computers in use.

At Joseph Sear School, the approach is to tabulate the utility data collected from the school district or utility provider and create an annual database and graphic representation of use. Total costs per square foot/year, site energy use intensity (kBtus/SF/Year) and total annual energy costs serve as a baseline.



D38 Board Policies:

Existing school board policies demonstrate a strong commitment to sustainability:

- 4.150 operational services – facility management and building programs
- 4.70 Operational services = resource conservation
- Strategic priorities #4 Sears Finances and Operation
- 4.160 Environmental quality of building and grounds

This is an incredible achievement. However, the next step should be to create a sustainable energy goal that is measurable and written into policy. A series of workshop are being planned to develop these.

Joseph Sears School Energy Costs:

The Sears School uses electrical energy and natural gas. Building has two natural gas meters and one electrical meter. The tables attached show total monthly energy costs span from a low of \$7,630 in August 2018 to as high as \$13,625 in January 2017. The latest annual costs of \$116,770 were used in the Energy Star Portfolios. The building is 109,700 square feet. Total costs per square foot of building space per year was \$1.07 per square foot, which is above average.

See attached background data trending an annual usage for the last two and a half years of both electrical and gas usage. The energy costs/usage tables include dollar costs and consumed energy units (kilowatt-hours of electricity and cubic feet or therms for heating fuel).

Energy Units: The attached energy costs/usage tables also show energy units consumed per month. An energy use intensity (EUI) index represents total energy units (in thousands of Btu's) consumed per year per square foot of building space. Energy units consumed span from as low as 76 to as high as 94 thousand Btus per square foot of building space. The latest data year of 92 kBtus/SF/Year was used in the Energy Star Portfolio.

The energy use historic data serves as a strong benchmark for future analysis and tracking of energy reduction projects. A summary of recent energy related projects includes:

- Lighting – Select Areas (2008)
- Roofing (2008, 2009, 2011)
- HVAC (2009)

We have also used this data to enter into the Energy Star Certification program sponsored by the US department of Energy. The results of these are attached in Pillar 1 section. Looking at the results of the Energy Star Portfolio for 2018 usage, the school has scored 35%. If building achieved 75%, it would allow the school to be Energy Star Certified. Wold recommends using the Energy Star Portfolio to track progress of energy use annually in conjunction with an Energy Analysis to assist District in establishing performance goals for each energy reduction projects.

System Assessments:



Engineers conducted a walkthrough of the mechanical, electrical and plumbing systems at the Joseph Sears School in Kenilworth, IL with the goal of identifying opportunities to reduce the buildings energy consumption. Below is a list the energy conservation measures which should be implemented into the existing building either as stand alone projects or together or as part of a larger renovation. Energy savings are identified for the school districts consideration.

Electrical/Lighting

- Replace all lighting (interior and exterior) with LED fixtures. This would produce the most energy savings and is also eligible for ComEd incentives.
- Add occupancy controls for the lighting where not currently installed. This is eligible for ComEd Incentives.

Mechanical

- Engage a commissioning agent to preform retro-commissioning on all mechanical system. This will identify the current sequence of operation employed by all mechanical equipment, and verify that all equipment and control devices are operating as intended. Adjustments to the current sequence of operation can then be identified and implemented to optimize the system operation and efficiency.
- Replace the existing three air handlers serving the center pod with a single central VAV air handler with zone terminal units with hot water reheat coils. A single central VAV system will eliminate the current simultaneous heating and cooling of the same space, reduce the overall fan energy, and cooling energy consumed. A properly operating VAV system will eliminate all high humidity conditions in the occupied spaces served by the system, improving occupant comfort.
- Existing below floor-raised system delivers air through light fixtures. AHU #1 to exterior diffusers and AHU #2 and #3 to interior diffusers

Plumbing

- Replace the current atmospheric domestic hot water heater with a self-contained tank type sealed combustion condensing hot water heater. A condensing water heater operated at ~95% peak thermal efficiency compared to standard amphoteric water heater at ~80% thermal efficiency, reducing the amount of natural gas used to heat the domestic hot water. Eliminating the remote storage tank eliminates energy lost from circulation piping to the mechanical room, and eliminates a circulation pump further reducing energy spent heating hot water. If the school district is interested in any of these items, we could provide a fee to look at exact scope and construction costs.

Exterior Envelope:

The envelopes of the building would need further invasive investigation and analysis to see the potential for additional insulation and solutions for energy reduction and whether these would be considered in any new renovations going forward. Window replacements have increased energy efficiencies and thermal comfort. However, window shading devices would reduce heat gain and provide additional R-value.



Our Energy Star analysis has established a baseline of energy use which should be used for investigating and analyzing various options for any energy reduction efforts. The energy reduction options should be weighed against the indoor air quality, occupant comfort and also comply with the International Energy Code 2015 per Illinois School Code.

Energy Recommendations

Let's put the dollars saved from waste reduction back into the classroom

Summary:

- Set goal of Energy Star 75% (currently at 35%)
- Seek 20% reduction in energy use – see attached Energy Reduction Strategies as preliminary step

Given the age of the school, and the fact that there have been multiple additions, Wold would recommend the District conduct a deeper Energy Analysis which takes into account system components as well as larger comprehensive HVAC and electrical systems. The Analysis should be a thorough evaluation of the existing equipment and operating conditions. This review should include evaluating operating hours (occupied/unoccupied), temperature profiles (occupied/unoccupied), ventilation system operation and lighting level, and feasibility of proposed reduction projects.

We recommend that Kenilworth District 38 proceed with Wold Architects and Engineers to conduct:

1. Comprehensive energy analysis and determination of specific systems that are in place currently.
2. Creation of a strategy for the District's energy goals. This would take into account improved systems and also return on investment for those systems. The cost saving would need to be considered in the long-term budget and schedule for the District.
3. Develop long-term comprehensive facility projects that address energy systems and components within overall master facility improvement plan. For management of projects see Comprehensive Energy and Resource Management section below.

D38 should take advantage of ComEd incentives, renewable energy credits (solar installations) and energy reduction credits. Wold recommends further energy analysis of systems that automated building control and track thermal comfort in specific rooms and integrate into current BAS. Review annual energy reduction progress against the benchmark and an Energy Star goal of 75%.

D38 annual budgets should provide for improving current or adding new systems while maintaining a long term master plan approach to improvements to facilities. Green projects can be done in tandem with



other improvements. Green approach do NOT have to cost more. It is about the choices that are made during design.

Resource and Waste Reduction:

Composting and recycling of waste has become part of a green school awareness and cultural shift. Katie Nahrwold, D38 Sustainability Coordinator, has achieved excellent results and awareness of the recycling program. It is recommended to streamline custodial staff to adhere to process of daily cleaning and trash separation and retain correct disposal. The District has made efforts to be successful at disposing and recycling of its waste in a responsible manner, including:

Certification:

Wold strongly recommends that criteria for measurement of building's sustainability within new construction or renovations be based upon one or more of the following national ratings:

1. LEED Certification V4 BD+C rating system at new constructions
2. LEED O + M Rating System at existing school areas
3. Green Ribbon Schools Award Program for each school
4. Collaboration for High-Performing Schools to reference standards of green practices in all aspects.

These rating programs will allow the District to establish, track, and guide long-term efforts related to building renovation remodeling and construction. For example, LEED sets standards for recycling and disposal of construction material (carpeting, steel, asphalt, soils), indoor air quality, and energy performance.

Comprehensive Energy and Resource Management:

D 38 does not have a written data-specific goal such as a percentage of energy reduction in their energy management plan. The District has made some conscientious effort in energy initiatives on its last renovation projects. Wold recommends the District adopt a Comprehensive Energy and Resource Management approach. This includes long term strategies to manage energy use and attain cost reductions to its operating budgets. Recommended structure to comprehensively manage resource use are:

1. Energy Strategies - result in projects that seek energy use reductions and are implemented and planned for in budgets. Projects will seek grants and incentives. Savings can be reinvested into new projects.
2. Capital Improvements – investigate opportunities for higher performance and low-operating-cost equipment when doing annual improvements.
3. Environmental Strategies – seek to reduce waste disposal and minimize non-energy resource use.



4. Behavioral Modifications - change to the daily culture of occupants by making them aware that their actions have consequences in resource use.
5. Building Certification - implemented with new construction in order to provide real documentation of sustainability of facility.



Pillar 2 – Health Environments and Wellness

Summary of recommendations:

ASHREA Standard 55 Thermal Conditions – Climate control
IESNA Illumination
Ventilation ANSI ASHREA 62.1

Achievement: Board Policy 4:160 Environmental Quality of Buildings and Grounds – hazardous materials, environmental quality, toxins, pesticides.

Indoor Air Quality:

Green Cleaning:

Indoor air quality throughout the district is regularly checked and maintained. This does not, however, include complying with green cleaning policy. D38 must comply with the Green Cleaning Act. We observed the need for minor improvement in addressing moisture issues in lower level in service areas. Carbon monoxide detectors have been installed to meet state compliance. Rigorous cleaning policies and staff training are in place. Compliance with ventilation in science areas is adhered to regularly. Wold recommends to implement Anti-idling policies. Policies are not in place for specification of low-VOC materials.

Wold recommends investigating occupied spaces to be adapted with carbon dioxide (CO₂) sensors which could work in conjunction with the HVAC systems. CO₂ based demand control ventilation strategies could improve indoor air quality and reduce energy. This would allow optimization of fresh air intake balanced against energy resource use. We would highly recommends District 38 continue to encourage the use of outdoor classrooms for natural air exposure. Wold recommends use of the EPA IAQ Tools for Schools has management plans which can be used by District.

Pesticides/Herbicides:

There exists an interference between weed control and use of outdoor classrooms. Wold recommends that the district discontinue its current use of weed control spray herbicides and use mechanical removal or other grass growing approach, such as low maintenance perennials.

Health Fitness/ Nutrition:

The audit documented health, fitness and nutrition practices of both students and staff. D38 currently has practices which are strong in fitness and wellness as evidence in interviews with principals and staff. Highlights include:



- Physical Ed - everyday for 30 min for all ages. Lunch break for 40 minutes - 20 min eat, 20 minutes recess. Pre-K eat at home. Kindergarten 50 minute lunch plus outdoor play.
- Movement Minutes during the day. Students encourage outside as much as possible. Have new climbing wall and high-ropes for variety of exercise. Gym mats are sent out to be cleaned once per year
- Eating in-season; tasting foods from the school garden; creating recipes with produce from garden; talking about the importance of local foods for higher nutrition content. Students also work in the garden.

See also Curriculum Maps section below for achievements in health and fitness. No additional recommendations are made per audit.

Food service - Currently cafeteria is K-4 in main building and 5-8 in Village House. Lunch is 50% brought from home, 50% purchased at school. Tables always cleaned up afterwards..

Outdoor Activities:

The District has an outdoor classroom as part of its Practical Arts curriculum which encourages excellent curriculum-based activities. Outdoor activities and play are a critical component under Pillar 2.

D38 also encourages students to walk or bike to school and establishing a policy related to this. Annual events include training related to bike safety. Wold recommends that the district participate in the annual Green Apple Day of Service or other similar outdoor community events.

Acoustics:

Each classroom has unique acoustics because of the either plaster and gypsum board walls or mix of ceiling types. In the 1970s wing complaints were frequent due to wall not going all the way up to the structural deck. Wold recommends that acoustics in newly remodeled or added new classrooms be designed to meet the ANSI/ASA S12.60–2002 Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools. The maximum permissible background sound level for “typical” classrooms is 35 dBA, with a maximum reverberation time of 0.6 to 0.7 seconds. Components of the ANSI standards include noise from HVAC Systems, adjacent classrooms, and noise from the exterior. There are also considerations for reverberation within the room related to surfaces such as ceiling tile, gypsum board, carpeting.

Maintenance Protocols:

School has practices for inspecting and maintaining the building’s ventilation system and all unit ventilators to ensure they are clean and operating properly: AHU - 3x per year; Unit Vents in Classroom 2x per year.



School ensures that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards.

Annual Tune-ups 2x per year; change filter 3x per year

Air Comfort: Air conditioning is having issues, but efforts are constantly being made to improve. The BAS . The current BAS allows for scheduling of the unit vents, but not being used now.

Policies or guidelines in place related to construction and renovation projects:

Currently Low-VOC is not a standard paint. Humidity controlled only in new addition portion

Auditorium and Gym - have CO2 sensors - from a 2008 upgrade to energy efficient controls



Pillar 3 - Environmental Literacy

During Wold's interviews with Dr Crystal LeRoy, Dr Lisa Leali, and Katie Nahrwold, on aspects of curriculum, it was most notable that the District does not currently have a written environmental literacy definition. They had discussed that FOSS and NGSS could contain units to build off of an establish school sustainability vision.

Summary of Recommendations:

- Establish the 'Why' - what is Vision and Goals to guide curriculum change and actions. Focus on a main area of sustainability – for example: net zero, reduce carbon footprint. Communicate the 'Benefits' and 'What' it looks like.
- Need written curricular plan and strategies long term stemming from the vision statements.
- Strongly recommend to continue with Sustainability Coordinator's position and their responsibilities. This is a highly effective role in district.

Curriculum Maps:

Wold interviewed the staff and obtained data from questionnaires concerning the District environmental literacy. The current curriculum maps have a units on environment and sustainable resource use, global awareness, applied learning, and the scientific method from kindergarten through eighth grade. Educator have listed sustainability related topics under sections: Standards, Essential and Guiding Questions, Big Ideas, Knowledge and Skills, Teaching Resources, and Statement of Philosophy. See attached surveys and curriculum maps.

Environmental literacy is embedded in multiple areas of curriculum. Notable strong areas related to sustainability are the Practical Arts which incorporate outdoor classrooms and real life hands-on projects and waste reduction practices. Physical education has a comprehensive integration of health and student awareness.

Wold recommends the District proceed with developing a vision and design criteria for sustainability. As well as guiding principles from which curriculum can be threaded with. A strategic plan can build on the vision to implement an environmental literacy definition into curriculum maps. The attached curriculum map has been highlighted to show sustainability and is included in this audit.

Preparing for New Trier High School:

While sustainability is integrated into curriculum at Sears School, the sustainability coordinator has recommended that consideration should be given to courses at New Trier High School. Courses related to career paths in science and the environment, for example.

Professional Development:



Support for teachers to conduct environmental and sustainability education has been provide from the sustainability coordinator, including training for lunchroom supervisors at the start of the school year and as needed.

Civic Engagement as a Sustainably Activity:

Students and parents engage through Planet Panther Student “Green” Club and the JSSPVA (PTO) “green” chair and outdoor classroom parent chair, plus the Faculty Sustainability Committee. Parents and families continue to make donations and support. Families sign up to work in the garden over the summer. Parents have helped with waste sorting in the lunchrooms. Parents host Earth week activities, host Bike and Walk to school activities; and school supply donation/collection.

Civic engagement can include a number of groups and activities related to the green efforts of the schools. The following groups and activities for school stakeholders and community members can be:

- Illinois Harvest of the month
- Illinois Farm to School Network
- Sustainability committee’s activities
- Boy Scouts and Eagle Scout projects at school
- Zero Waste ambassadors
- Green School National Conference

Wold recommends that District proceed with its strategic plan for civic engagement students and staff. This would include communicating their current district efforts, achievements, and expertise to a wider audience beyond the district itself.

A wide range of community engagement ideas can be found at the Center for Green Schools and at the Green Apple Day of Service: mygreenapple.org/projects website which contains national and international projects that encourage student involvement with their community. One option for teachers to engage with sustainable practices is to acquire the Green Classroom Professional Certificate provided by the USGBC Center for Green Schools. Another resource is kidsoutside.info, chicagowilderness.org, and Seven Generations Ahead.

Building as Teaching Tool

We would highly recommend that the building and site become a demonstration of sustainable practices. Some example teaching tools we noticed were outdoor classrooms, rain barrels and gardens. Also, there were many educational awareness signs for waste reduction and composting. Another recommended tool is an energy dashboard.



Conclusion:

The audit establishes benchmarks and recommendations in each of the 3 Pillars of Sustainability. Next step on any of the recommendations above would be to create a vision and design criteria and integrate in writing in the attached Board policies

Moving forward, Kenilworth SD 38 has a unique opportunity in constructing a new Village House facility with sustainable principles, as well as within the long-term facility master plan and future renovation projects. The D38 strategic plan can integrate and support sustainable education and practices, and reduce expenses on energy use, thus giving those funds back into the classroom. A sustainable vision and goal can guide change and school culture. Communicate the benefits, adopt a plan and go from good to great!

Sustainability Audit - Introduction

SUSTAINABILITY COMMITTEE, APRIL 25, 2019
KENILWORTH SCHOOL DISTRICT 38



Wold

1 in 8

sets foot in
a school
every

day



3 Pillars of Sustainability

Wold

Building Efficiency

Increase:
Material Efficiency
Water Efficiency
Energy Efficiency
Site Efficacy

Healthy Environments

Increase:
Air Quality
Water Quality
Occupant
Performance

Environmental Literacy

Increase:
Environmental
Literacy,
Engagement and
Communication



Sustainability Audit

1. Building Efficiency

Fact-Finding

- Utility Tracking
- Benchmarking
- Report



Deeper Investigation & Analysis

- Energy Performance
- Costs Saving Measures
- Recommendations



2. Healthy Environments

Fact-Finding

- Interviews, Observe
- Gap Identification
- Report



Deeper Investigation & Analysis

- User Surveys
- Best Practices
- Recommendations



3. Environmental Literacy

Fact-Finding

- Interviews, Data
- Gap Identification
- Report



Deeper Investigation & Analysis

- Questionnaires
- Group Meetings
- Curriculum Goals



--- District Roadmap - 5-year, 10-year plan ---



JOSEPH SEARS
EST. 1899

Building Efficiency



32%

less water is used in sustainable schools vs. conventional

30-50%

less energy used in Sustainable schools



Reduce building's impact on environment
Efficient systems, walls, roofs, and sites have proven to save money



JOSEPH SEARS
EST. 1899

Healthy Environments

Wold



90% Americans spend as much as 90% of their time indoors

46% US Schools have poor indoor air quality (EPA)

38% reduced rates of asthma in schools with improved air quality.

Thermal comfort, views to outside, nature, and daylight = improved health, alertness and cognition



Environmental Literacy

Wold



95% of the American public supports environmental education in schools. (NEEFTF)

80% of parents support teaching of climate change (NPR)

12% of American adults can only pass a basic quiz on energy topics.

When students are at center of sustainability program = long term success.



Students have endless supply of energy, ideas, and enthusiasm = Students engaged in their surroundings

Building as Teaching Tool

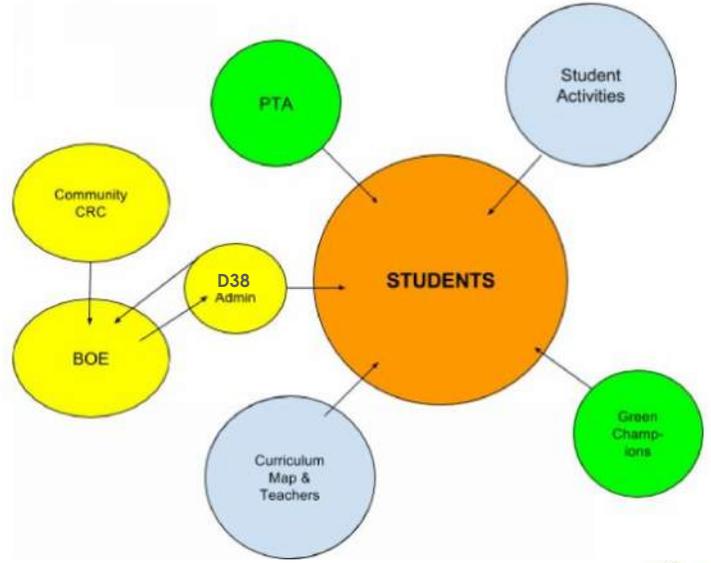
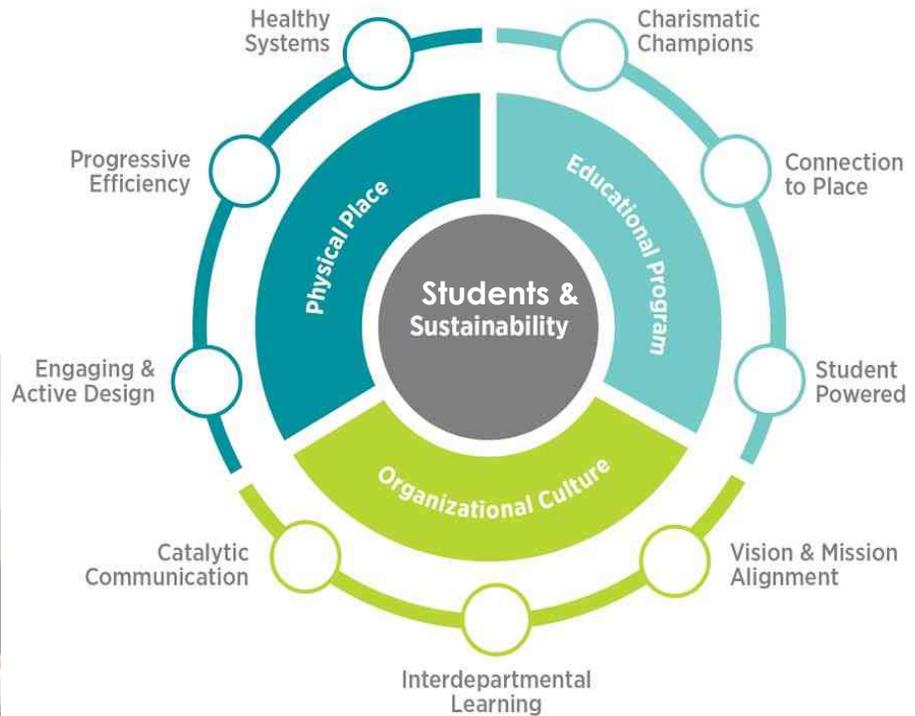


Diagram of Sustainable Relationships Thread Throughout Kenilworth D38

Working towards a balance of:

- ◆ Place
- ◆ Program
- ◆ Culture



centerforgreenschools.org

Twitter:

CntrForGreenSchools

@mygreenschools





AGENDA

Sustainability Audit – Joseph Sears School Thursday, April 25, 2019 – 7:30 a.m.

A. Audit Goals Discussion:

Pillar 1: Resource Use - Reduce environmental impact, resource and energy use.

Pillar 2: Healthy Environments - Improve the health and wellness of students and staff.

Pillar 3: Environmental Literacy - Provide effective environmental and sustainability education.

B. Proposed Timeline 2019:

- May - Kick off, interviews, surveys
- June-August - Facility walks and data gather
- September - Observations, analysis, committee meetings,
- October - Audit draft, recommendations to D38 School Board

C. Roles and Responsibilities:

- Sustainability Committee
- Facility and grounds staff
- Administration
- Parents/PTO

D. Information Needed to be Gathered:

- ✓ Last five (5) years of energy and water bills
- ✓ Green school vision statements or initiatives
- ✓ Past studies or committee reports to school board
- ✓ Previous energy studies or proposals
- ✓ Curriculum maps
- ✓ History of D38 local outreach.

E. Potential Deeper Analysis:

- Waste audit
- Indoor air quality, Acoustics
- Energy modeling
- Student engagement exercises

F. Outcomes:

- Report on achievements and areas for change
- Recommendations
- Living, master document for a Kenilworth D38 sustainable school.

G. Schedule Next Meeting



A Green Schools Model for Comprehensive Sustainability: At Joseph Sears School





AGENDA

Wednesday September 18, 2019 Sustainability Audit Review

Agenda:

- a. Findings of the Audit – Pillars 1, 2, 3 Achievements at JSS
- b. Wold's recommendations for change
- c. Next Steps

Generally – significant efforts from all 3 pillars. Good structures for communication, professional development, Sustainability Committee, JJSPVA, Panthers. However need to set written vision and achieve recognized and measurable standards for schools, then engrain into District Policy and School Board endorsement.

Pillar 1:

Energy Star 75%
20% reduction in energy use – see below

Pillar 2:

ASHREA Standard 55 Thermal Conditions – Climate control
IESNA Illumination
Ventilation ANSI ASHREA 62.1

Pillar 3: FOSS, NGSS - units built-off of vision

“just in the last two years a marked increase in awareness and understanding of how important this all is for our kids and ourselves” - Elisabeth LeBris

Pillar 1:

Achievements:

- Written Policies –4:70 Resource Conservation - manage a program of energy and resource conservation
- 4:150 Facility Management - shall be energy efficient physical environment, Green Cleaning



- Building has new windows, energy compliant roof
- Extensive recycling programs and culture – lunch room, classrooms, technology

Recommendations:

- Demonstrate the current inefficiency of facility to School Board and develop a long term energy-use model.
- Energy Reduction Strategies – LED lighting, occupancy sensors, VAV, HVAC BAS controls, commissioning, replace water heater, auditorium lighting replacement. See cost estimates. Embed energy recommendations and costs into the 5-year Facility Master Plan.
- Go from 35% to 75% Energy Star national benchmark
- Policy – Embed into Policy 4:70, 4:150, 4:160 as a detailed, measurable energy goal.
- Master plan - Establish written standards/guidelines for renovation or new construction:
 - Use renewable energy – investigate solar on existing, geothermal on new
 - LEED Gold or Net-Zero for new Village House design.
 - Written into 10-year facility master plan specific line items with fiscal years and allocated budgets in place.

Pillar 2

Achievements:

- Policy 4:160 Environmental Quality of Buildings and Grounds - hazardous materials, environmental quality, toxins, pesticides etc
- Health / Fitness – PE 30 min daily, outdoor play, Wellness Committee



- Outdoor classes in garden, food sources

Recommendations:

- Green Cleaning compliance
- Indoor environmental air quality audit
- CO2 sensors in classrooms, Low-voc paints

Pillar 3

Achievements:

- Curriculum Maps, Practical Arts
- Cultural and promotional activities and initiatives
- Outstanding growth of sustainability awareness and action due to Sustainability Coordinator's academic integration and waste reduction initiatives.

Recommendations:

- Establish the 'Why' - what is Vision and Goals to guide curriculum change and actions. Focus on a main area of sustainability – for example: net zero, reduce carbon footprint. Communicate to board and community the 'Benefits' and 'What' it looks like.
- Need written curricular plan and strategies long term stemming from the vision statements.
- Need written definition of environmental and sustainable literacy.
- Strongly recommend to continue with Sustainability Coordinator's position and their responsibilities.



Next Steps:

- Oct 3 - Finance Committee Meeting - discuss Audit recommendations
- Oct 7 - Board meeting - approval to proceed with facility master plan process which will contain the Audit's energy reduction recommendations and budgets.
- Nov 4 - Policy Committee Meeting - submit Audit recommendations, Vision and Criteria
- Nov 14 - Finance Committee Meeting - submit Sustainability Committee's Vision and Criteria for endorsement by school board
- November - Green Ribbon School Application open – pursue submission for recognition statewide and nationally
- Implement 10-year energy efficiency and new construction recommendations

D38 Strategic Plan

Vision Statement

All students will be prepared to advance and thrive, now and into the future.

Mission Statement

The Joseph Sears School delivers a personalized educational experience that empowers and challenges each student to grow academically and develop personally.



Guiding Principles:

- We make learning personal
- We support the whole student
- We embrace continuous growth and improvement
- We are a connected community
- We prioritize four core competencies: Curiosity, Creativity, Courage and Compassion

At The Joseph Sears School, we understand that our students need to be ready for a world that is ever-changing.

Green Schools The BIG Picture – Why? D38's case for sustainability

- ❖ Put you in touch with your core mission- educating the next Gen!
- ❖ Help develop relationships with faculty, students and community
- ❖ Your district saves precious dollars and directed to classroom
- ❖ Attract positive PR for being progressive and understanding environmental impacts



District's case for sustainability

- ❖ Foster real world, experiential, and outdoor learning opportunities for students and promote STEM learning
- ❖ Green/sustainability careers are BIG now and future-
- ❖ You will be viewed as a district that "gets it"!
- ❖ Your kids and grandkids will think you are cool !



Environmental Responsibility

Americans consume 25% of the world's energy by only 5% of the earth's population.

Buildings Impact our Lives:

- ❖ Consume almost 40% of all energy
- ❖ Makeup 40% to atmospheric emissions
- ❖ Use 68% of all electricity
- ❖ Use 88% of all potable water
- ❖ Take up to 40% of municipal solid waste stream



Findings of Audit - Step 1

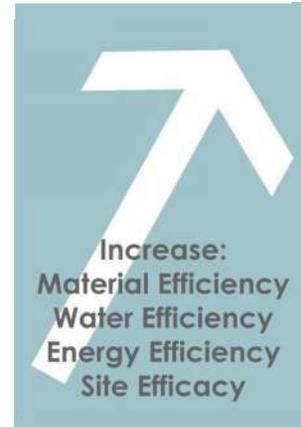
Environmental Literacy



Healthy Environments



Building Efficiency



U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

<http://www2.ed.gov/programs/green-ribbon-schools/>

Audit Highlights - P1

- +Waste reductions thru recycling
- +Board Policies: operations and environment
- +Culture

Need:

- Improve energy - now at 35% Energy Star and \$110K/year
- Written goals for renovations or new (LEED)
- Behavior Modify



Audit Highlights - P2

- +Outdoor Activity
- +Building Maintenance

Check:

- Green Cleaning / Declutter
- IAQ
- Acoustics
- Lighting
- Set standards



Audit Highlights - P3

- +Curriculum content started
- +Sustainability Coordinator
- +Civic Engagement

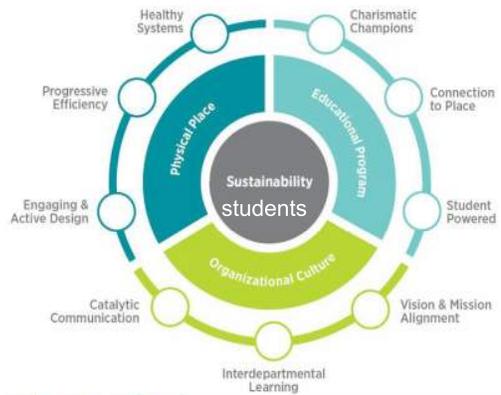
Need:

- Establish the 'WHY'
- Establish the Vision And Guiding Principles



Student Powered, What we know:

- ❖ When Students are at **center** of sustainability program = long-term success.
- ❖ Students have endless supply of energy, ideas, and enthusiasm = resource.
- ❖ Students Engaged in their Surroundings = Building as Teaching



THE CENTER FOR GREEN SCHOOLS

Environmental Literacy and Sustainability

-Nature - Over the last few generations, childhood has moved indoors, leaving kids disconnected from the natural world.

-Global Awareness - environmental problems, issues, and conditions, natural and built environment, lifelong skills that enable learners to address environmental issues.

Green Schools Community

- ❖ District Administration
- ❖ School Board
- ❖ Park District
- ❖ Village
- ❖ Chamber of Commerce
- ❖ Legislature
- ❖ Parents
- ❖ Teachers
- ❖ Students
- ❖ Other Community – Library, Architect, Energy Companies, Custodial Supply Company

Visioning - Group Breakout Questions:

1. How will students play a role in solving environmental issues?
1. How will sustainability change education in 10 years? How can we prepare our students?
1. Which of the findings of each pillar is most relevant?
1. What do you believe is the most pressing environmental issue in our community and world. Highest priority?
1. How can D38 become an example to community for sustainability? Its role?



To: Attendees
From: Mike Eichhorn |
Date: October 10, 2019
Comm. No: 193029

Subject: Kenilworth School District 38
 Visioning Session #1
 Meeting Minutes

Attendees:

Mike Eichhorn, Wold Architects and Engineers meichhorn@woldae.com

Discussion Topics:

- A. Outdoor classroom
 - 1. Daily environment
 - 2. Positive impact
 - 3. Under-utilized
 - 4. Student voice
 - a. Visible signs of changing impact
 - 1) Composting
 - 2) Blue Bins
 - 3) Reusable straws
 - 5. Shared message
- B. How much energy as a school do we use?
 - 1. Sunset Ridge sees their energy
 - 2. Reduce our negative environmental impact
- C. Ask students
 - 1. How can the school become sustainable/more environmentally conscious
 - 2. What would that look like here at school?
 - 3. Did you know; themes
 - 4. From students to students
 - 5. Have students gather school data
- D. Accountability
- E. Know can make an impact
- F. Cautions
- G. More ownership/action
- H. Feel strongly about educate others
- I. Parent educate by students
- J. Steward of Earth
- K. A theme each year

Wold Architects and Engineers
 332 Minnesota Street, Suite W2000
 Saint Paul, MN 55101
 woldae.com | 651 227 7773

**PLANNERS
 ARCHITECTS
 ENGINEERS**



- L. Experimental lab
- M. "Panthers"
- N. Interprets in careers
 - 1. Partnering
 - 2. Values/skills
 - O. Idea tank
- P. Need
 - 1. Umbrella approach
 - 2. Systemic value; not trickle down
 - 3. Shared and embedded
 - 4. Energy consumption
 - 5. Co-ordinator
 - 6. U.N. sustainability development goals = global learnings/are we behind
 - 7. Global citizenship – decision
 - 8. Greta-passion
 - 9. "Give a hoot, don't pollute"
 - 10. Prepare/empower/leadership
- Q. Public speaking
 - 1. Curriculum = starting point/values addressed and certainty
 - 2. Literacy
 - 3. Wellness/clean environment/surroundings
 - 4. "Global issues network"
 - a. Travel
 - b. Student level
 - c. Grade level
 - 5. Built environmental/capital plan
 - 6. Ambitious plan
 - a. How/path/challenge
 - b. Zero waste
- R. Community = village house
 - 1. Stands as a visual example

Pillar 1– Resource Use

Energy Reduction Strategies
Summary
District Interviews
Practices and Usage



KENILWORTH SD 38 - SUSTAINABILITY AUDIT

Pillar 1 - Building Efficiency -Energy Reduction Strategies

Strategy No.	Building Zone	Room Locations	Strategy Type	Recommendation	Method	Decision Factors					
						Accomplish Time	Cost	Disruption to Operations	Improve IAQ	Energy Reduction Level	Feasibility for Payback
1	1970 Addition	All Areas	Variable Air Volume (VAV)	To reduce energy consumption and improve thermal comfort, any future air handling unit or rooftop unit replacements should consider incorporating VAV control strategies.	Replace the existing three air handlers serving the 1970 addition with a single central VAV air handler with zone terminal units with hot water reheat coils. A single central VAV system will eliminate the current simultaneous heating and cooling of the same space, reduce the overall fan energy, and cooling energy consumed. A properly operating VAV system will eliminate all high humidity conditions in the occupied spaces served by the system, improving occupant comfort.	Mid term	\$700K	Medium	Yes	Moderate	High
2	All portions	Various	HVAC System Commissioning	To reduce energy consumption and improve indoor air quality, any future air handling unit, rooftop unit, or unit ventilator replacements should consider incorporating commissioning strategies.	Engage a commissioning agent to perform retro-commissioning on all mechanical system. This will identify the current sequence of operation employed by all mechanical equipment, and verify that all equipment and control devices are operating as intended. Adjustments to the current sequence of operation can then be identified and implemented to optimize the system operation and efficiency.	Near term	\$50K	Low	Yes	Moderate	High
3	All portions	All areas	Condensing Water Heater	To reduce natural gas use, replace the current atmospheric domestic hot water heater	Replace the current atmospheric domestic hot water heater with a self-contained tank type sealed combustion condensing hot water heater. A condensing water heater operated at ~95% peak thermal efficiency compared to standard atmospheric water heater at ~80% thermal efficiency, reducing the amount of natural gas used to heat the domestic hot water. Eliminating the remote storage tank eliminates energy lost from circulation piping to the mechanical room, and eliminates a circulation pump further reducing energy spent heating hot water.	Near term	\$25K	Low	No	Moderate	High

KENILWORTH SD 38 - SUSTAINABILITY AUDIT - SCOPE OF SERVICES



Pillar 1 - Building Efficiency - Reduce Environmental Impact and Costs

Stage	Section No.	Criteria Category	Ref. No.	Guidelines	Actions	Deliverable	Completed: Yes or Date	Comments / Recommendations
Fact Finding	1a	Energy	EE1.0	Energy Performance History	Data Gather; Staff Interviews	Track and Compare Energy Use	✓	Continue future tracking
	1b	Energy	ES3	Energy Star 3. Review of Energy Consumption	Compare Facilities to National Standard; School Data Entry	Energy Star Certification	✓	Currently under 75%, at 35% now
	2a	Water	WE1.1	Potable Water Use History	Data Metering Gather;	Track and Compare Use	NO	Need future tracking
	3a	Sites	WE6.1	Potable Water Use History	Data Metering Gather;	Track and Compare Use	NO	Need future tracking
	4a	Materials and Waste Management	MW1.0	Collection of Recyclables	Data Gather; Staff Interviews	Track and Compare Use	NO	Need future tracking
	5a	Districtwide Integration	II2.1;	District Commitment to Sustainability & Mission	Review current District Mission	Compiled report on current status of Pillar 1	NO	Create Mission Statement & Green Committee at each school
	6a	Maintenance	EP1; BE1; ES1; HV1; HV2; PM1; ED1; CP1; LP1;S11	Maintenance Plans for Building Envelope; Lighting; HVAC; Plumbing; Waste; Cleaning; Landscaping; Snow	Review current practices and Maintenance plans of district	Gap Identification; Compiled report on current status of Pillar 1	✓	Track

KENILWORTH SD 38 - SUSTAINABILITY AUDIT - SCOPE OF SERVICES



Pillar 1 - Building Efficiency - Reduce Environmental Impact and Costs

Stage	Section No.	Criteria Category	Ref No.	Guidelines	Actions	Deliverable	Completed: Yes or Date	Comments
Deeper Investigation & Analysis	1c	Energy	EE1.1; EE5.1	Energy Performance of Systems including: Lighting Interior, Lighting Exterior; Occupancy Sensors; Exit Signs; Vending; Kitchen; EMS	Building Walkthrus; Life-Cycle Cost Analysis; Identification of System Component Performance;	ECMs (Energy Cost Measures), and Recommendations for Retrofits or Changes; Executive Summary of Findings;	NO	Recommend proceed to next step
	1d	Energy	EE3.0; EE5.2	Energy Performance - HVAC Commissioning	Re-Commissioning (recent commissioned projects); Retro-Commissioning (never commissioned)	ECMs (Energy Cost Measures), and Recommendations for Retrofits or Changes; Executive Summary of Findings;	NO	Recommend proceed to next step
	1e	Energy	EE3.2	Building Envelope including windows; roof; walls; sealant	Investigation of Building's Envelope Deficiencies	ECMs (Energy Cost Measures), and Recommendations for Retrofits or Changes; Executive Summary of Findings;	NO	Recommend proceed to next step
	1f	Energy	OM10.1	Alternative Energy	Investigations of Potential Alternative Energy; Geothermal; Solar	Recommendations for Detailed Analysis or Investigations	NO	Recommend proceed to next step
	2b	Water	WE1.1	Performance of Systems - including: Indoor and Outdoor Usage: fixtures; irrigation; and landscaping	Building Walkthrus; Life-Cycle Cost Analysis; Identification of System Component Performance	ECMs (Energy Cost Measures), and Recommendations for Retrofits or Changes; Executive Summary of Findings;	NO	Recommend proceed to next step
	3b	Sites	SS8.1; LP2-8; SS9.1	Impact of Systems - including: stormwater runoff; joint-use of facilities; transportation; turf; landscaping; hardscape; playgrounds; pest management	Site Walkthrus; Identification of Deficiencies; Staff review meetings	Recommendations for Changes; Executive Summary of Findings;	NO	

Pillar 1 - ANALYSIS

4b	Materials and Waste Management	MW3.1 ; ED1-8	Procurement and Use of Materials: Recycled Content; Rapidly Renewable; Collection; Composting; Pest Management	Site Walkthrus; Identification of Deficiencies; Staff review meetings	Recommendations for Changes	NO	Procurement Tracking program being started
5b	Districtwide Integration;	II3.1; HJR45	5-year and 10-year Roadmap; Annual Surveys; District Mission Statements;	Staff Meetings & Evaluation	Annual Report Card ; Comprehensive Summary, Budget, and Timeline for Recommendations	NO	

KENILWORTH SD 38 - SUSTAINABILITY AUDIT - SCOPE OF SERVICES



Pillar 3 - Environmental Literacy

Stage	Section No.	Criteria Category	Ref. No.	Guidelines	Actions	Deliverable	Completed: Yes or Date	Comments
Fact Finding	1	Environmental or sustainability literacy requirements	II6.1	Written definition by school; literacy requirement; integration across curriculum in multiple disciplines; elective course; assesment	Data Gather	Summary of Activities	no	
	2	STEM Content; Green Careers	GR	Outside Partnerships; PLTW;	Data Gather;	Summary of Activities	✓	
	3	Extracurricular Learning	GR	Green Clubs	Data Gather;	Summary of Activities	✓	Strengthen and expand
	4	Civic Engagement of Students	GR	Encourage Environmental topics in students community engagement; Community Garden; Public Service Announcements	Data Gather;	Summary of Activities	✓	Strengthen and expand
	5	Profesional Development	GR, CGS	Sustainability education for teachers; Green Classroom Certificate; Student Learning Standards	Data Gather	Summary of Activities	✓	Strengthen and expand
	6	Building as Teaching Tool	II 5.1, 6.1, 7.1	Educational Display; Demonstration Area; Carbon Footprint Reporting; Energy Dashboard	Data Gather	Summary of Activities	Partial	Strengthen and expand
	7	Outdoor learning to engage in environmental education	IL HHPS	Learning activities to support a Healthy and High Performing School	Data Gather	Summary of Activities	✓	Strengthen and expand

KENILWORTH SD 38 - SUSTAINABILITY AUDIT - SCOPE OF SERVICES



Pillar 3 - Environmental Literacy

Stage	Section No.	Criteria Category	Ref. No.	Guidelines	Actions	Deliverable	Completed: Yes or Date	Comments
Deeper Investigation & Analysis	8	Environmental Literacy; Sustainability Integration into Curriculum	HJR45	House Joint Resolution 45 - Environmental Literacy for Illinois 2010 - strategic plan	Document Group Feedback Forums	Summary	no	
	9	Civic Engagement; Environmental Club; Green Careers; Community Garden	HJR45	Green School Committee; W39 Foundation; PTO	Assist in forming the committee; Speaking engagements	Activities	✓	Strengthen and Improve
	10	Districtwide Events; Field Trips; Workshops	HJR45	Presentations and educational material for public events	Assist in planning and content of events. Engage PTA/PTO	Special Events / Activities	no	Improve
	11	Green Ribbon School Application to national award	CGC	Addresses 3 pillars of Green Ribbon School per US Dept of Education	Documentation for submittal to ISBE	Submittal	no	See Audit
	12	Districtwide Integration; Annual Report Card	II3.1; HJR45	5-year and 10-year Roadmap; Annual Surveys; District Mission Statements	Surveys	Mission statement; Sustainability Commitment Compact	no	See Audit

KENILWORTH SD 38 - SUSTAINABILITY AUDIT



PILLAR 1 - GUIDELINES AND REFERENCES

Stage	Criteria Category	Reference No.	Guidelines and References	Comments
Fact Finding	Energy	EE1.0	Collaboration for High Performance Schools (CHPS) 2019	
	Energy	ES3	Collaboration for High Performance Schools (CHPS) 2019	
	Water	WE1.1	Collaboration for High Performance Schools (CHPS) 2019	
	Sites	WE6.1	Collaboration for High Performance Schools (CHPS) 2019	
	Materials and Waste Management	MW1.0	Collaboration for High Performance Schools (CHPS) 2019	
	Districtwide Integration	I12.1;	Collaboration for High Performance Schools (CHPS) 2019	
	Maintenance	EP1; BE1; ES1; HV1; HV2; PM1; ED1; CP1; LP1;S11	Collaboration for High Performance Schools (CHPS) 2019	

	Energy	EE1.1; EE5.1	Collaboration for High Performance Schools (CHPS) 2019	
	Energy	EE3.0; EE5.2	Collaboration for High Performance Schools (CHPS) 2019	

Pillar 1 - Guidelines

Deeper Investigation & Analysis	Energy	EE3.2	Collaboration for High Performance Schools (CHPS) 2019	
	Energy	OM10.1	Collaboration for High Performance Schools (CHPS) 2019 - Best Practices Manual Vol.4 - Maintenance & Operations	
	Water	WE1.1	Collaboration for High Performance Schools (CHPS) 2019	
	Sites	SS8.1; LP2-8; SS9.1	Collaboration for High Performance Schools (CHPS) 2019	
	Materials and Waste Management	MW3.1; ED1-8	Collaboration for High Performance Schools (CHPS) 2019	
	Districtwide Integration; Annual Report Card	II3.1; HJR45	5-year and 10-year Roadmap; Annual Surveys; District Mission Statements	

KENILWORTH SD 38 - SUSTAINABILITY AUDIT



PILLAR 2 - GUIDELINES AND REFERENCES

Stage	Criteria Category	Criteria No. or Section	Guidelines and References	Comments
Fact Finding	Indoor Air Quality	EE1.0	Collaboration for High Performance Schools (CHPS) 2019	
	Indoor Air Quality	ES3; CP1-10	Collaboration for High Performance Schools (CHPS) 2019	
	Indoor Air Quality	WE6.1	Collaboration for High Performance Schools (CHPS) 2019	
	Indoor Air Quality	MW1.0	Collaboration for High Performance Schools (CHPS) 2019	
	Indoor Air Quality	EQ10.1	Collaboration for High Performance Schools (CHPS) 2019	
	Wellness, Fitness and Nutrition	GR	USDA Healthier US School Challenge; Farm-to-School Program; on-site food garden; USDE Green Ribbon Schools	
	Fitness	GR	USDE Green Ribbon Schools	
	Districtwide Integration	II2.1;	Collaboration for High Performance Schools (CHPS) 2019	
	Maintenance	OM 7.1, OM9.1	Collaboration for High Performance Schools (CHPS) 2019 - Best Practices Manual Vol.4 - Maintenance & Operations	

	Indoor Air Quality	EQ 1.0;	Collaboration for High Performance Schools (CHPS) 2019	
	Indoor Air Quality	EQ5.2	Collaboration for High Performance Schools (CHPS) 2019	

PILLAR 2 - GUIDELINES

Deeper Investigation & Analysis	Wellness	EQ 1.0	Collaboration for High Performance Schools (CHPS) 2019		
	Daylight and views	EQ 11, EQ 12.1	Collaboration for High Performance Schools (CHPS) 2019		
	Acoustics	EQ 14	Collaboration for High Performance Schools (CHPS) 2019		
	Indoor Air Quality	EQ7.0	Collaboration for High Performance Schools (CHPS) 2019		
	Maintenance	OM 6.1,	Collaboration for High Performance Schools (CHPS) 2019 - Best Practices Manual Vol.4 - Maintenance & Operations		
	Districtwide Integration; Annual Report Card	II3.1; HJR45	Collaboration for High Performance Schools (CHPS) 2019; HJR45 C. Data		

KENILWORTH SD 38 - SUSTAINABILITY AUDIT



PILLAR 3 - GUIDELINES AND REFERENCES

Stage	Criteria Category	Criteria No. or Section	Guidelines and References	Comments
Fact Finding	Environmental or sustainability literacy requirements	II6.1	Collaboration for High Performance Schools (CHPS) 2019	
	STEM Content; Green Careers	GR	US Dept of Education - Green Ribbon Schools Criteria	
	Extracurricular Learning	GR	US Dept of Education - Green Ribbon Schools Criteria	
	Civic Engagement of Students	GR	US Dept of Education - Green Ribbon Schools Criteria	
	Professional Development	GR, CGS	US Dept of Education - Green Ribbon Schools Criteria; Center for Green Schools	
	Building as Teaching Tool	II 5.1, 6.1, 7.1	Collaboration for High Performance Schools (CHPS) 2019	
	Outdoor learning to engage in environmental education	IL HHPS	Illinois Resource Guide for Healthy and High Performing School Buildings	

Analysis	Environmental Literacy; Sustainability Integration into Curriculum	HJR45	Journal of Sustainability Education; House Joint Resolution 45 - Environmental Literacy for Illinois 2010 - strategic plan; Appendix 5 Survey	
	Civic Engagement; Environmental Club; Green Careers; Community Garden		House Joint Resolution 45 - Environmental Literacy for Illinois 2010 - strategic plan	

Pillar 3 - Guidelines

Deeper Investigation &	Districtwide Events; Field Trips; Workshops	HJR45	House Joint Resolution 45 - Environmental Literacy for Illinois 2010 - strategic plan; Appendix 7.		
	Green Ribbon School Application to national award		US Dept of Education - Green Ribbon Schools Criteria; Center for Green Schools		
	Districtwide Integration	II3.1; HJR45	Collaboration for High Performance Schools (CHPS) 2019; HJR45 C. Data		

KENILWORTH SD 38 - PK12 EDUCATION - SUSTAINABILITY AUDIT



GENERAL REFERENCES

Guidelines and References	Comments
<ul style="list-style-type: none"> • EPA - Energy Star for Commercial Buildings • Illinois Green Cleaning Act 	
<ul style="list-style-type: none"> • ASHRAE 62 (ventilation for acceptable indoor air quality) • ASHRAE 55 (thermal comfort) • ANSI – Classroom Acoustics Guidelines • IESNA Lighting Handbook (lighting quality) 	
<ul style="list-style-type: none"> • USGBC LEED for Existing Buildings O&M 	
<p>Collaboration for High Performance Schools (CHPS) 2019</p>	
<ul style="list-style-type: none"> • ISBE - US Dept of Education Green Ribbon Schools 2015 - 3 Pillar Criteria 	
<p>House Joint Resolution 45 - Environmental Literacy for Illinois 2010 - strategic plan; Appendix 7. Illinois Resource Guide for Healthy and High Performing School Buildings</p>	



Sustainability Audit - Survey Questionnaire Pillars 1 and 2

Dear Moris:

We are conducting a Sustainability Audit for Joseph Sears School. We are collecting data on the facility's energy and resource use, its indoor environment, and environmental and sustainability curriculum. Districts across Illinois and the nation are taking a comprehensive approach to greening their schools. A comprehensive approach incorporates environmental education while improving energy performance and health impact of the school facility.

The audit documents and reports on achievements, progress, and future goals in Three Pillars of Sustainability Schools:

- Pillar One: Reduce environmental impact, energy use, and water use.
- Pillar Two: Improve the indoor environment and wellness of students and staff.
- Pillar Three: Literacy - Provide effective environmental and sustainability education.

As Director of Buildings and Grounds, the questions will help you demonstrate your efforts and achievements made under **Pillar One and Two, which cover the facilities resource use, maintenance and health of occupants.** The questions may require you to reach out to a variety of staff within your district as needed.

Instructions: Please use this personalized Google doc file to enter and save your answers. A link has been provided to you. Within the Google drive folder, you may upload any other attachments you want us to see.

Deadline is Wednesday, May 29 at end of day. Please do not hesitate to see Katie Nahrwold or contact me directly.

Regards,

Michael Eichhorn, AIA, LEED AP BD+C, Senior Education Planner
Wold Architects and Engineers



Your Contact Data:

Please provide data for your school site only:

1. Your name: Moris Quijada
2. Your Title or Roles: Director of buildings and Grounds.
3. Your School Name and Address:
The Joseph Sears School
542 Abbotsford Rd, Kenilworth, IL 60043
4. Primary Contact Telephone:
5. Primary Contact Email: mquijada@kenilworth38.org
6. Website: <https://www.kenilworth38.org/>
7. Student Enrollment of School



Pillar 1: Reduction in Resource Use (Energy, Water, Waste)

1. Can you demonstrate reduction in energy use over a certain period? If yes, please describe method and data from last 3 years. (i.e.: Lighting, Building automation, HVAC, CO2 controls, kitchen equipment use). Provide utility bill copies. Provide list of energy saving construction projects completed.

Please see the energy use chart used for Energy Star report by WOLD

See attached Energy use data and graphs

The correlation between building projects and energy reduction has not been started.

2. Demonstrate a reduction in environmental impacts from your transportation fleet? (i.e.: carpooling, limiting diesel exhaust exposure, safe routes to school, anti-idling) Time period, policies in place? No
3. Do you use onsite renewable energy? No
4. Do you purchase renewable energy through your utility? No
5. Please describe your policies or guidelines in place related to construction and renovation projects and resource-use reduction. (i.e., recycled content, debris disposal, system selection and review, ANSI standards, LEED rating system)

Currently none



6. Describe how any school construction or renovation projects occurring in the past ten years that meet green building standards, including any certification earned. (i.e. LEED, long-range commitments)

Currently none. Past projects included Roofing in 2008,2009,2011 and HVAC improvements in 2009 which would have had to have met the IBC Energy Code, but no records show that it went beyond this minimum or met any LEED ratings. LED Lighting project in 2009/2009. Gym lighting was replaced in 2011. Emergency lights are old and could be replaced with LED

Project for 2019/2020: At Auditorium lighting - Max Casas is planning to replace the existing, high-energy use 1000W incandescent bulbs with LED. The energy costs saving from:

1/ the reduction in electrical costs

2/ the air conditioning load is reduced with less heat given off from lighting and dimmer rack.

3/ less replacement of bulbs which is now 3 times per year. Currently spend \$5,000/year for bulb replacement.

Other energy reducing procedures and practices:

- Student PCs go into sleep mode after 10 minutes in teh Labs; and 40 minutes in classrooms. Office PCs are turned-off at the end of the day.
- Smart boards and flat screens are under centralized control for power . Projectors turn off at the end of the day.
- Weekly emails go out to staff to remind them to reduce power use by turning off when not in use
- Lighting - classrooms have occupancy sensors in only about 30% of them. There is a timer but it is nt used
- Cleaning crew is instructed to turn off all lights at the end of the day.

Water Use:

7. What is your school's water use per person? (gallons/occupancy/year)

Unknown. Not tracked.

However, the toilets are autoflush, low flow, and faucets are timed out.

8. Can you demonstrate a reduction in your school's total water consumption from an initial baseline? (ie. you establish one from a few years prior to renovation work which



then resulted in a water reduction) If yes, what projects were completed and how did you document water reduction? What was the reduction in water achieved?

No

9. Is the school's landscaping considered water-efficient and/or regionally appropriate?

Currently have a sprinkler system that's only turned on during the summer.

10. Describe alternative water sources used for irrigation if any:

Rain barrels for the garden and lawn areas.

11. Which does the school's drinking water come from? Municipal or a localized water source?

Municipal system

12. Are any portions of the school grounds devoted to ecologically beneficial uses (i.e.: rain gardens, native plant habitat, outdoor classrooms)? if yes describe use, time of year, and approximate size and location on property

Outdoor classroom. Involves parents to maintain students involvement which leads to student made salads for lunch and study as part of their classes.

Waste Reduction:

13. What percentage of your school's total office/classroom paper content is post-consumer material, fiber from forests certified as responsibly managed, and/or chlorine-free?

Recycled content- still needs to be okayed by school board due to its increase in costs.

14. List the amounts of hazardous materials used at your school, including specific products and how they are stored, measured, and disposed of properly.

Flammable liquids:



Corrosive liquids:

Toxics:

Mercury:

Chemicals for Science: [Science collects ALL chemicals for disposal](#)

Describe purchasing, storage, and disposal policies for: Cleaning products, Hazardous waste, and Biohazard.

15. How is waste disposal and recycling tracked? Provide data, policies and quantity for last 3 years: (ie cubic yards/year, # of dumpsters. Disposal of electronic products, oil, batteries, tires, soil nutrients, lunch food waste, metals, cardboard, etc.)

[Approximately 86,000 copies per month currently \(per Max\).Waste is not tracked. The school has \(2\) dumpsters which are used 1-1/2 per day with a pickup every day of approximately 2 yards or trash. Also, \(2\) recycling containers at 2 times per week](#)

16. Do you operate a compost program or no-waste policy for food and landscaping waste?

[Yes. started 2 years ago. We use a 55 gallon container. Each classroom has its own separate compost bin.](#)

[Lunch has 3 bins for recycling and separation.](#)

[Food vendor is asked and encouraged to not put food in packaging \(like apples\) and to move towards composable products](#)

17. Any other recycling or resource-use reduction programs in school?

[Recycling of fluorescent bulbs/lamps . Batteries are refurbishable](#)

[Toner cartridges are recycled Paper recycled, Pens, markers recycled, paper is reused for art/testing, and memo pads.](#)

[Restrict use of printers by students. Students are taught "smart printing". Now considering use of key fobs for students. Using "Genesis" print management software which finds heavy users to target for teaching to reduce the number of prints.](#)

[Tech recycling in classrooms - Use "Midwest Heartland Business Solutions to collect any electronic \(4 years old for students, and 4 years old for teachers\) Tech is sold back to "Classform" to then sell to other institutions. Servers are replaced every 4-6 years.](#)



Phone system is recycled and we repurpose the 3D printers. Projector bulbs are recycled.

18. Describe how your school is implementing Environmentally Preferable Purchasing/Green Purchasing or products and equipment for administration, instruction, and/or maintenance. (i.e. custodial paper products, HEPA vacuum cleaner, watt misers, electronic documents, appliance purchases)

Looking into a new company from outside school. Vendor is not "greenseal", only hand soap is Greenseal.

Hand soap is Greenseal. Currently using an outside vendor but looking at a new company that is fully greenseal compliant.

Alternative Transportation

19. What percentage of students take the following to get to/from school?

40% walking and 60% car drop off

20. Describe how these percentages were collected and calculated.

21. Has your school implemented any of the following? (Enter all that apply and describe details and timeframes implemented)

- a. Designated carpool parking stalls.
- b. A well-publicized no idling policy that applies to all vehicles.

No, had one in the past but parents ignored

- c. Vehicle loading/unloading areas are at least 25 feet from building intakes, doors and windows.
- d. Safe Pedestrian Routes to School or Safe Routes to School.

Yes participate and safe Routes to school and there is an underpass for pedestrians to link to the other side of the Village at the trains. There are crossing guards in place



- e. Secure bicycle storage (such as bicycle lockers, racks, or rooms) is provided to encourage bicycling to school.

Yes

22. Describe how your school transportation use is efficient and has reduced its environmental impact. (i.e.: walk, bike, bus, or carpool. Drop-off and pick-up Idling, routes more efficient)

23. Describe any other efforts by district staff, groups, or students toward reducing environmental impact, focusing on innovative or unique practices and partnerships. (i.e.: intergovernmental agreement, committees, organizations, volunteering, advocating, Community Garden.)

24. Does your school participate in federal, state, or utility school energy incentive or grant programs? For example Illinois Clean Energy Now, Energy Star.

In process of swapping out for us and bulbs with LED

Pillar 2: Healthy Environments:

1. Can you demonstrate your playground equipment or other structures are safe from environmental contaminants? (i.e.: playground structures, woodchips, safety)

Current playground equipment is now steel and aluminum, not wood. We only use certified wood chips that are safe for play.

2. Demonstrate your drinking water is protected from potential contaminants? Time period? If yes, how? (i.e.: cleaning, water source reporting, lead, testing)

Passed required state Board of Ed school lead test. Drinking fountains with replaceable cartridges.



3. Do you have a process or policy to control moisture within your buildings and clean-up when necessary? Describe.

Not written policy, but practice to control water and moisture infiltration into building.
Waterproofing applied to foundation. Water goes to sump pump

4. Do you have carbon monoxide monitors/alarms? If not, what is the plan to implement.
Yes. Battery operated located at boiler rooms and at RTUs, installed as per insurance company.

5. Do you remove sources of elemental mercury and prohibit future purchases?

6. Describe your green cleaning policy, training program, and procedures? Do they meet required standards, like SIPC, and do they go beyond state and OSHA requirements? Describe or attached details related to floor finishes, extraction, filtration, stripping, and other related to annual or daily maintenance:

All are "Green Seal" solutions except for the wax stripper. In 2008 new floor tile was installed but it needs to be waxed. It's not no-wax. We wax 2x/year with Venra flooring. Future cleaning bids to be more green.

7. Do you have a chemical management plan to minimize student exposure? For example: "Green Seal" cleaning products.

8. Please describe Indoor Air Quality Improvement procedures practiced to support healthy indoor air. (For example: annual audits, testing lab samples, removed asbestos-containing materials, replaced carpeting, minimizing mold and dust mites, asthma, food allergens, hand wipes, HVAC equipment, fresh air intakes, filters changed, operable windows, CO2 detectors, surveying occupants for example)

Some testing on roof from old leak. Electro-magnetic was moved away from school

9. Does your school do the following; If yes, please describe and dates implemented. If not, do your have plans to implement in the near future?



- a. Participate in the USDA's Healthier US School Challenge or similar program?
 - b. Participate in a Farm-to-School program, or similar program?
 - c. Have an on-site food garden, or similar program?
 - d. Spend at least 120 minutes per week in PE, or give amount spent?
 - e. Integrated health measures into school, or student assessments?
 - f. Conduct at least of 50% of PE classes outdoors, or give amount?
10. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices and/or partnerships. (i.e.: Board Policy on Physical education, committee to monitor the implementation, fitness classes after school, wellness screening, Field Trips, local products, fresh produce)

Food - Currently cafeteria is K-4 in main building and 5-8 in Village House. Lunch is 50% brought from home, 50% purchased at school. Tables always cleaned up afterwards.

Physical Ed - everyday for 30 min for all ages. Lunch break for 40 minutes - 20 min eat, 20 minutes recess. Pre-K eat at home. Kindergarten 50 minute lunch plus outdoor play.

Movement Minutes during the day. Students encourage outside as much as possible. Have new climbing wall and high-ropes for variety of exercise. Gym mats are sent out to be cleaned once per year.

11. Does your school have a written integrated pest management plan, please describe or list sources.

Yes, have a report

12. Which of the following indoor environmental standards are employed at your school? Indicate and describe all that apply:
- i. Acoustics (less than 45 dBA).
 - ii. Day-lighting and high-quality electrical light
 - iii. Good relative humidity control (ASHRAE 30-60%).

None



13. Describe how your school controls and manages chemicals routinely used in the school to minimize student and staff exposure.

14. Describe the steps your school has taken to ensure that it is lead-safe.

15. How has your school installed local exhaust systems for major airborne contaminant sources. (i.e. kitchen, science labs, restrooms, hallways, server rooms, home economics room, and the gymnasium.)

Science labs and woodshop have exhaust when needed

16. Describe your school's practices for inspecting and maintaining the building's ventilation system and all unit ventilators to ensure they are clean and operating properly.

AHU - 3x per year; Unit Vents in Classroom 2x per year.

17. Describe actions your school takes to ensure that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards.

Annual Tune-ups 2x per year; change filter 3x per year

Air Comfort:

Air conditioning is having issues, but efforts are constantly being made to improve. The BAS . The current BAS allows for scheduling of the unit vents, but not being used now.

18. Please describe your policies or guidelines in place related to construction and renovation projects standards on indoor air quality for occupants (i.e., VOC paint, HVAC, automation, exhaust, natural ventilation)

Currently Low-VOC is not a standard paint. Humidity controlled only in new addition portion

Auditorium and Gym - have CO2 sensors - from a 2008 upgrade to energy efficient controls



District Wide, General Sustainability Questions:

1. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects

[SWANCC Award - for recycling program](#)
'Waste Reduction First'

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



Energy Reduction Recommendations

LOW HANGING FRUIT:

Low- and no-cost energy-efficiency measures:

Operations and maintenance

- Conduct a nighttime audit to find out what's on afterhours that shouldn't be.
- Optimize start-up time, power-down time, and equipment sequencing.
- Review and emphasize the financial and environmental results of a preventative maintenance program for major systems and components.
- Set goals and a methodology to track and reward improvements.
- Visually inspect insulation on all piping, ducting and equipment for damage (tears, compression, stains, etc.).
- Assign someone to turn off printers, copiers, and fax machines at the end of each day. A copier left on all day and night costs more than \$150 annually.
- Install vending machine misers to reduce annual operating costs by \$300 per year.

Lighting

- Use task lighting where feasible in lieu of total room lighting
- Remove unnecessary lamps (de-lamp) in overlit areas.

Office equipment

- Plug electronics into a "smart" power strip that let you designate which electronics should always be on, and which ones do not need power when they're not in use.

Heating and cooling

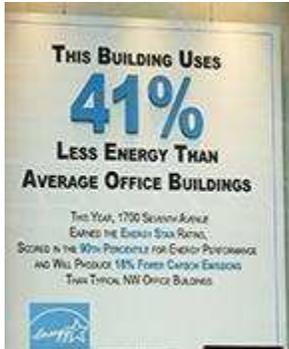


- Control direct sun through windows depending on the season and local climate. During cooling season, block direct heat gain from the sun shining through glass on the east and especially west sides of the facility. Depending on your facility, options such as "solar screens," "solar films," awnings, and vegetation can help. Over time, trees can attractively shade the facility, and help clean the air.
- Clean the evaporator and condenser coils on heat pumps, air-conditioners, or chillers. Dirty coils inhibit heat transfer; keeping coils clean saves energy.
- Measure and track energy performance using EPA's ENERGY STAR Portfolio Manager tool.
- Make sure that areas in front of vents are clear of furniture and paper. As much as 25% more energy is required to distribute air if your vents are blocked

Communication and education

- Educate employees and building occupants about how their behaviors affect energy use. ENERGY STAR has plenty of materials to help in the [communications toolkit](#).
 - Ensure that team members from every department are trained in the importance of energy management and basic energy-saving practices. Hold staff meetings on energy use, costs, objectives, and employee responsibilities.
 - Educate staff about how their behaviors affect energy use. Some teams have created energy patrols to monitor and inform others when energy is wasted.
 - Develop a "green energy team" and assign responsibilities to pursue energy efficiency in all areas.
 - Reward energy-efficient behaviors and habits to engage employees in helping your organization save energy.
-
- **Host an energy fair.** Invite local vendors to set up booths, give away free LED bulbs and ENERGY STAR materials, and then use the opportunity to share your organization's energy reduction goals and how you need their help.

- **Post performance for all to see.** You can't expect your employees and tenants to care about saving energy if you don't give them any information about what you're doing. This Seattle office building hung this sign in its window, prompting an employee to take a picture and put it on his blog. He thought it was great and was excited to share the news with his friends.



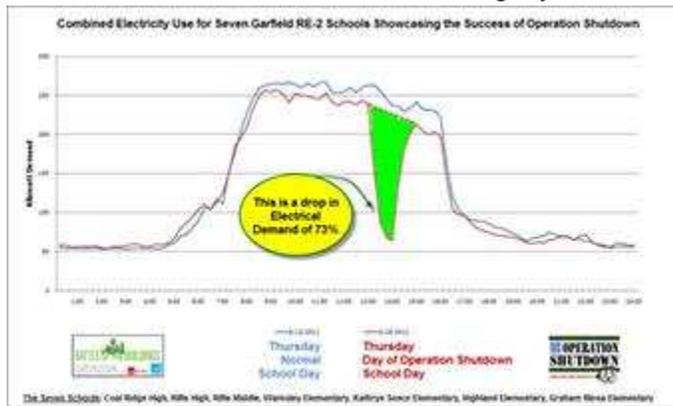
- **Let them engage each other.** These students at NC State University made a series of YouTube videos explaining how to save energy in their dorm, Tucker Hall. Studies show that people tend to trust messages more if they come from people who are similar to themselves. So find a few enthusiastic employees to help spread the message to their peers.



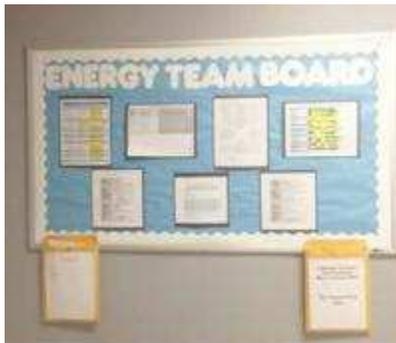
- **Show them the results of their actions.** During Operation Shutdown at Crystal River Middle School, students ran around the building shutting down all non-essential lighting and equipment for one hour. The next day, they were all shown the graph, below, which shows the results of their actions: a 73% reduction in energy use during that hour. Show them that their actions really DO



make a difference, and it will be easier to get your buildings occupants to take those actions.



-
- **Let them know you value their actions.** Sometimes it's easy to forget to show your appreciation once your goals are reached. But by letting your employees and tenants know that their efforts are valued and appreciated, you're more likely to get their support the next time around.
- **Host a competition.** A great way to make saving energy exciting and bring out your occupants' competitive spirit is to host a competition.
- **Communicate, communicate, communicate.** You occupants won't help unless you ask them for it. Use all the channels you have to help get the word out, whether it's sending monthly blast emails with tips, posting on social media, hanging up posters and reminders around the halls and common areas, or creating an energy team bulletin board, like Intertape Polymer Group did, below.



- **Don't underestimate them.** They DO care. They have good ideas. All you need to do is give them the opportunity

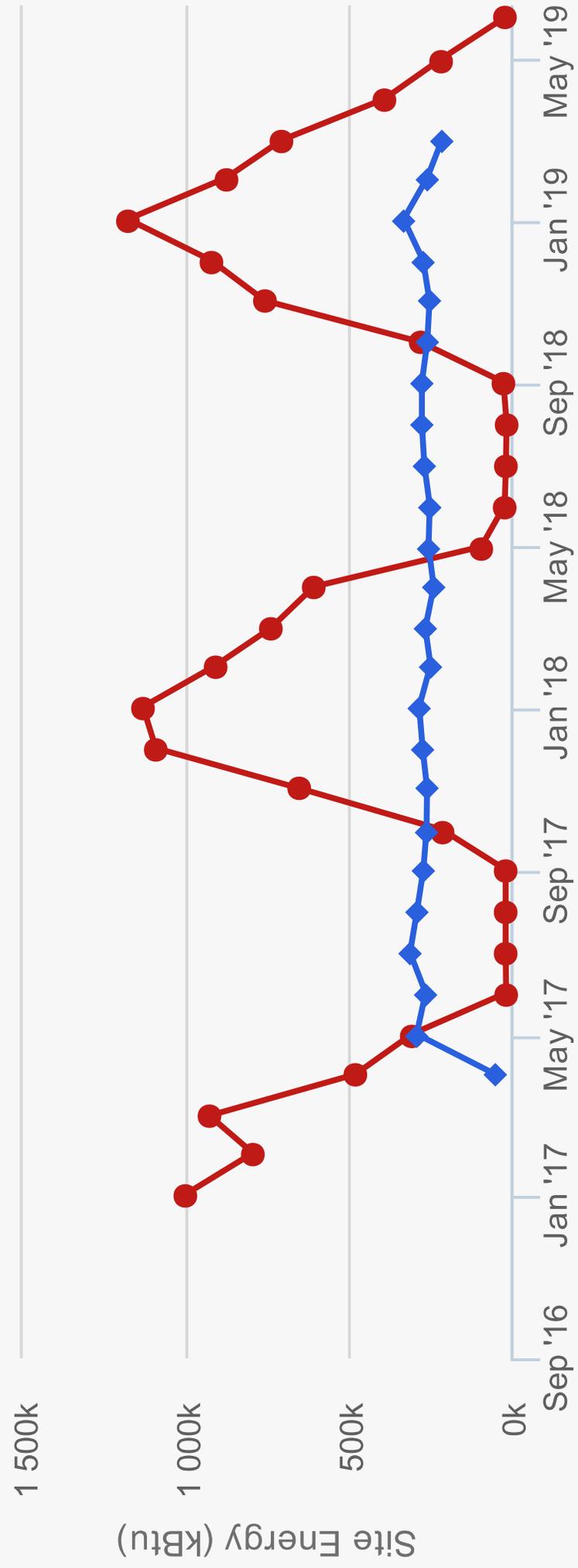
Pillar 1– Resource Use:

-Energy Star Certification

-Energy Tracking Report

- District School Board
Policies and Strategies

Energy Use by Calendar Month (Not Weather Normalized) for Kenilworth 38 Joseph Sears School



● Natural Gas ◆ Electric - Grid

Start Date (Required)	End Date (Required)	Usage (Required)	Cost (Optional)	Estimation (Required)
9/1/2017	9/30/2017	157.48	383.38	No
10/1/2017	10/31/2017	2095.42	1182.35	No
11/1/2017	11/30/2017	6502.71	3027.38	No
12/1/2017	12/31/2017	10914.21	4905.83	No
1/1/2018	1/31/2018	11306.18	5030.19	No
2/1/2018	2/28/2018	9070.68	4395.23	No
3/1/2018	3/31/2018	7378.28	3324.38	No
4/1/2018	4/30/2018	6057.56	2584.62	No
5/1/2018	5/31/2018	901.77	883.97	No
6/1/2018	6/30/2018	182.65	547.92	No
7/1/2018	7/31/2018	151.16	398.38	No
8/1/2018	8/31/2018	124.91	396.47	No
9/1/2018	9/30/2018	220.45	438.28	No
10/1/2018	10/31/2018	2766.84	1401.84	No
11/1/2018	11/30/2018	7552.95	2722.84	No
12/1/2018	12/31/2018	9200.01	4347.77	No
1/1/2019	1/31/2019	11769.7	5475.21	No
2/1/2019	2/28/2019	8740.73	3852.74	No
3/1/2019	3/31/2019	6920.58	2995.46	No

Start Date (Required)	End Date	Usage (Required)	Cost (Optional)	Estimation (Required)
4/26/2017	5/25/2017	81049	\$5,124.07	No
5/25/2017	6/28/2017	85477	\$8,289.83	No
6/28/2017	7/26/2017	83087	\$7,260.91	No
7/26/2017	8/24/2017	79328	\$7,033.71	No
8/24/2017	9/22/2017	78560	\$7,745.47	No
9/22/2017	10/23/2017	74808	\$6,688.10	No
10/23/2017	11/21/2017	73088	\$7,117.92	No
11/21/2017	12/22/2017	77561	\$7,271.75	No
12/22/2017	1/26/2018	93555	\$8,594.97	No
1/26/2018	2/26/2018	80328	\$7,167.84	No
2/26/2018	3/27/2018	72867	\$6,964.47	No
3/27/2018	4/25/2018	66688	\$6,656.95	No
4/25/2018	5/24/2018	68935	\$7,104.54	No
5/24/2018	6/25/2018	77190	\$8,145.98	No
6/25/2018	7/25/2018	75291	\$7,384.42	No
7/25/2018	8/23/2018	72946	\$7,237.43	No
8/23/2018	9/24/2018	87803	\$8,704.71	No
9/24/2018	10/23/2018	69864	\$7,082.83	No
10/23/2018	11/21/2018	71310	\$7,094.11	No
11/21/2018	12/26/2018	83640	\$8,006.62	No



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ENERGY STAR® Progress & Goals Report

35

ENERGY STAR®
Score¹

Kenilworth 38 Joseph Sears School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 115,700
Built: 1960

For Year Ending: February 28, 2019
Date Generated: August 16, 2019

Property Address:
Kenilworth 38 Joseph Sears School
542 Abbotsford Rd
Kenilworth, Illinois 60043

Property ID: 7726978

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 12/31/2017)	(Ending Date 2/28/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	43	35	19	N/A	50	75

Energy

Site EUI (kBtu/ft²)	67.1	75	11.8	N/A	64.7	49.1
Source EUI (kBtu/ft²)	104.5	126.7	21.3	N/A	109.3	82.9
Energy Cost (\$)	N/A	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (¢)	N/A	N/A	N/A	N/A	N/A	N/A

Greenhouse Gas Emissions

Total GHG Emissions (Metric Tons CO2e)	667.3	820.2	22.91	N/A	707.4	536.7
Total GHG Emissions Intensity (kgCO2e/ft²)	5.8	7.1	22.91	N/A	6.1	4.6

Water

All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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energystar.gov

ENERGY STAR® Data Verification Checklist

35

ENERGY STAR®
Score¹

Kenilworth 38 Joseph Sears School

Registry Name: Kenilworth 38 Joseph Sears School

Property Type: K-12 School

Gross Floor Area (ft²): 115,700

Built: 1960

For Year Ending: Feb 28, 2019

Date Generated: Aug 16, 2019

1. The ENERGY STAR score is a 1-to-100 assessment of a building's energy efficiency as compared with similar building nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Kenilworth 38 Joseph Sears School
542 Abbotsford Rd
Kenilworth, Illinois 60043

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 7726978

1. Review of Whole Property Characteristics

Basic Property Information

- 1) **Property Name:** Kenilworth 38 Joseph Sears School Yes No
Is this the official name of the property?
If "No", please specify: _____
- 2) **Property Type:** K-12 School Yes No
Is this an accurate description of the primary use of this property?
- 3) **Location:** Yes No
542 Abbotsford Rd
Kenilworth, Illinois 60043
Is this correct and complete?
- 4) **Gross Floor Area:** 115,700 ft² Yes No

Is value an accurate account of the gross floor area for the property?

5) Average Occupancy (%): 100

Yes No

Is this occupancy percentage accurate for the entire 12 month period being assessed?

6) Number of Buildings: 1

Yes No

Does this number accurately represent all structures?

7) Whole Property Verification:

Yes No

Does this application represent the entire property? If any space or energy use has been excluded from this property, please describe it in the notes section below.

Notes:

Indoor Environmental Quality

1) Outdoor Air Ventilation

Yes No

Does this property meet the minimum ventilation rates according to ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality?

2) Thermal Environmental Conditions

Yes No

Does this property meet the acceptable thermal environmental conditions according ANSI/ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy?

3) Illumination

Yes No

Does this property meet the minimum illumination levels as recommended by the Illuminating Engineering Society of North America (IESNA) Lighting Handbook?

Notes:

2. Review of Property Use Details

Parking: Parking Use

★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

★ 1) **Open Parking Lot Size:** 15,000 ft²

Yes No

Is this the total area that is lit and used for parking vehicles? Open Parking Lot Size refers specifically to open area, which may include small shading covers but does not include any full structures with roofs. Parking lot size may include the area of parking spots, lanes, and driveways.

★ 2) **Partially Enclosed Parking Garage Size:** 0 ft²

Yes No

Is this the total area of parking structures that are partially enclosed? This includes parking garages where each level is covered at the top, but the walls are partially or fully open.

★ 3) **Completely Enclosed Parking Garage:** 0 ft²

Yes No

Is this the total area of parking structures that are completely enclosed on all four sides and have a roof? This includes underground parking or fully enclosed parking on the first few stories of a building.

★ 4) **Supplemental Heating:** No

Yes No

Is this the correct answer to whether your parking garage has Supplemental Heating, which is a heating system to pre-heat ventilation air and/or maintain a minimum temperature during winter months?

Notes:

K-12 School: Building Use

★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

★ 1) **Gross Floor Area:** 109,700 ft²

Yes No

Is this the total size, as measured between the outside surface of the exterior walls of the building(s)? This includes all areas inside the building(s) such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation. Gross Floor Area is not the same as rentable, but rather includes all area inside the building(s). Leasable space would be a sub-set of Gross Floor Area. In the case where there is an atrium, you should count the Gross Floor Area at the base level only. Do not increase the size to accommodate open atrium space at higher levels. The Gross Floor Area should not include any exterior spaces such as balconies or exterior loading docks and driveways.

★ 2) **High School:** No

Yes No

Is this the correct answer to whether the property is a high school (teaching grades 10, 11, and/or 12)? If the property teaches to high school students at all, then it is a high

school. For example, if the school teaches grades K-12 (elementary/middle and high school), then it is considered a high school.

★ 3) **Number of Workers on Main Shift:** 95

Yes No

Is this the number of workers present during the main shift? Note that this is not a total count of workers, but rather a count of workers who are present at the same time. For example, if there are two daily eight hour shifts of 100 workers each, the Number of Workers on Main Shift value is 100. Number of Workers on Main Shift may include employees of the property, sub-contractors who are onsite regularly, and volunteers who perform regular onsite tasks. Number of Workers should not include visitors to the buildings such as clients, customers, or patients.

4) **Student Seating Capacity:** 459

Yes No

Is this the maximum number of students for which the school was designed? This should include the seating capacity of the entire school. If portable classrooms have been added to the school, include the capacity of these classrooms, as they expand the overall capacity of the school.

5) **Months in Use:** 12

Yes No

Is this the total number of months that the property is open for standard activities?

★ 6) **Weekend Operation:** No

Yes No

Is this the correct answer to whether the property includes regular activities on the weekend beyond the scope of maintenance, cleaning, and security personnel? Weekend activity includes any time when the property is used for classes, performances, or other school or community activities, on one or both days of the weekend during one or more seasons of the year.

7) **Number of Computers:** 206.5 ← default

Yes No

Is this the total number of desktop computers, laptops, and data servers at the property? This number should not include tablet computers, such as iPads, or any other types of office equipment. The count should only reflect computers that are owned by the school. It should not include any computers that are brought onsite by students or staff.

★ 8) **Cooking Facilities:** No

Yes No

Is this the correct answer to whether the property has a commercial cooking area designed to provide and serve food to occupants and/or visitors? Commercial kitchens include restaurants and cafeterias, but not employee break room kitchens.

9) **Gross Floor Area Used for Food Preparation:** 0 ft²

Yes No

Is this the correct Gross Floor Area Used for Food Preparation? It is defined as the total size of all large/commercial kitchen areas used for the storage and preparation of food. It is a subset of the property Gross Floor Area. It should not include small kitchens, employee break rooms/pantries, concession stands, or service and seating areas.

10) **Number of Walk-in Refrigeration/Freezer Units:** 0

Yes No

Is this the total count of walk-in units at the property? The Number of Walk-in Refrigeration/Freezer Units is the total count of walk-in units at the property. Walk-in Refrigeration/Freezers are large enough for a person to actually walk into. They may or may not have a door, plastic strips, or other flexible covers.

★ 11) **Percent That Can Be Heated:** 100

Yes No

Is this the total percentage of the property that can be heated by mechanical equipment?

★ 12) **Percent That Can Be Cooled:** 60

Yes No

Is this the total percentage of the property that can be cooled by mechanical equipment?
This includes all types of cooling from central air to individual window units.

13) **Gymnasium Floor Area:** 8,260 ft²

Yes No

Is this the correct floor area for the gymnasium, including gymnasium/athletic areas, spectator areas, locker rooms, and other associated spaces?

14) **School District:** Kenilworth SD

Yes No

Is this the administrative school district in which the property is located?

Notes:

Performing Arts: Performing Arts Use

★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

★ 1) **Gross Floor Area:** 6,000 ft²

Yes No

Is this the total size, as measured between the outside surface of the exterior walls of the building(s)? This includes all areas inside the building(s) such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation. Gross Floor Area is not the same as rentable, but rather includes all area inside the building(s). Leasable space would be a sub-set of Gross Floor Area. In the case where there is an atrium, you should count the Gross Floor Area at the base level only. Do not increase the size to accommodate open atrium space at higher levels. The Gross Floor Area should not include any exterior spaces such as balconies or exterior loading docks and driveways.

2) **Weekly Operating Hours:** 20

Yes No

Is this the total number of hours per week that the property is occupied by the majority of the employees? It does not include hours when the HVAC system is starting up or shutting down, or when property is occupied only by maintenance, security, cleaning staff, or other support personnel. For properties with a schedule that varies during the year, use the schedule most often followed.

3) **Number of Workers on Main Shift:** 2

Yes No

Is this the total number of workers present during the primary shift? This is not a total count of workers, but rather a count of workers who are present at the same time. For example, if there are two daily eight hour shifts of 100 workers each, the Number of Workers on Main Shift value is 100. Number of Workers on Main Shift may include employees of the property, sub-contractors who are onsite regularly, and volunteers who perform regular onsite tasks. Number of Workers should not include visitors to the buildings such as clients, customers, or patients.

4) Number of Computers: Not entered Yes No

Is this the total number of computers, laptops, and data servers at the property? This number should not include tablet computers, such as iPads, or any other types of office equipment.

Notes:**3. Review of Energy Consumption****Data Overview****Site Energy Use Summary**

Natural Gas (kBtu)	5,504,700.7 (63%)
Electric - Grid (kBtu)	3,172,942.1 (37%)
Total Energy (kBtu)	8,677,642.8

National Median Comparison

National Median Site EUI (kBtu/ft ²)	64.7
National Median Source EUI (kBtu/ft ²)	109.3
% Diff from National Median Source EUI	15.9%

Energy Intensity

Site (kBtu/ft ²)	75
Source (kBtu/ft ²)	126.7

Emissions (based on site energy use)

Greenhouse Gas Emissions (Metric Tons CO ₂ e)	820.2
--	-------

Power Generation Plant or Distribution Utility:

Commonwealth Edison Co

Note: All values are annualized to a 12-month period. Source Energy includes energy used in generation and transmission to enable an equitable assessment.

Summary of All Associated Energy Meters

The following meters are associated with the property, meaning that they are added together to get the total energy use for the property. Please see additional tables in this checklist for the exact meter consumption values. **Note: please review all meter entries, making note of any unusual entries, and, if they are correct, provide a manual note to explain.**

Meter Name	Fuel Type	Start Date	End Date	Associated With:
Sears Electric Grid Meter	Electric - Grid	04/26/2017	In Use	Kenilworth 38 Joseph Sears School
Natural Gas Sears School	Natural Gas	01/01/2017	In Use	Kenilworth 38 Joseph Sears School

Total Energy Use Yes No

Do the meters shown above account for the total energy use of this property during the reporting period of this application?

Additional Fuels Yes No

Do the meters above include all fuel types at the property? That is, no additional fuels such as district steam, generator fuel oil have been excluded.

On-Site Solar and Wind Energy

Yes No

Are all on-site solar and wind installations reported in this list (if present)? All on-site systems must be reported.

Notes:

Electric - Grid Meter: Sears Electric Grid Meter (kWh (thousand Watt-hours))

Associated With: Kenilworth 38 Joseph Sears School

Start Date	End Date	Usage	Green Power?
02/26/2018	03/27/2018	72,867	No
03/27/2018	04/25/2018	66,688	No
04/25/2018	05/24/2018	68,935	No
05/24/2018	06/25/2018	77,190	No
06/25/2018	07/25/2018	75,291	No
07/25/2018	08/23/2018	72,946	No
08/23/2018	09/24/2018	87,803	No
09/24/2018	10/23/2018	69,864	No
10/23/2018	11/21/2018	71,310	No
11/21/2018	12/26/2018	83,640	No
12/26/2018	01/26/2019	99,500	No
01/26/2019	02/26/2019	84,000	No
02/26/2019	03/26/2019	69,441	No
Total Consumption (kWh (thousand Watt-hours)):			999,475
Total Consumption (kBtu (thousand Btu)):			3,410,208.7

Total Energy Consumption for this Meter

Yes No

Do the fuel consumption totals shown above include consumption of all energy tracked through this meter that affect energy calculations for the reporting period of this application (i.e., do the entries match the utility bills received by the property)?

Notes:

Natural Gas Meter: Natural Gas Sears School (therms)

Associated With: Kenilworth 38 Joseph Sears School

Start Date	End Date	Usage
03/01/2018	03/31/2018	7,378.28
04/01/2018	04/30/2018	6,057.56
05/01/2018	05/31/2018	901.77
06/01/2018	06/30/2018	182.65
07/01/2018	07/31/2018	151.16
08/01/2018	08/31/2018	124.91
09/01/2018	09/30/2018	220.45
10/01/2018	10/31/2018	2,766.84
11/01/2018	11/30/2018	7,552.95
12/01/2018	12/31/2018	9,200.01
01/01/2019	01/31/2019	11,769.7
02/01/2019	02/28/2019	8,740.73
Total Consumption (therms):		55,047.01
Total Consumption (kBtu (thousand Btu)):		5,504,701

Total Energy Consumption for this Meter

Yes No

Do the fuel consumption totals shown above include consumption of all energy tracked through this meter that affect energy calculations for the reporting period of this application (i.e., do the entries match the utility bills received by the property)?

Notes:

4. Signature & Stamp of Verifying Licensed Professional

_____ (Name) visited this site on _____ (Date). Based on the conditions observed at the time of the visit to this property, I verify that the information contained within this application is accurate and in accordance with the Licensed Professional Guide.

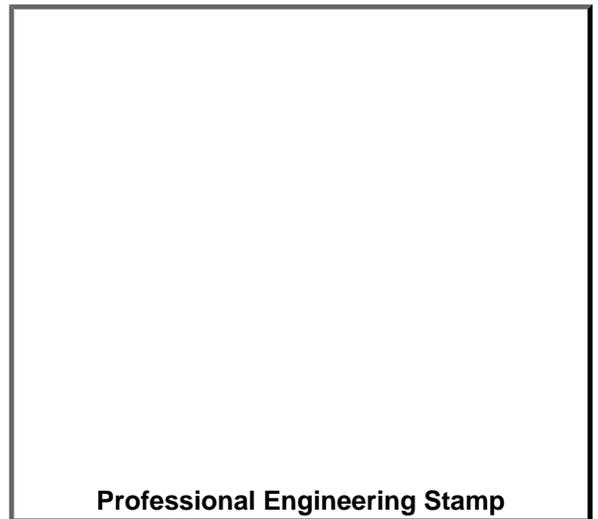
Signature _____

Date _____

Licensed Professional

,
(____)____-____

NOTE: When applying for the ENERGY STAR, the signature of the Verifying Professional must match the stamp.



(if applicable)



LEARN MORE AT
energystar.gov

ENERGY STAR[®] Statement of Energy Performance

35

ENERGY STAR[®]
Score¹

Kenilworth 38 Joseph Sears School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 115,700
Built: 1960

For Year Ending: February 28, 2019
Date Generated: August 16, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Kenilworth 38 Joseph Sears School
542 Abbotsford Rd
Kenilworth, Illinois 60043

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 7726978

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

75 kBtu/ft²

Annual Energy by Fuel

Natural Gas (kBtu) 5,504,701 (63%)
Electric - Grid (kBtu) 3,172,942 (37%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 64.7
National Median Source EUI (kBtu/ft²) 109.3
% Diff from National Median Source EUI 16%

Source EUI

126.7 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 820

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)

Operational Services

Facility Management and Building Programs

The Superintendent shall manage the District's facilities and grounds as well as facility construction and building programs in accordance with the law, the standards set forth in this policy, and other applicable School Board policies. The Superintendent or designee shall facilitate: (1) inspections of schools by the North Cook Intermediate Service Center and State Fire Marshal or designee, and (2) review of plans and specifications for future construction or alterations of a school if requested by the relevant municipality, county (if applicable), or fire protection district.

Standards for Managing Buildings and Grounds

All District buildings and grounds shall be adequately maintained in order to provide an appropriate, safe, and energy efficient physical environment for learning and teaching. The Superintendent or designee shall provide the Board with periodic reports on maintenance data and projected maintenance needs that include cost analysis.

Standards for Green Cleaning

The Superintendent or designee shall establish and supervise a green cleaning program that complies with the guidelines established by the Illinois Green Government Coordinating Council.

Standards for Facility Construction and Building Programs

On an annual basis, the Superintendent or designee shall provide the Board with projected facility needs, enrollment trends, and other data having an impact on facility use. Board approval is required for all new facility construction and expansion.

When making decisions pertaining to design and construction of school facilities, the Board will confer with members of the staff and community, the Illinois State Board of Education, and educational and architectural consultants, as it deems appropriate.

LEGAL REF.: 42 U.S.C. §12101 et seq.
20 ILCS 3130/, Green Buildings Act.
105 ILCS 5/10-20.49, 5/10-22.36, 5/17-2.11, 140/, and 230/.
410 ILCS 25/, Environmental Barriers Act.
820 ILCS 130/, Prevailing Wage Act.
23 Ill.Admin.Code Part 151, School Construction Program; Part 180, Health/Life Safety Code for Public Schools; and Part 2800, Green Cleaning for Elementary and Secondary Schools.
71 Ill.Admin.Code Part 400, Ill. Accessibility Code.

CROSS REF.: 2:150 (Committees), 2:170 (Procurement of Architectural, Engineering, and Land Surveying Services), 4:60 (Purchases and Contracts), 8:70 (Accommodating Individuals with Disabilities)

Operational Services

Resource Conservation

The Superintendent or designee shall manage a program of energy and resource conservation for the District that includes:

1. Periodic review of procurement procedures and specifications to ensure that purchased products and supplies are reusable, durable, or made from recycled materials, if economically and practically feasible.
2. Purchasing recycled paper and paper products in amounts that will, at a minimum, meet the specifications in The School Code, if economically and practically feasible.
3. Periodic review of procedures on the reduction of solid waste generated by academic, administrative, and other institutional functions. These procedures shall: (a) require recycling the District's waste stream, including landscape waste, computer paper, and white office paper, if economically and practically feasible; (b) include investigation of the feasibility of potential markets for other recyclable materials that are present in the District's waste stream; and (c) be designed to achieve, before July 1, 2020, at least a 50% reduction in the amount of solid waste that is generated by the District.
4. Adherence to energy conservation measures.

LEGAL REF.: 105 ILCS 5/10-20.19c.

CROSS REF.: 4:60 (Purchases and Contracts), 4:150 (Facility Management and Building Programs)

Operational Services

Environmental Quality of Buildings and Grounds

The Superintendent shall take all reasonable measures to protect: (1) the safety of District personnel, students, and visitors on District premises from risks associated with hazardous materials, and (2) the environmental quality of the District's buildings and grounds. Before pesticides are used on District premises, the Superintendent or designee shall notify employees and parents/guardians of students as required by the Structural Pest Control Act, 225 ILCS 235/, and the Lawn Care Products Application and Notice Act, 415 ILCS 65/.

LEGAL REF.: 29 C.F.R. §1910.1030, Occupational Exposure to Bloodborne Pathogens, as adopted by the Illinois Department of Labor, 56 Ill.Admin.Code §350.300(c).
 29 C.F.R. §1910.1200, Occupational Safety and Health Administration Hazard Communication Standards, as adopted by 820 ILCS 255/1.5, Toxic Substances Disclosure to Employees Act.
 20 ILCS 3130/, Green Buildings Act.
 105 ILCS 5/10-20.17a; 5/10-20.48; 135/; and 140/, Green Cleaning School Act.
 225 ILCS 235/, Structural Pest Control Act.
 415 ILCS 65/, Lawn Care Products Application and Notice Act.
 820 ILCS 255/, Toxic Substances Disclosure to Employees Act. (*inoperative*)
 23 Ill.Admin.Code §1.330, Toxic Materials Training.

CROSS REF.: 4:150 (Facility Management and Building Programs), 4:170 (Safety)



JOSEPH SEARS
EST. 1899

Kenilworth School District No. 38 Strategic Plan

Vision Statement

All students will be prepared to advance and thrive, now and into the future.

Mission Statement

The Joseph Sears School delivers a personalized educational experience that empowers and challenges each student to grow academically and develop personally.

Guiding Principles

We make learning personal

We celebrate each student's strengths, abilities and interests and use those as the foundation for personalized instruction. The scale of our school allows us to establish teacher/student connections that facilitate this process. We know our students, but we also encourage them to know themselves as they play a key role in their personal learning process.

We support the whole student

We have high expectations for our student's academic experience as well as their personal experience. We want our students to have skills and dispositions that help them as they navigate and progress through school and beyond. This necessitates a holistic view as we support and educate our students in matters of character, citizenship and social emotional learning.

We embrace continuous growth and improvement

We are committed to instilling a growth mindset in our learning community to ensure our students strive to reach their full potential and that they focus on true learning. We create opportunities for students to experience risk and failure and instill the importance of courage and resilience that are an inherent part of that learning process.

We are a connected community

We are committed to cultivating the connectedness that is a hallmark of our community. This connectedness is multi-faceted and includes connection between teachers and students, collaboration amongst our educators, and relationships that extend beyond the schoolhouse to our community. Our traditions connect us together as an extended community. Our four cornerstones serve to ground and reinforce this connection.

We prioritize four core competencies: Curiosity, Creativity, Courage and Compassion

At The Joseph Sears School, we understand that our students need to be ready for a world that is ever-changing. We believe that there are core competencies which will support our students in whatever path they take into the future. These competencies cross disciplines and will support our students to continue learning throughout their lives, think creatively and critically and act with courage, conviction and empathy.

Strategic Priorities

1. **The Sears Student**: Provide students with the curriculum, instruction and assessment that fosters growth and challenges them in keeping with the mission of The Joseph Sears School
2. **The Sears Educator**: Hire, develop & retain high-performing faculty and staff that embrace continuous improvement in service of Sears students
3. **The Sears Community**: Engage all Sears families and community organizations to communicate and collaborate in a respectful and transparent manner
4. **The Sears Finances and Operation**: Maintain a solid short- and long-term financial position while investing in resources and infrastructure that align with educational priorities

Portrait of a Sears Graduate

Fearless Learner

Sears graduates enjoy new challenges and are eager to learn from their mistakes.

Creative Thinker

Sears graduates are brave and innovative thinkers.

Courageous Advocate

Sears graduates demonstrate empathy by advocating for themselves and others.

Compassionate Citizen

Sears graduates better their communities by modeling the Four Cornerstones



THE JOSEPH SEARS SCHOOL

GREEN GUIDELINES FOR JOSEPH SEARS SCHOOL ACTIVITIES & EVENTS

Follow these simple suggestions to inform your purchasing, set-up, and clean-up decisions to make our school, our community, and our planet a greener place to live! Please contact Katie Nahrwold if you have questions KNahrwold@kenilworth38.org - 847-853-3851

1. Request a compost bin to use at your event. All food, paper, Eco products can be composted.
2. Use materials that can be consumed, reused, recycled or composted. All “Eco-Products” (plates, cups, bowls) used at Sears School ARE COMPOSTABLE.
3. Avoid #6 PLASTIC CUPS (Solo cups and more)! #6 plastic cups are not recyclable. Please purchase #1 - #5 and #7 plastic, which is recyclable, or paper, which is compostable and biodegradable.
4. Avoid STYROFOAM CUPS! They are not generally recyclable.
5. Limit or avoid single-use plastics instead use reusable items such as cloth table coverings, real silverware, glasses and plates. Consider using a pitcher or liquid dispenser and reusable or compostable cups instead of single-use plastic bottles. The school has Gatorade and plastic drink dispensers available for events.
6. Pair every waste/landfill bin with a recycling bin and compost bin including clear signage indicating what goes where. **Recycle*** all high-grade paper and cardboard, and empty plastic, aluminum, and glass bottles and containers. (All materials must be free of food residue).
Compost* all food and paper waste (napkins, plates, cups).
7. Make sure that all recyclable, compostable and landfill materials are picked up and disposed of appropriately after the event. Contact Katie if you have questions.
8. Communicate expectations to students, parents, teachers, coaches and staff so that everyone cooperates and respects the guidelines. Contact Katie for signage or support.

* see next page for landfill, recycling and composting lists

Joseph Sears Lunchroom Recyclable, Compostable & Landfill List

THINK BEFORE YOU THROW!



Recyclable - All items free of food and liquid waste

- Milk cartons (remove all straws and liquid)
- Water bottles, Gatorade-type bottles (leave the caps on)
- All plastic containers with *PETE (#1) and HDPE (#2), 3, 4, 5, & 7 symbols underneath.
- Juice boxes (not Caprisun type containers, and remove all straws and liquid)
- Aluminum foil (if it's not burned or greasy, and only foil material)
- Aluminum, food and beverage cans.
- Frozen food paper boxes
- Corrugated Cardboard

Compostable

- All

food

- Napkins and Paper Towels
- Paper bags and cardboard that contain significant food stains
- All our paper products which are BPI certified compostable- cups, plates, bowls
- Paper lunch sacks
- Pizza boxes - please stack rather than put in compost bin
- Paper straw wrappers

o Note: Standard paper soup cups and bowls have paper on the outside, but a poly-liner on the inside which will prevent the paper from breaking down

o Note: Standard paper water cups have paper on the outside, but a poly liner on the inside which will prevent the paper from breaking down

Landfill

- Tinfoil tops to yogurts/juice cups, etc.
- Straws
- Plasticware
- Chip bags, candy wrappers, etc
- Capri Sun (and the likes) juice pouches
- Plastic sandwich bags, Ziploc
- #6 plastic (Styrofoam)
- Plastic plates
- Plastic cups
- Wipes (used at Harper for every child after lunch)

When in *Doubt, Throw it Out!* Rather than hold up a line of children.

Recovery

Any unopened or uneaten food

Pillar 1– Resource Use

Construction Projects

Facility Plans and Data

JOSEPHH SEARS SCHOOL CONSTRUCTION PROJECTS - RECENT

2008. Project

Construction manager. --PCM - April 2008-July 2010 \$535,805.10
General. Contractor.-----Boller construction July 2008- July 2014 \$1,152,381.72
Flooring.-----Libertyville & Carpet December 2008-April 2010
\$351,584.00
Roofing.-----A1 Roofing August 2008 - May 2013 \$830,253.75
Lockers-----Murphy & Jones November 2008 - January 2009
\$51,356.00
Plumbin-----Ernie Peterson Plumbing July 2008 - April 2009
\$51,156.00
HVAC-----Premier Mechanical June 2008 - November 2010
\$2,016,918.00
Electrical-----Becker Electric June 2008 - April 2009 \$172,601.00

2009 project.

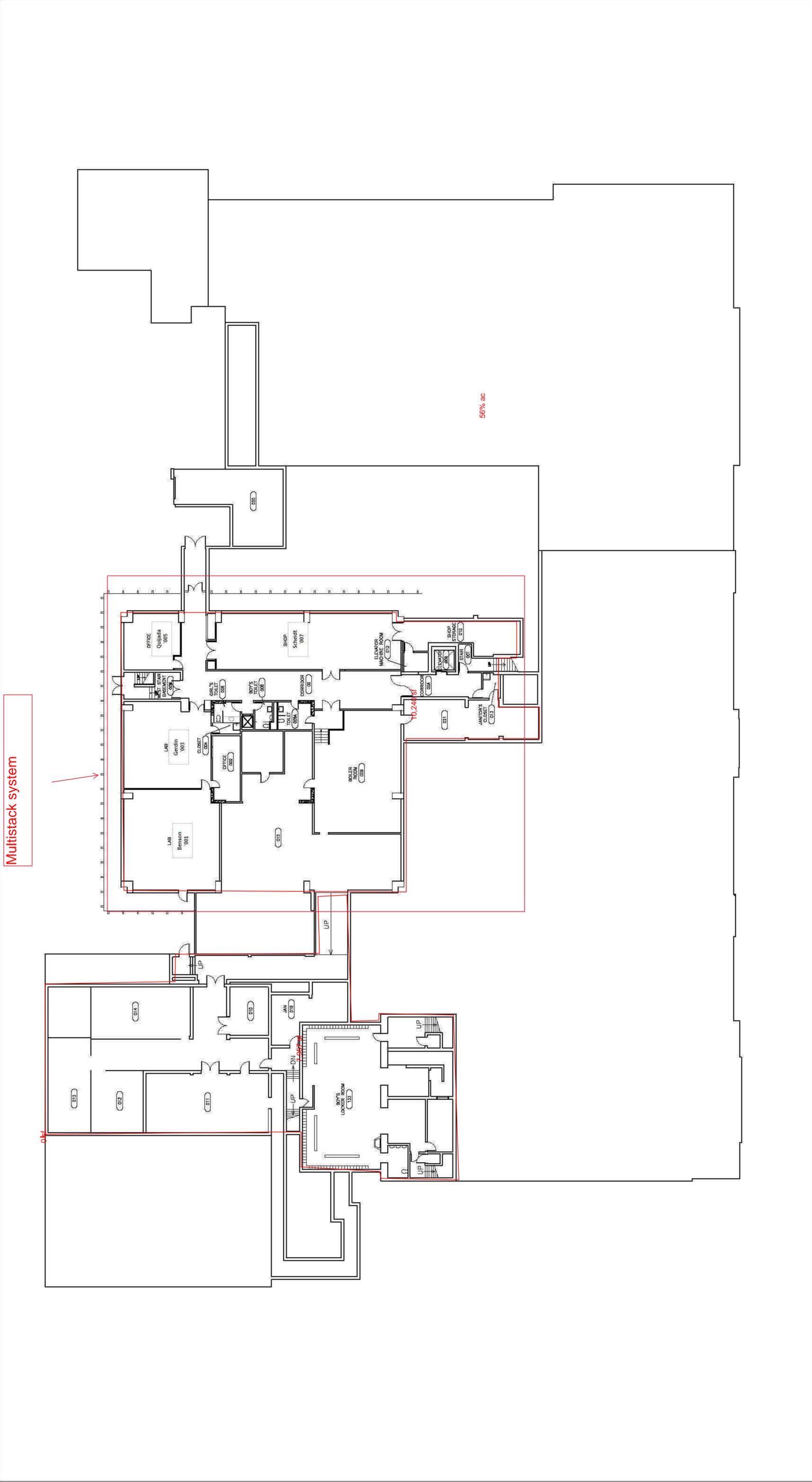
Contraction manager-----PCM
General contractor-----Boller construction.
Demolition -----EHC industries . January 2009 - August 2010 \$255,422.00
Steel -----TA bowman. June 2009 - March 2010 \$206,510.00
Roofing-----A-1 roofing.
Windows-----ALLIANCE GLASS+METAL, Inc. August 2009 -April 2010
\$464,217.00
Flooring ----- Libertyville & Carpet. September 2008 - April 2010
\$331,584.00
Acustical -----Just rite acoustics August 2009 -July 2010 \$118,581.00
Painting -----Rufallow painting. June 2009 -May 2010 \$100,646.09
Lockers -----storage services. Storage Systems, Inc. February 2011
\$50,366.00
Pluming -----MG plumbing. July 2009 - May 2010 \$166,394.05
HVAC -----premier Mechanical.
Electric-----senate electric Case. June 2009 - May 2010 \$578,009.28
Case work lowery -----McDonnell July 2009 - November 2012 \$92,670.00
asbestos abatement-----MK. April 2004 - April 2013 \$39,613.75

2011 project.

General construction -----Camosy construction.Camosy
Gym roof -----A-1 roofing.
Gym new Wood Floor-----?
Gym new lighting-----Pieper Ellectric INC
Gym HVAC-----MG Mechanical.

2012 project.

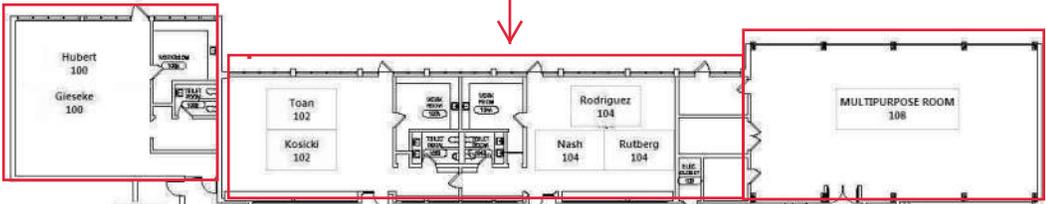
Building foundation waterproofing.
General construction.-----



Multistack system



Ductless Mini-Split



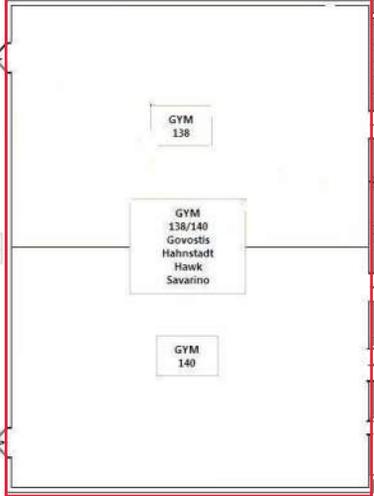
Multistack system



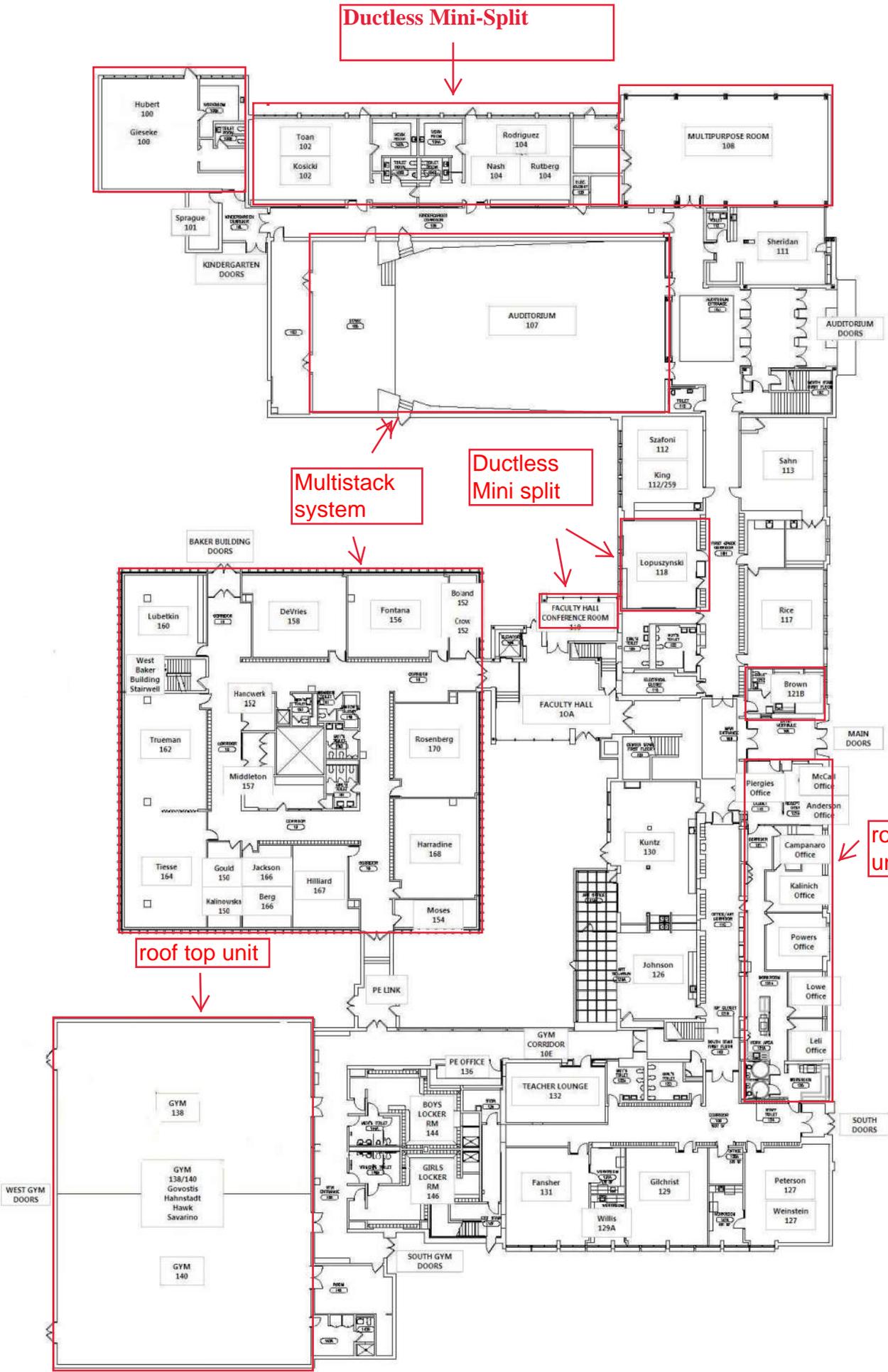
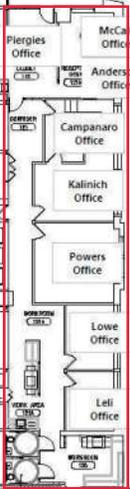
Ductless Mini split

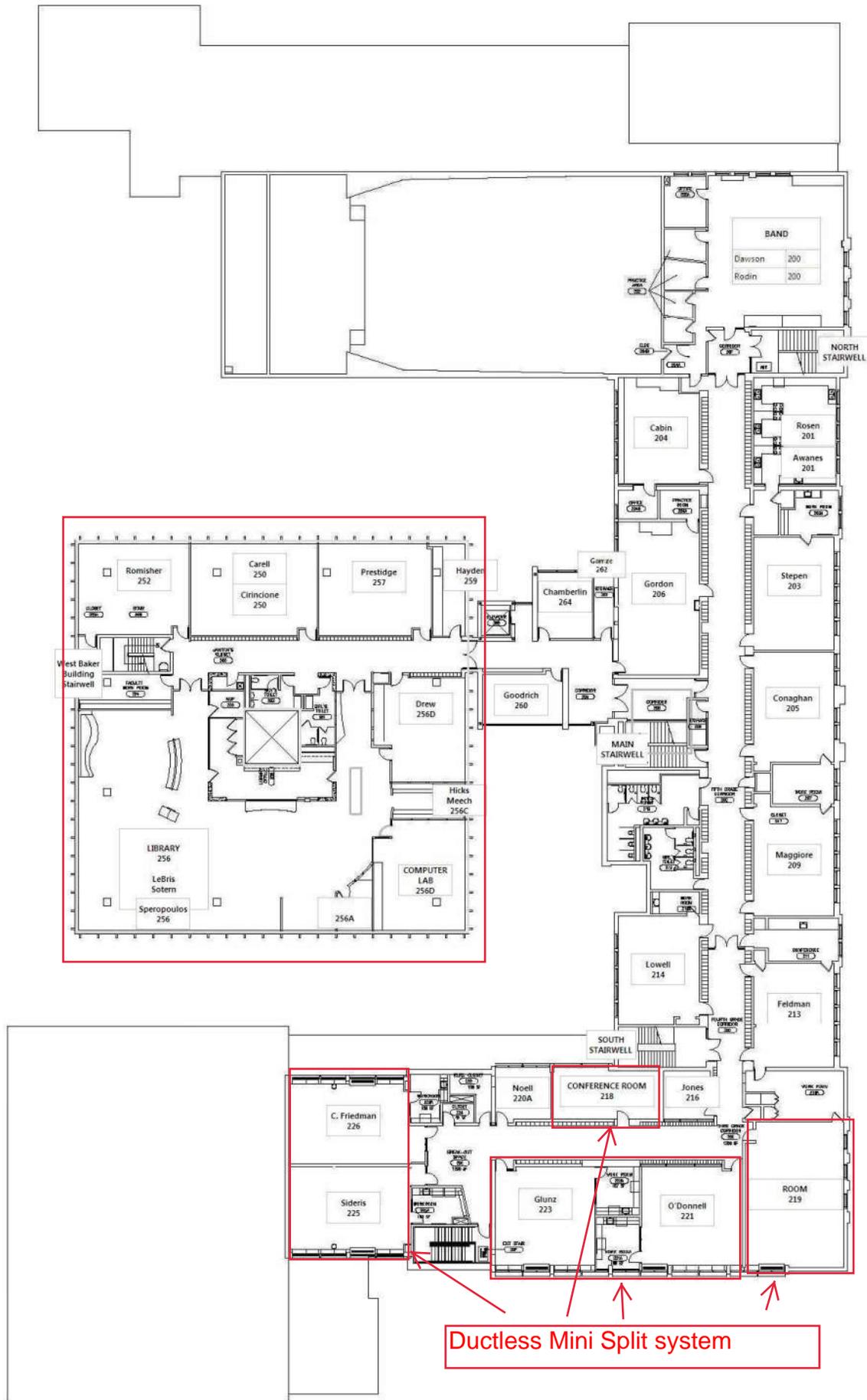


roof top unit



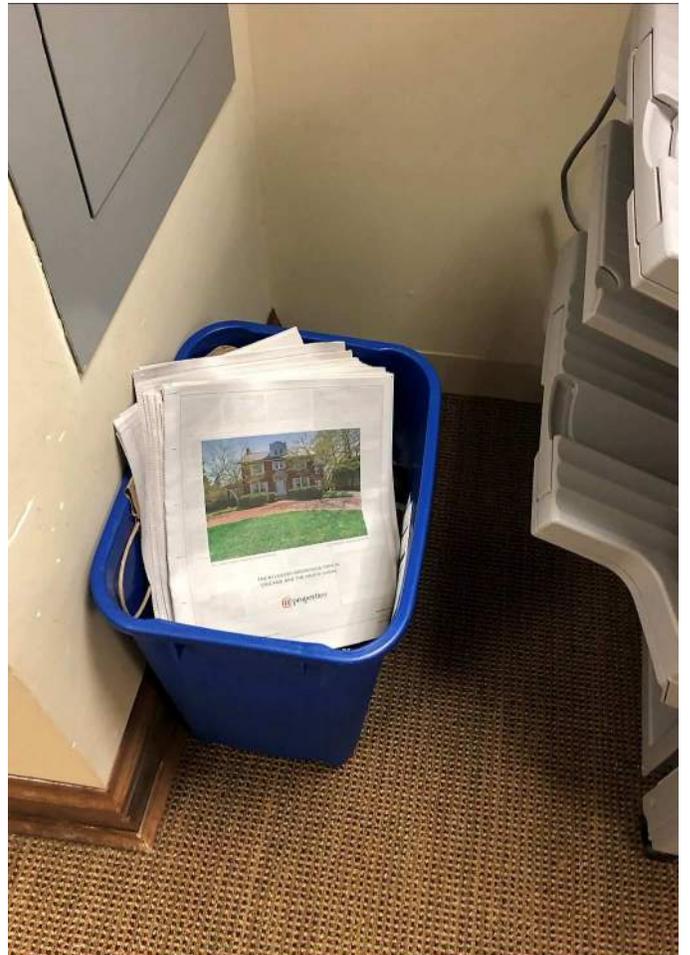
roof top unit

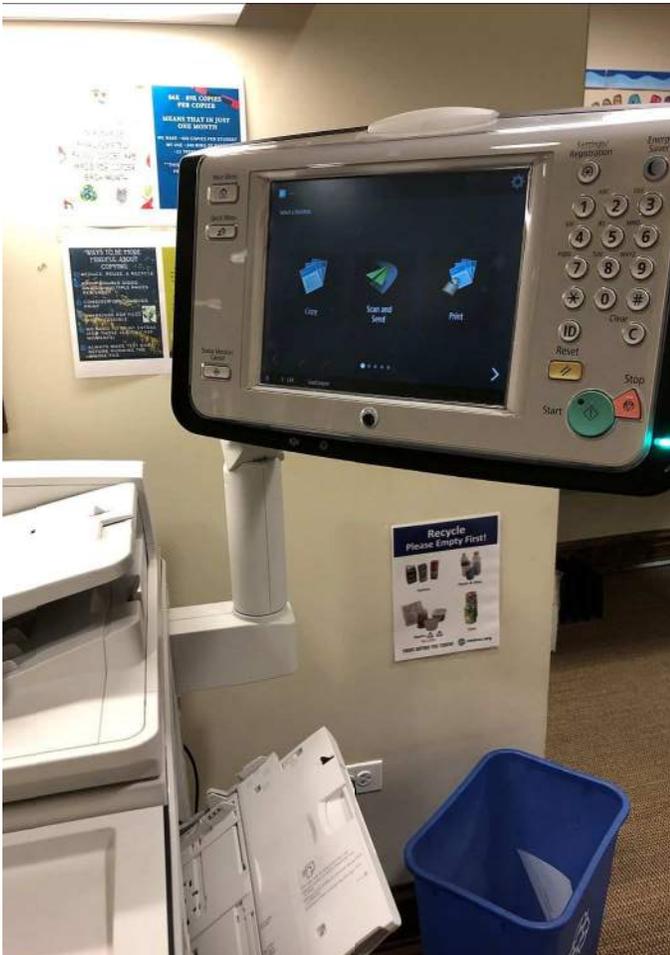




Ductless Mini Split system

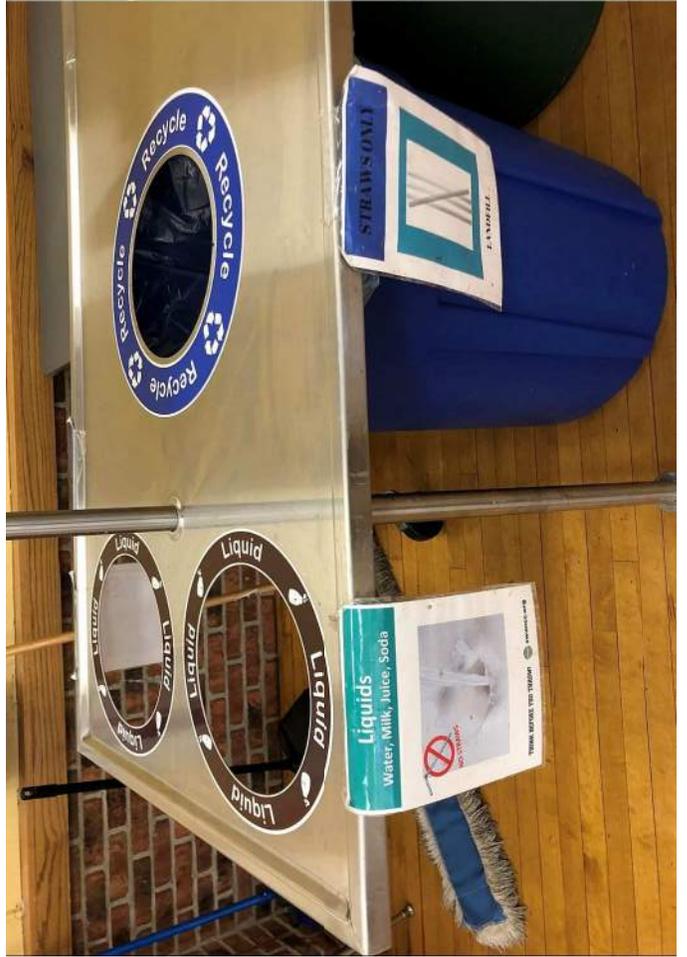


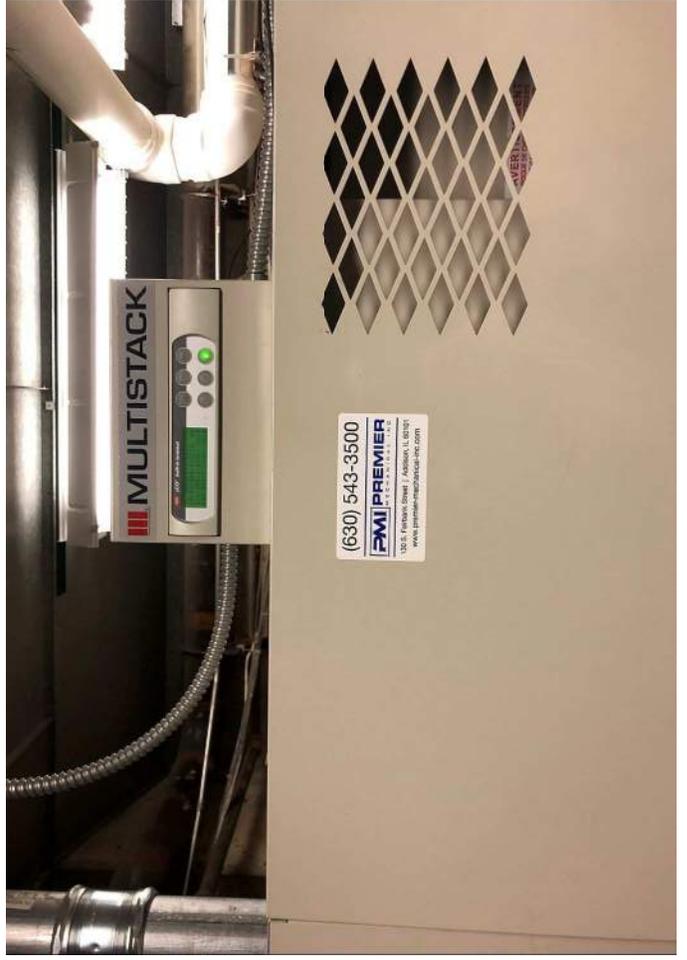


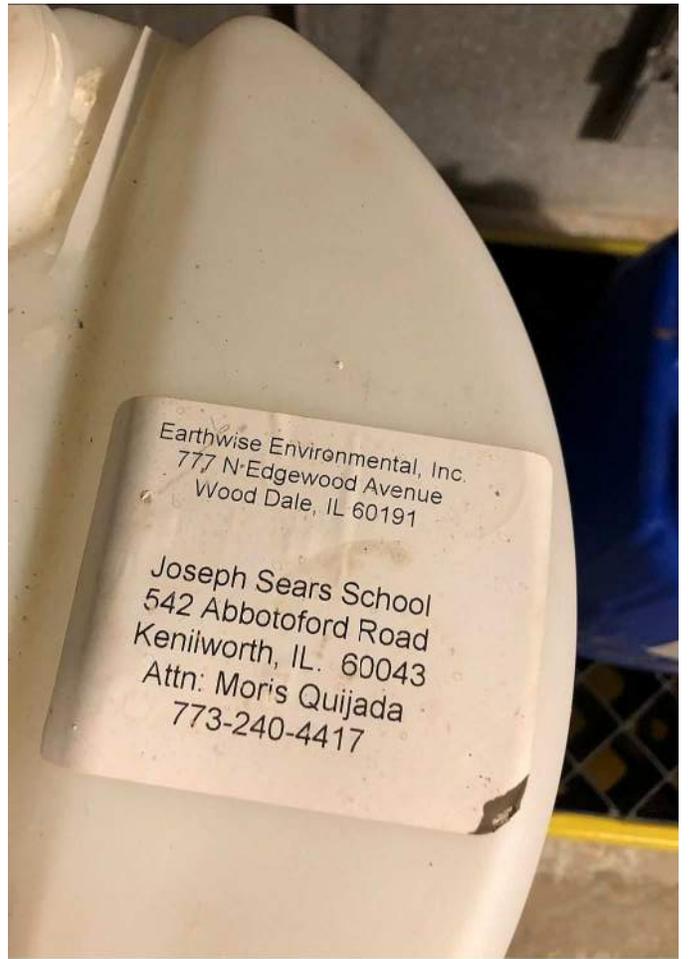














Waste Reduction



THE JOSEPH SEARS SCHOOL



According to the Environmental Protection Agency, the average American produces about 4.5 pounds of garbage each **DAY**



Which would weigh as much as . . .



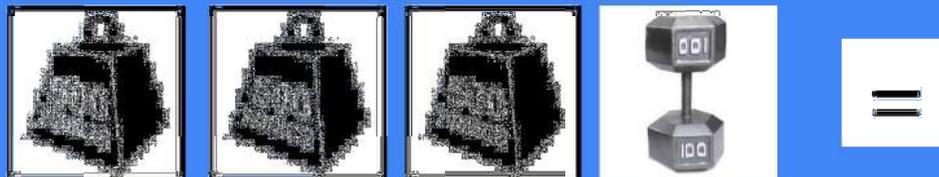
A total of 29 pounds per **WEEK**. Which would weigh as much as . . .



And 1,600 pounds in a **YEAR**



Which would weigh as much as . . .



This only takes into consideration the average household member and **does not** count industrial waste or commercial trash.

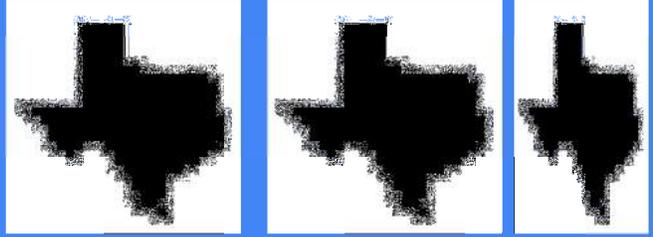


This means in one year, with 300 million people, each producing about 4-5 pounds of trash per day, the pile of **TRASH** would be 400 feet deep or as tall as a **40-story building**



And cover more than **1,000 acres of land.**

Or cover the **state of Texas** two and a half times.



Or bury more than **990,000 football fields** under **six-foot high** piles of waste.



Really? 258 Million Tons!



RECYCLING is a big part of the solution to the waste problem.

GLASS CONTAINERS:

Includes bottles and jars of all colors – no window glass, ceramic, light bulbs or drinking glasses.

METAL / ALUMINUM CONTAINERS:

Aluminum, tin, steel and bi-metal food and beverage cans only. Aluminum cans foils and trays. Aerosol cans. Please rinse.

PLASTIC CONTAINERS:

All plastic containers with *PETE (#1) and HDPE (#2), 3, 4, 5, & 7 symbols underneath.

PAPER ITEMS:

White & Colored Papers
Computer Printout Paper
Copy & Fax Paper
Envelopes with & without Windows
Magazines, newspapers, junk mail
Telephone books,
Cereal and frozen food boxes
Manila File Folders, Post-it Notes
Juice box, milk and juice cartons.
Corrugated Cardboard



Items pictured we Recycle
in our lunchrooms



RECYCLE

Empty - Clean - Loose

No Plastic Bags



- Office Paper
- Magazines
- Newspapers
- Phone Books
- Boxes – flatten first



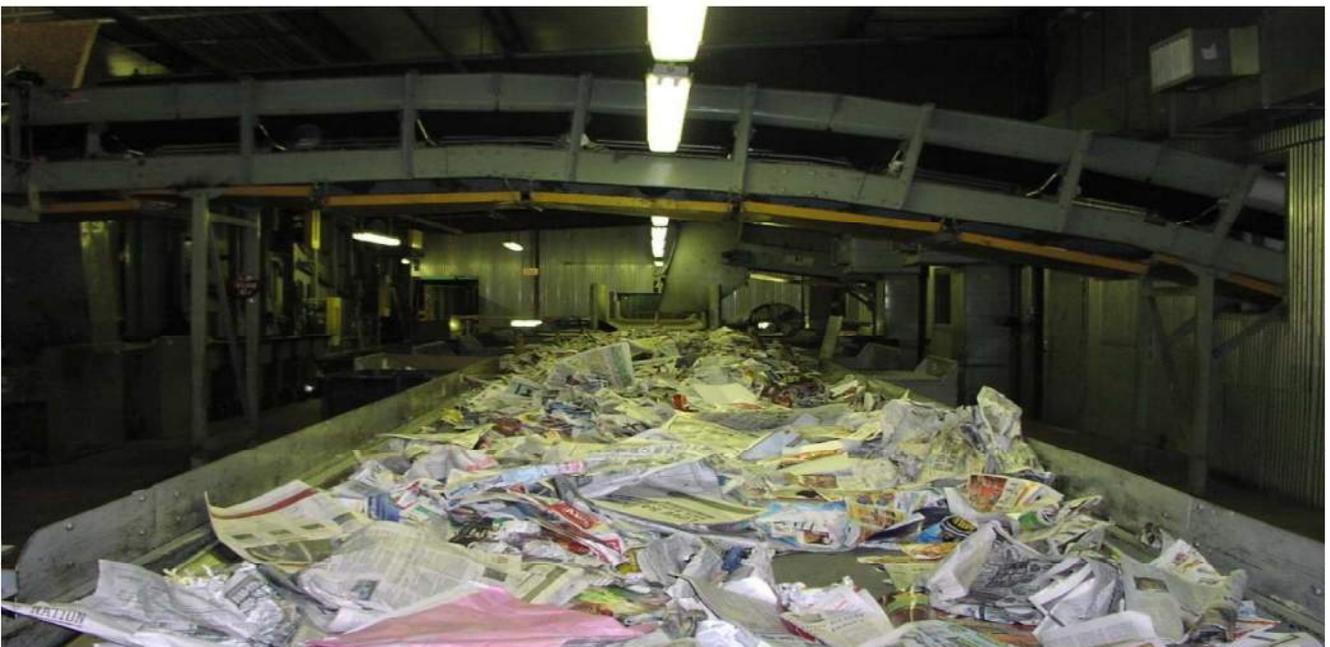
- Metal Cans
- Glass Bottles & Jars
- Cartons – no straws!
- Plastic Bottles/Containers

No #6

Recyclables Arrive at the “MRF”



Materials Are Sorted



Like Materials Are Put Together



New Products Are Made



COMPOSTING is another solution to the problem.

When food goes to the landfill, it's **similar to tying food in a plastic bag**. The nutrients in the food never return to the soil. The wasted food rots and **produces methane gas**.



VS



At Sears School we can **COMPOST**

Food waste

- All Food
- Fruits and vegetables
- Egg shells
- Cooked left-over foods
- Grains and pasta
- Breads and cereals
- Coffee grounds and filters
- Meat scraps
- Dairy (milk, yogurt, cheese, etc.)



Paper Waste

- Tea bags
- Paper towels & napkins
- Pizza boxes
- Cardboard, including waxed, boxes
- **Paper lunch sacks**
- **Paper plates**
- **Paper cups**
- Paper straw wrappers
- Compostable packaging





COMPOST



Where does Sears COMPOST go?

Compost is picked up from the containers outside our building by **Waste Management**, and brought to their composting facility in **Romeoville, IL**. There, the material is screened for residue before it is mixed in with yard waste from other villages. **Food and organic material are blended into a designed recipe to create compost.** The blended materials are put into giant wind-rows where the composting process begins.

The windrow is turned throughout the process to improve aeration, control moisture and speed up the composting process, **to be completed within 60-90 days.**



The blended materials are in giant windrows where the composting process begins.



Windrow composting is the production of compost by piling organic matter or biodegradable waste, such as animal manure and crop residues, in long rows (windrows). This method produces large volumes of compost.

FOOD RECOVERY



unopened food or drinks



Practice the 3 R's of FOOD:

- Reduce: Don't waste food - eat it & only take what you can eat.
- Reuse: Take home leftovers - eat them later.
- Recycle: Place uneaten, unopened food on our recovery table.
- **COMPOST** what's left.

Think Before You Throw!

Landfill, Compost, Recycle, Liquid



Watch to Learn more:

[Recycling Process from pick up to Processing](#)

[Recycling 101: The Do's and Don'ts](#)



[Sears School Lunchroom Waste Sorting Video](#)



COMPOSTING



Joseph Sears School

WHAT'S THE PROBLEM

When food goes to the landfill, it's **similar to tying food in a plastic bag**. The nutrients in the food never return to the soil. The wasted food rots and **produces methane gas**.

Wasted food **wastes the water, gasoline, energy, labor, pesticides, land, and fertilizers** used to make the food. **When we throw food in the trash, we're throwing away much more than food.**

If you can't **prevent, reduce or donate** wasted food, **you can compost**. By sending food scraps to a composting facility instead of to a landfill or composting at home, you're helping make healthy soil.

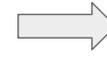


Adding compost to gardens, highway construction sites, and poor soils makes great things happen. Properly composted organics (wasted food and yard waste) improve soil health and structure, improve water retention, support more native plants, and reduce the need for fertilizers and pesticides.

WHERE DOES IT GO?



1. Each Classroom takes their compost to one of 2 floor-level compost bins. Either pour out your compost or knot your biodegradable bag and put it in the bin.
2. Compost is picked up from the containers outside our building by Waste Management composting trucks, and brought to our Composting facility in Romeoville, IL.
3. There, the material is screened for residue before it is mixed in with yard waste from other municipalities. **Food and organic material are blended into a designed recipe to create compost.** The blended materials are put into giant wind-rows where the composting process begins.



The windrow is turned throughout the process to improve aeration, control moisture and speed up the composting process, **to be completed within 60-90 days.**



The blended materials are in giant windrows* where the composting process begins.



***Windrow composting** is the production of compost by piling organic matter or biodegradable waste, such as animal manure and crop residues, in long rows (windrows). This method is suited to producing large volumes of compost. These rows are generally turned to improve porosity and oxygen content, mix in or remove moisture, and redistribute cooler and hotter portions of the pile. ([source Wikipedia](#))

THEN WHAT?



The compost product is cured in an open pile and then screened to achieve the desired product size and quality. The finished product is sold to landscapers and landscape companies for use as soil amendment. This amendment is used for landscaping, turf management, gardening, and in flower beds.



Finished product



Food waste

- All Food
- Fruits and vegetables
- Egg shells
- Cooked left-over foods
- Grains and pasta
- Breads and cereals
- Coffee grounds and filters
- Meat scraps
- Dairy (milk, yogurt, cheese, etc.)

Paper Waste

- Tea bags
- Paper towels & napkins
- Paper lunch sacks
- Pizza boxes
- **BPI Certified Compostable Only:**
- Cardboard, including waxed, boxes
- Paper bags
- Paper plates
- Paper cups
- Paper straws wrappers



COMPOST

Fruit and Vegetables



All Food



All Paper Products

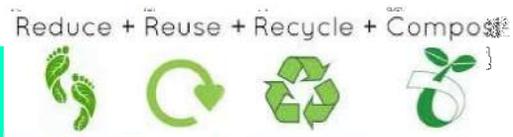


What can we compost at Sears School?

IT'S IMPORTANT AND YOU CAN MAKE A DIFFERENCE!

- **A third of all of the food** that's produced on our planet never reaches a table. It's either spoiled in transit or thrown out by consumers in wealthier countries, who typically buy too much and toss the excess. This works out to roughly **1.3 billion tons of food, worth nearly \$1 trillion at retail prices.** (epa.gov)
- Up to **30-40 percent of all food produced** in the U.S. intended for consumption is not eaten, which equates to about **20 pounds of food per person each month.** Food that gets thrown out ends up in landfills, where it gradually rots and releases methane, a strong greenhouse gas. (climatecentral.org)

Practice the 3 R's + C



- **Reduce:** Don't waste food - eat it & only take what you can eat.
- **Reuse:** Take home leftovers - eat them later.
- **Recycle:** Place uneaten, unopened food on our recovery table.
- **COMPOST** what's left.

THANKS FOR DOING YOUR PART!

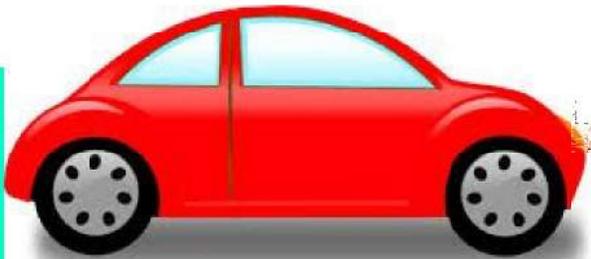


THINK
THINK BEFORE YOU THROW

How much does Sears School compost in 1 month?

1.24 tons, or 2,480 lbs.

The equivalent of a Toyota Corolla 4-door sedan with
1 adult and 3 children



Stats from Winter, 2019

WHAT ARE THE COSTS?

Joseph Sears School has 6 **compost** containers and they are picked up 2 times a week for **\$240 per month**.

Trash is picked up 5 days a week for \$700 a month.

Recycling is picked up 2 times a week for \$150.



Costs. . . benefits



Pillar 2 – Healthy Environments

Interviews and Documentation

KENILWORTH SD 38 - SUSTAINABILITY AUDIT - SCOPE OF SERVICES



Pillar 2 - Healthy Environments - Improve the health and wellness of students and staff

Stage	Section No.	Criteria Category	Ref. No.	Guidelines	Actions	Deliverable	Completed: Yes or Date	Comments
Fact Finding	1a	Indoor Air Quality	EE1.0	IAQ plan to support student health	Data Gather	Track and Compare Each Building	NO	
	1b	Indoor Air Quality	ES3; CP1-10	Green Cleaning Policy; OSHA	Data Gather;	Track and Compare Each Building	NO	Need to comply asap
	1c	Indoor Air Quality	WE6.1	Carbon Dioxide Detectors	Data Gather;	Energy Star Certification	Partial	Recommend to next step of study
	1d	Indoor Air Quality	MW1.0	Chemical management to minimize exposure	Data Gather	Track and Compare Each Building	✓	
	1e	Indoor Air Quality	EQ10.1	Occupant Surveys on Thermal Confort and Control	Staff Questionnaires	Compiled report on current status of Pillar 2	NO	Recommend to next step of study
	2a	Wellness, Fitness and Nutrition	GR	USDA Healthier US School Challenge; Farm-to-School Program; on-site food garden;	Data Gather	Track and Compare Each Building	✓	
	2b	Fitness	GR	120 minutes per week for PE; 50% PE outdoors; walk-bike policy	Data Gather	Track and Compare Each Building	✓	
	3a	Districtwide Integration	I12.1;	District Commitment to Sustainability & Mission	Review current District Mission	Compiled report on current status of Pillar 2	NO	Develop mission staement

Pillar 2 - Healthy Env FACT

4a	Maintenance	OM 7.1, OM9.1	Maintenance Plans ; Anti-idling Policy	Review current practices and Maintenance plans of district	Gap Identification; Compiled report on current status of Pillar 2	NO	
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KENILWORTH SD 38 - SUSTAINABILITY AUDIT - SCOPE OF SERVICES



Pillar 2 - Healthy Environments - Improve the health and wellness of students and staff

Stage	Section No.	Criteria Category	Ref. No.	Guidelines	Actions	Deliverable	Completed: Yes or Date	Comments
Deeper Investigation & Analysis	1f	Indoor Air Quality	EQ 1.0;	Classrom Ventilation & Control, HVAC, ASHRAE	Building Walkthrus; Indentification of System	Recommendations for Retrofits or Changes; Summary of Findings;	NO	
	1g	Indoor Air Quality	EQ5.2	Humidity and Moisture Control	Building Walkthrus; Indentification of System;	Recommendations for Retrofits or Changes; Summary of Findings;	Partial	Partial. Develop integrate approach
	1h	Indoor Air Quality	EQ7.0	Low- Emitting Materials and District Standards	Building Walkthrus; Indentification of Standards	Recommendations for Retrofits or Changes; Summary of Findings;	✓	
	2c	Wellness	EQ 1.0	Lead Free Environment	Building Walkthrus; District Staff	Recommendations for Retrofits or Changes; Summary of Findings;	NO	
	2d	Wellness - Daylight and Views	EQ 11, EQ 12.1	Window treatments, condition	Building Walkthrus; Occupant Questionaires	Recommendations for Retrofits or Changes; Executive Summary of Findings;	✓	
	2e	Acoustics	EQ 14	ANSI	Building Walkthrus; Occupant Questionaires	Recommendations for Retrofits or Changes; Summary of Findings;	Partial	Strengthen Certification
	3b	Districtwide Integration; Annual Report Card	II3.1; HJR45	5-year and 10-year Roadmap; Annual Surveys; District Mssion Statements	Staff Meetings & Evaluation	Comprehensive Summary, Budget, and Timeline for Recommendations	partial	Include Sustainablity Audit
	4b	Maintenance	OM 6.1,	Practices for inspecting and mantaining ventilation systems and all unit ventilators	District Staff	Gap Indentification; Recommendations	✓	Strengthen Best Practices



Your Contact Data:

Please provide data for your school site only:

1. Your name: Jeff Gerdin
2. Your Title and Role(s): Assistant Director of Education - lunchroom, scheduling
3. Your School Name and Address:
The Joseph Sears School
542 Abbotsford Rd, Kenilworth, IL 60043
4. Primary Contact Telephone: 847-853-3825
5. Primary Contact Email: jgerdin@kenilworth38.org
6. Website: <https://www.kenilworth38.org/>
7. Student Enrollment of School: 479 including JK



Pillar 1: Reduction in Resource Use (Energy, Water, Waste)

1. Can you demonstrate reduction in energy use over a certain period? If yes, please describe method and data from last 3 years. (i.e.: Lighting, Building automation, HVAC, CO2 controls, kitchen equipment use). Provide utility bill copies. Provide list of energy saving construction projects completed.

Over the past roughly five years we have added air conditioning units to some of the older parts of the building thus adding to utilities. We have also installed motion sensors for lighting in areas such as the office to reduce energy consumption.

We shut doors in the air conditioned building to retain cool air in the Baker Building.

2. Demonstrate a reduction in environmental impacts from your transportation fleet? (i.e.: carpooling, limiting diesel exhaust exposure, safe routes to school, anti-idling) Time period, policies in place?

Some staff use public transportation or car pool, but not as part of a policy. We staff drop off and pick up areas to minimize idle time for vehicles.

3. Do you use onsite renewable energy? i.e. X% Solar panel

Solar calculators

4. Do you purchase renewable energy through your utility? i.e. X% Wind turbine

Unsure - business office should be able to provide

5. Please describe your policies or guidelines in place related to construction and renovation projects and resource-use reduction. (i.e., recycled content, debris disposal, system selection and review, ANSI standards, LEED rating system)



Unsure - maintenance or business office

6. Describe how any school construction or renovation projects occurring in the past ten years that meet green building standards, including any certification earned. (i.e. LEED, long-range commitments)

Unsure - business office

Water Use:

7. What is your school's water use per person? (gallons/occupancy/year)

Business office/bookkeeper should have the bills. 480 students plus, say 100 staff during 10 months. Say 20 staff plus the Little Springs Park & Rec program (10 adults? 80 kids?) during the summer.

8. Can you demonstrate a reduction in your school's total water consumption from an initial baseline? (ie. you establish one from a few years prior to renovation work which then resulted in a water reduction) If yes, what projects were completed and how did you document water reduction? What was the reduction in water achieved?

We did install water bottle filling stations to reduce the amount of bottled water consumed on site in 2013 and 2014.

9. Is the school's landscaping considered water-efficient and/or regionally appropriate?

Unsure - it is consistent with the neighborhood. The outdoor classroom has a significant section devoted to native plants.

10. Describe alternate water sources used for irrigation if any:

Unsure - we may have had rain barrels that were used on a limited basis for the outdoor classroom.

11. Which does the school's drinking water come from? Municipal or a localized water source? Municipal



12. Are any portions of the school grounds are devoted to ecologically beneficial uses (i.e.: rain gardens, native plant habitat, outdoor classrooms)? if yes describe use, time of year, and approximate size and location on property.

Outdoor classroom on the west side of the school which is used for a wide variety of ecological, science, practical arts and other lessons and purposes. It is approximately 5000 square feet. It is used more in the spring and fall than in winter.

Waste Reduction:

13. What percentage of your school's total office/classroom paper content is post-consumer material, fiber from forests certified as responsibly managed, and/or chlorine-free?

We use quill.com copy paper #720222. From a brief look on-line, it does not look to have any post-consumer material.

14. List the amounts of hazardous materials used at your school, including specific products and how they are stored, measured, and disposed of properly.

Flammable liquids:

Corrosive liquids:

Toxics:

Mercury:

Chemicals for Science:

Describe purchasing, storage, and disposal policies for: Cleaning products, Hazardous waste, and Bio-hazard.

See MSDS's compiled by maintenance. Within the last several years, the science department has disposed of aged chemicals. See maintenance or science department for more details.

15. How is waste disposal and recycling tracked? Provide data, policies and quantity for last 3 years: (ie cubic yards/year, # of dumpsters. Disposal of electronic products, oil, batteries, tires, soil nutrients, lunch food waste, metals, cardboard, etc.)



We have a recycling program, but not sure how it is tracked. Ask Maintenance or Katie Nahrwold.

16. Do you operate a compost program or no-waste policy for food and landscaping waste?

We have the ability to collect materials for composting in the lunch rooms and in areas where food is typically consumed. We have had special “no-waste” lunch days throughout the year. For example, “no-waste Wednesdays”. Katie should know.

17. Any other recycling or resource-use reduction programs in school?

We have recycling stations in our lunch rooms where we separate liquids, compost, recycling and landfill waste. Students and staff are shown how to separate properly. See Katie.

18. Describe how your school is implementing Environmentally Preferable Purchasing/Green Purchasing or products and equipment for administration, instruction, and/or maintenance. (i.e. custodial paper products, HEPA vacuum cleaner, watt misers, electronic documents, appliance purchases)

Unsure - check with Chief School Business Officer

Alternative Transportation

19. What percentage of students take the following to get to/from school?

- Walk/bicycle/scooter/skateboard: **80%**
- Carpool (2+ students in the car): **20%**
- School bus: 0%
- Other public transportation: 0%

20. Describe how these percentages were collected and calculated.

The above are ballpark estimates based on my work as a monitor at the front and rear of building estimating the number of cars that can queue up and figuring one change over of the vehicles in the queue. Percentages fluctuate throughout the year depending on weather.



21. Has your school implemented any of the following? (Enter all that apply and describe details and timeframes implemented)

- a. Designated carpool parking stalls. **NO**
- b. A well-publicized no idling policy that applies to all vehicles. NO
- c. Vehicle loading/unloading areas are at least 25 feet from building intakes, doors and windows. Yes
- d. Safe Pedestrian Routes to School or Safe Routes to School. Yes
- e. Secure bicycle storage (such as bicycle lockers, racks, or rooms) is provided to encourage bicycling to school. Yes

22. Describe how your school transportation use is efficient and has reduced its environmental impact. (i.e.: walk, bike, bus, or carpool. Drop-off and pick-up Idling, routes more efficient)

Due to the close proximity of all students to the school and the presence of a tunnel to cross under Green Bay Road, we have a very high percentage of students who walk or bike to school. We also have a walk/bike to school week to draw extra attention to environmental and physical health benefits.

23. Describe any other efforts by district staff, groups, or students toward reducing environmental impact, focusing on innovative or unique practices and partnerships. (i.e.: intergovernmental agreement, committees, organizations, volunteering, advocating, Community Garden.)

We have a sustainability committee and the JSSPVA has an environmental chair. In addition, the student advisory board gets involved with environmental issues. Katie should know more about this. In the past we had a private citizen who came to school and talked about energy consumption and offered prizes for reduction of energy use based on household consumption records.

24. Does your school participate in federal, state, or utility school energy incentive or grant programs? For example Illinois Clean Energy Now, Energy Star.

Not sure



Pillar 2: Healthy Environments:

1. Can you demonstrate your playground equipment or other structures are safe from environmental contaminants? (i.e.: playground structures, woodchips, safety)

I am not sure what this question is asking. The playground structures have been installed within about the last 10 years, so they met any pertinent requirements for health and safety. The wood chips were sourced this year, and the maintenance group should have records concerning these.

2. Demonstrate your drinking water is protected from potential contaminants? Time period? If yes, how? (i.e.: cleaning, water source reporting, lead, testing)

I recall having the water tested subsequent to the Flint, MI issue. I am not sure where the results reside, but recall that the water was safe.

3. Do you have a process or policy to control moisture within your buildings and clean-up when necessary? Describe.

Not sure exactly what this means - flooding? Sewage back up? We had a flood 15 years ago that pushed back the start date for the school year.

4. Please describe Indoor Air Quality Improvement procedures practiced to support healthy indoor air. (For example: annual audits, testing lab samples, removed asbestos-containing materials, replaced carpeting, minimizing mold and dust mites, asthma, food allergens, hand wipes, HVAC equipment, fresh air intakes, filters changed, operable windows, CO2 detectors, surveying occupants for example)

I know that filters are regularly changed before the start of school, hand wipe stations are strategically located to prevent contact with food allergens, and that air testing was done approximately 8 years ago or so in the basement though not sure what was tested. Superintendent or maintenance.



5. Does your school do the following; If yes, please describe and dates implemented. If not, do your have plans to implement in the near future?
- a. Have an on-site food garden, or similar program? Yes - outdoor garden/classroom
 - b. Spend at least 120 minutes per week in PE, or give amount spent? 150 minutes per week for grades K-5, 200 minutes per week grades 6-8
 - c. Integrated health measures into school, or student assessments? I am not sure what this means. We have a health class for junior high grades. Practical arts also has a health/safety portion for the kitchen and food prep.
 - d. Conduct at least of 50% of PE classes outdoors, or give amount? The PE team uses the outdoors as much as possible dependent on the weather and the unit.
6. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices and/or partnerships. (i.e.: Board Policy on Physical education, committee to monitor the implementation, fitness classes after school, wellness screening, Field Trips, local products, fresh produce). We have a Wellness committee that provides a number of opportunities and resources for staff (e.g., yoga classes after school, etc.)
7. Does your school have a written integrated pest management plan, please describe or list sources. Not sure.
8. Which of the following indoor environmental standards are employed at your school? Indicate and describe all that apply:
- i. Acoustics (less than 45 dBA).
 - ii. Day-lighting and high-quality electrical light
 - iii. Good relative humidity control (ASHRAE 30-60%). Not sure
9. Describe actions your school takes to control moisture from leaks, condensation, and excess humidity and to promptly clean up mold or remove moldy materials when found.

Unsure

10. How has your school installed local exhaust systems for major airborne contaminant sources. (i.e. kitchen, science labs, restrooms, hallways, server rooms, home economics room, and the gymnasium.)



There is an exhaust vent for the 8th grade science lab. The shop has a vent for dust collection. The gym has newly installed air conditioners.

District Wide, General Sustainability Questions:

1. Has your school, staff, or student body received any awards or special recognition for their facilities, health, environmental literacy, or other environmental awareness? If yes, list the awards and year received:

Not sure - Superintendent

2. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects

JSSPVA Environmental committee and the Sustainability committee.

3. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to.

Unsure

4. Is there a commitment to sustainability standards as part of your district's long term facility plan?

Not sure.

5. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

Pillar 2 – Healthy Environments

Curriculum Maps

K – 8th Scope of Curriculum Activity Themes Physical Education

FITNESS COMPONENTS	GAME PLAY/SKILL THEME ACTIVITIES				TEAM BUILDING/ COOPERATIVE DEVELOPMENT
	Manipulative	Non-Locomotor	Locomotor		
<u>Aerobic Capacity</u>	<u>Throwing and Catching</u>	<u>Kicking and Punting</u>			
Pacer Fitness Test	Football	Soccer	High Ropes Course	Tumbling	Recess Expectations
Heart Rate Monitors	Handball	Football	Dance	Dance	High Ropes Course/Climbing Wall
<u>Muscular Strength, Endurance and Flexibility</u>	Basketball	<u>Striking with Implements</u>	Jumping and Landing and Balancing	Track and Field Events	Team Building Challenges
Pushup Test	Juggling	Badminton	Jump Rope	Walking	Creative Games
Sit-Up Test	Bowling	Pickleball	Track and Field Events	Speed and Agility	Create a Dance
Flexed Arm Hang Test	Tchoukball	Speedminton		Climbing Wall	Team Tumbling Routines
Sit and Reach Test	Frisbee	Table Tennis		Obstacle Course & Playground	
<u>Lifetime Fitness</u>	Softball	Floor Hockey			
Yoga	Field Events	Lacrosse			
Martial Arts - Karate	Kin-Ball	Softball			
Ballroom Dance	Kan-Jam	<u>Bouncing and Volleying</u>			
	Rugby	Basketball			
	Ultimate Frisbee	Volleyball			
	Ultimate Ball				
	Spike Ball				

Health

6th Grade	7th Grade	8th Grade
Injury Prevention	5 Components of Fitness	Disease & Disease Prevention
Concussions	Target Heart Rate	Healthy and Unhealthy Lifestyles
Sun Safety	Six Essential Nutrients	First Aid
MyPlate	Sports Nutrition	Sexually Transmitted Infections (STIs)
Food Labels	Fitness/Nutrition Log	Current Issues in Health
Self Esteem	Obesity	Eating Disorders
Stress	Healthy/Unhealthy Relationships	Signs of Suicide
Relaxation Techniques	Depression	Mental Health Awareness
Bullying	Tobacco and Marijuana	Alcohol and Substance Abuse
Introduction to Legal/Illegal Drugs		Health PSA



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ACADEMICS ▾

Physical Education



The Joseph Sears School Physical Education and Health curriculum is a skills-based fitness program that allows students to work at their own level of proficiency, while working towards mastery of skills. The Physical Education and Health department incorporates fitness on a regular basis in order to empower all students to sustain regular, lifelong physical activity as a foundation for a healthy, productive and fulfilling life.

We believe...

- That daily physical activity and health literacy are essential to the whole child.
- Each student has differing abilities and aptitudes for learning motor skills. The rate and style at which motor skills are mastered also differ among students and within each student from time to time.
- In the value of fitness practices to increase lifetime activity and reduce sedentary behaviors.
- That by integrating physical fitness into the broad range of activities that children enjoy, a bond is established between gaining and maintaining fitness and having fun while playing alone or with others.
- In the importance of demonstrating sportsmanship, teamwork and cooperation while participating in Physical Education and Health activities.

- In providing an active, caring, supportive and nonthreatening atmosphere in which every student is challenged and successful.
 - That all children can improve their health thereby enhancing their ability to learn and be successful in school.
 - That physical activity provides the opportunity for enjoyment, challenge, self-expression, and social interaction.
 - That assessment must be continuous and is a vital part of the Physical Education/Health program.
 - A variety of evaluative techniques will be used for determining individual differences and needs of students.
 - Parents and community members are vital components for the success of the program.
-

Department Resources

- [K-8 Physical Education/Health Scope and Sequence](#)

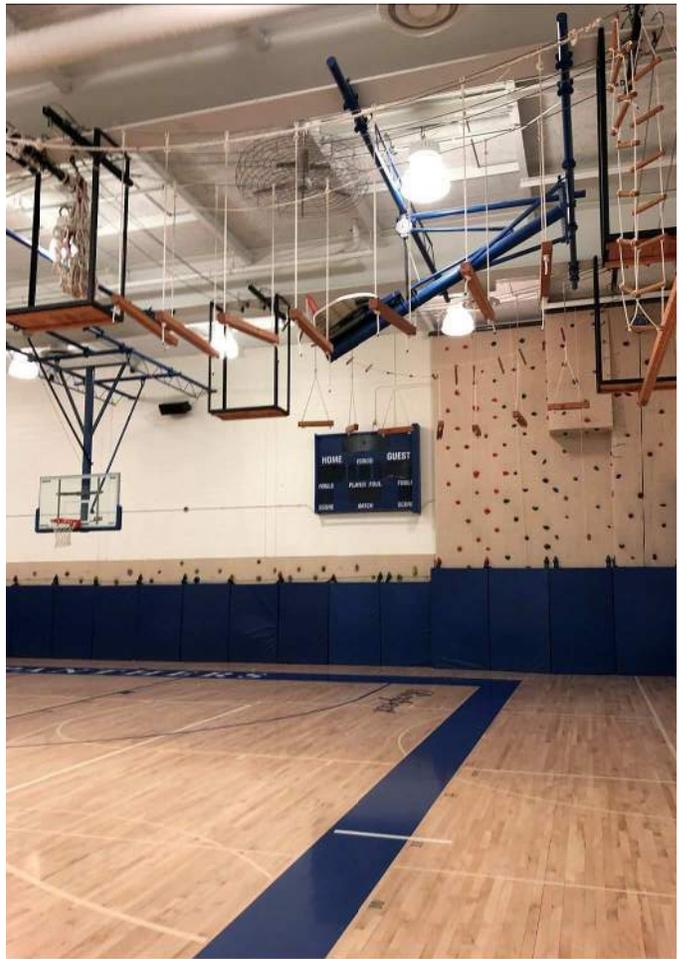
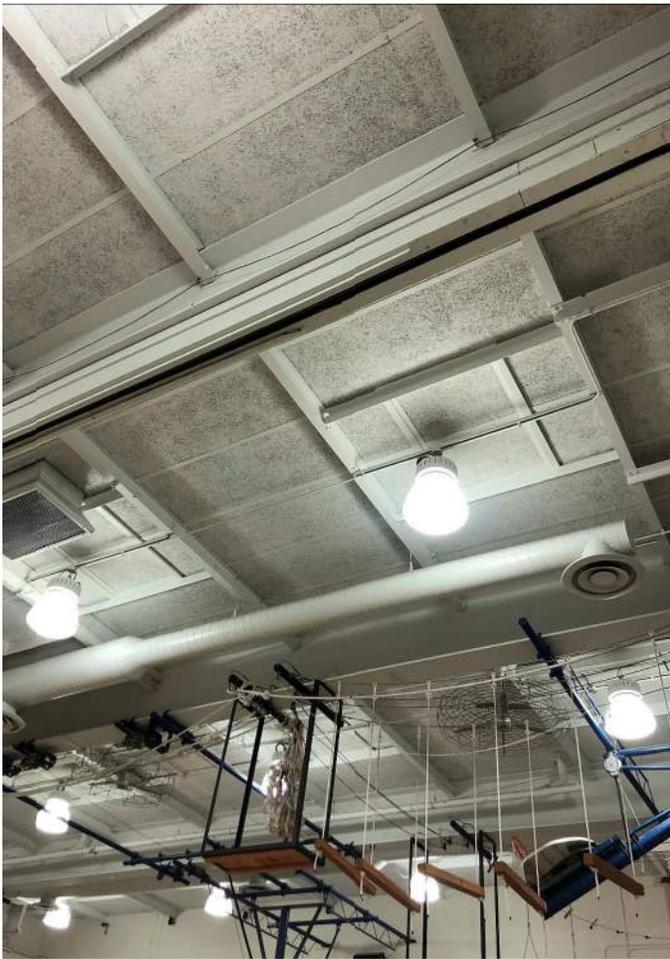
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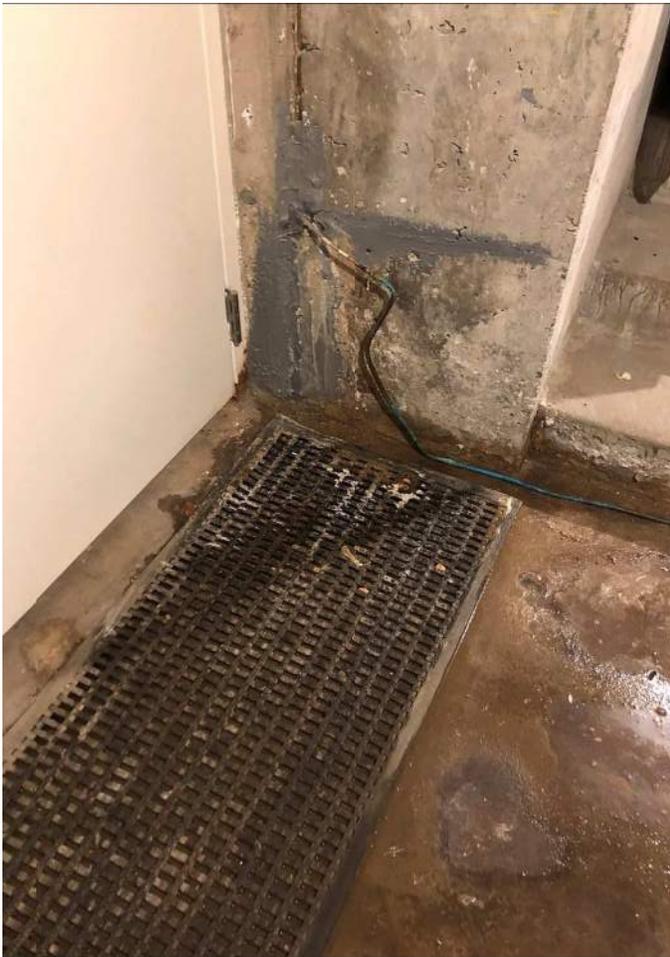
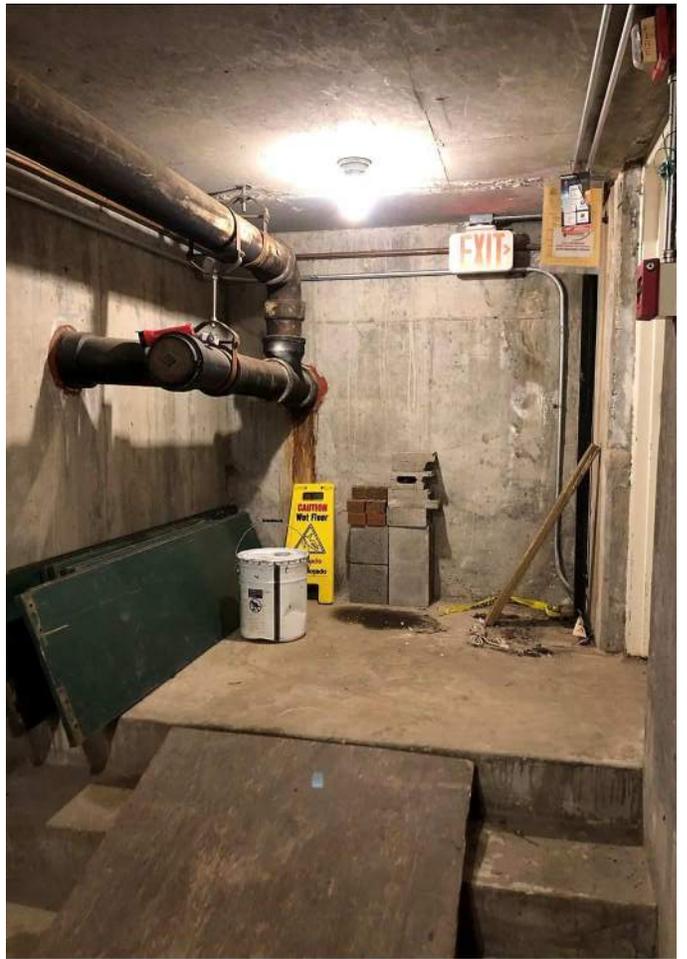
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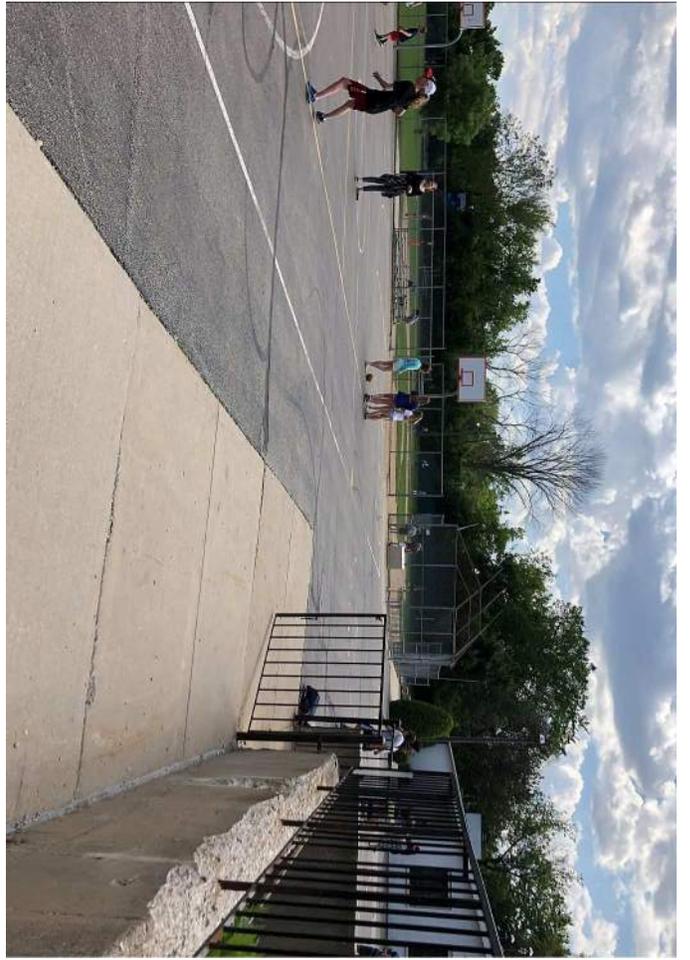
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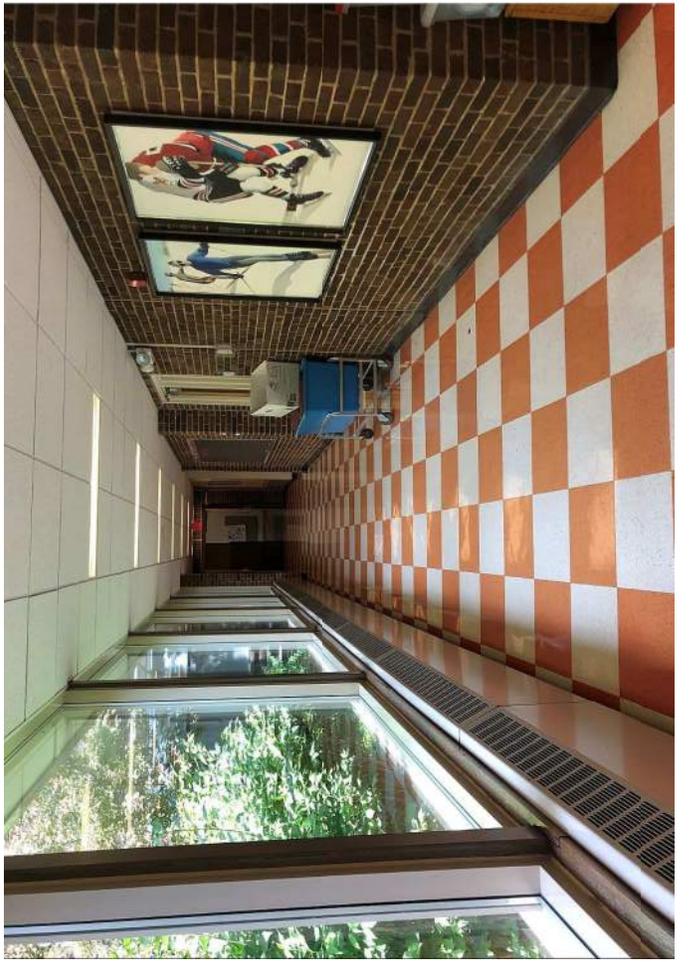
PRIVACY POLICY











Pillar 3 – Environmental Literacy:

Interview Data

Curriculum Maps



Sustainability Audit - Survey Questionnaire
Pillar 3 - Environmental Literacy

Dear Katie:

We are conducting a Sustainability Audit for Joseph Sears School. We are collecting data on the facility's energy and resource use, its indoor environment, and environmental and sustainability curriculum. Districts across Illinois and the nation are taking a comprehensive approach to greening their schools. A comprehensive approach incorporates environmental education while improving energy performance and health impact of the school facility.

The audit documents and reports on achievements, progress, and future goals in Three Pillars of Sustainability Schools:

- Pillar One: Reduce environmental impact, energy use, and water use.
- Pillar Two: Improve the indoor environment and wellness of students and staff.
- Pillar Three: Environmental Literacy - Provide effective environmental and sustainability education.

As an educator, the questions will help you demonstrate your efforts and achievements made under Pillar Three - Environmental Literacy. The questions may require you to reach out to others at your school. Multiple questionnaires have been sent out to those within your school who can contribute and have knowledge within one or more of the 3 Pillars. Please provide us with any additional photos, websites, or research you feel would help us get a better evaluation of D38's current sustainability initiatives.

Instructions: Please use this personalized Google doc file here to enter and save your final answers. We welcome web links or photos if they help demonstrate your answers.

Deadline is Wednesday, May 29, 2019 end of day.

If you have questions, please do not hesitate to contact me.

Regards,

Michael Eichhorn, AIA, LEED AP BD+C, K12 Education Planner
Wold Architects and Engineers
312-498-5056 meichhorn@woldae.com



Your Contact Data:

Please provide data for your school site only:

1. Your name: Katie Nahrwold
2. Your Title and Role(s): Sustainability Coordinator; Practical Arts Teacher (5-8); Outdoor Classroom Garden Coordinator; Wellness co-chair
3. Your School Name and Address:
The Joseph Sears School
542 Abbotsford Rd, Kenilworth, IL 60043
4. Primary Contact Telephone: 847-853-3851
5. Primary Contact Email: knahrwold@comcast.net
6. Website: <https://www.kenilworth38.org/>
7. Grade Level: teacher 5-8; coordinator JK-8/District



PILLAR 3— Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: Practical Arts (5-8); Outdoor Classroom (JK-8)
2. Subject: Practical Arts (5-8); Outdoor Classroom (JK-8)
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: Practical Arts / Outdoor Classroom
 - i. Study of local and seasonal foods; The seasons of the year offer different opportunities to grow produce in different parts of the country. Some regions can grow in the soil year round, while others need to grow indoors or in green houses or use of cold frames in colder months. Fruits and vegetables taste better when they're in season and often are more affordable.
 - ii. National Standards: CCSS.ELA: Text types and purposes; CCSS.ELA: Research to build and present knowledge. NGSS: Interdependent relationships in ecosystems.
 - iii. Compare types of plants that grow better in different seasons. Look for patterns. Which fruits and vegetables grow in winter? Spring? Summer? Fall?
 - iv. Other details or activities: Visit to the outdoor classroom garden to investigate what is growing; harvest produce to taste and cook with.
 - b. UNIT:
 - i. Study on how far food travels - farm to table. Students learn what produce grows in our area and in what season. Students learn the origin of the produce and how far it traveled to get to their plate /grocery store. Students will learn about the advantages and disadvantages of eating locally grown food.



- ii. National Standards: CCSS.ELA: Text types and purposes; CCSS.ELA: Research to build and present knowledge. NGSS: Interdependent relationships in ecosystems.
- iii. Any Cross-cutting Concepts? Student's will choose a "take action" that supports local farms, and seasonal food.
- iv. Other details or activities: Students use a recipe that uses a local, seasonal food.

Additional Units - Recycling/Composting - Where does our waste go? What is our Impact.

I teach waste reduction with Practical Arts Classes as well as by request - I taught to 8th grade World Language Classes, 5th grade, and did trainings for K-4 on our lunchroom waste sorting process.

See materials: [Compost Activity](#); [Compost Presentation](#); [Waste Reduction at Sears School](#); Lunchroom [Sorting Video](#)

This is my [Sustainability Coordinator Report from 2018-19](#)

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education? I provide support for teachers as the sustainability coordinator. I provide training for lunchroom supervisors at the start of the school year and as needed. We have not done a larger professional development but hope to before school begins at our professional development meetings in August. Mary Allen, SWANCC, has also done an audit and provided information for school.
 - b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities) I provide this in the outdoor classroom as well as teachers use the outdoor classroom on independently too. There is integration in science units - see [document](#) that was drafted and continuing to be revised. The Organic Gardener works with students with me on Wednesdays during lunch recess in the fall and throughout the summer, and



again in June for 3 day workshops, K-7. See this [document](#) in which I try to track usage and curricular connections.

- c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe: Eating in-season; tasting foods from the school garden; creating recipes with produce from garden; talking about the importance of local foods for higher nutrition content. Students also work in the garden: turning compost, using rain barrels, weeding and other work.
5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
- a. Have an environmental or sustainability literacy requirement? No
 - b. A written definition of environmental literacy? No but I did a professional development workshop on this. See [Presentation](#).
 - c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students? There is not a formal integration - just the work I do to TRY to integrate when possible and provide education on waste reduction and best practices in our district. However, in 6th grade science they did a unit on endangered species and created sea creatures from trash; 7th science does climate study - impact of climate change; other classes look at alternative energy ... again, see the documents linked above for curricular integration.
 - d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter? Mentioned above ... I am sure there are more.
 - e. An assessment of environmental and sustainability learning goals and achievement? There are no formal assessment for classes I teach except for the practical application of waste reduction practices - ability to compost and



recycle. I also do a brief assessment with 5th grade on their understanding of local and seasonal foods/eating.

- f. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction? Yes, students apply recycling, composting daily - in their classrooms and in lunchrooms. Teachers can choose to compost in their classroom and currently there are about 15 compost bins throughout the school in addition to the lunchrooms. Compost is with Waste Management (2nd year); Landfill and Recycling with Advanced Disposal.

- g. Other innovative or unique environmental practices or partnerships? Planet Panther Student "green" Club; Faculty Sustainability Committee; work with SWANCC - both for resources, grants and have received recognition for sustainable work in our school. We had a speaker for Earth Day ...

STEM Content, Knowledge and Skills

- 6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge? Not in my class but I am thinking of collaborating with the tech department on a project for next year A challenge to create something to help with an environmental issues - like plastics in oceans.

- 7. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter? We have not except the practical application of composting, using rain barrels and talking about the importance and the "why"

Civic Knowledge and Engagement:

- 8. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level. Planet Panther (5th-8th) green club had a few initiatives this year - supporting waste reduction in lunchroom, showing of Straws film, selling reusable straws with the Student Advisery Board (6-8th); working with the Village to encourage the start of a composting program; creating jewelry from recycling. There is also a student group wanting a "green" and sustainable Village House community center.



9. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc) JSSPVA (PTO) has a "green" chair and an outdoor classroom parent chair. We host an open house in the fall in the Outdoor Classroom to celebrate and enjoy the garden. We welcome garden clubs, and have hosted them ... we have hosted a Botanic Gardens tour as well as the Go Green IL Schools group a couple times. Boy Scouts and Girl Scouts have done projects in the garden - Monarch certified garden, compost bins, plant beds, planting trees, cold frames, etc. Eagle Scout Project and Bronze and Silver Girl Scout projects - as well as hosting meetings in the garden. The garden was started with parent donations. Parents and families continue to make donations and support. Families sign up to work in the garden over the summer. Parents have helped with waste sorting in the lunchrooms. Parents host Earth week activities, host Bike and Walk to school activities; and school supply donation/collection.
10. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service) Serving as the sustainability coordinator I share emails with information and resources. As the outdoor classroom coordinator, I share newsletters which you can find on my [website](#). The faculty sustainability committee also shares information with teams and via emails. As mentioned above, I did a professional development on [Environmental Literacy](#).

Additional or Innovative Integration:

11. Describe any other ways that your school integrates environmental awareness, sustainability, STEM, green technology or civic outreach into curricula. (ie.: daily culture change, connect students and community, global connection to science and natural environment, health and well-being, respect and ownership of one's environment, interdisciplinary subject areas) I think I have mentioned this ... but there is quite a bit of awareness. Not as much in STEM or green technology -though if I knew more about this I could work on it. There is outreach in daily lives/culture.



Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?
 - a. Participate in the USDA's Healthier US School Challenge or similar program?
NO
 - b. Participate in a Farm-to-School program, or similar program? YES
 - c. Have an on-site food garden, or similar program? YES
 - d. Spend at least 120 minutes per week in PE, or give amount spent? YES
 - e. Integrated health measures into school, or student assessments? Not sure but they do Health in PE
 - f. Conduct at least of 50% of PE classes outdoors? If no, give % amount - I would assume so but I will ask.
2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)

I am not sure what is in the Health curriculum in PE but I asked and will share. We do have a staff Wellness Committee that I co-chair. We offer yoga. Exercise classes, art, water days, recipes, encouraging notes and emails and we have a wellness wall with information. We have offered cooking days, music classes, a Wellness 4 week challenge, mediation and more.

District Wide, General Sustainability Questions:

2. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment;



Green Ribbon Award). If not, does your district have its own benchmarking of progress? I would like to apply for the Green Ribbon award. We shared some information about the American Heart Association move month in May.

3. Has your school, staff, or student body received any awards or special recognition for their facilities, health, environmental literacy, or other environmental awareness? If yes, list the awards and year received: We have received recognition from SWANCC for many years - they present an award for participating in waste reduction efforts. I am not sure about others. Our garden has been recognized ... but not officially.

4. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects

The Sustainability Staff Committee meets 1-2 per month; the PTO group meets as needed as well as outdoor classroom parent volunteers; Planet Panther green club meets 1-2 a month, lunchroom supervisors at start of school year and as needed; I have trained parent lunchroom volunteers in the past too.

5. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to. The strategic plan can be found [here](#). Vision Statement All students will be prepared to advance and thrive, now and into the future. Mission Statement The Joseph Sears School delivers a personalized educational experience that empowers and challenges each student to grow academically and develop personally.

6. Is there a commitment to sustainability standards as part of your district's long term facility plan? I am not sure - I would hope so.

7. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique



Kenilworth School District 38
Sustainability Audit - Joseph Sears School
May 17, 2019

practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.) Nothing outstanding except for daily awareness especially during earth month.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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7. Grade Level: [5-8](#)



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 5-8
2. Subject: Reading, Writing, Student Services
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: n/a

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education? In some respects, yes. Katie Nahrwold started the Sustainability Committee in September 2018 where teachers self-selected into a group focused on these topics. We occasionally provide information or training to teachers and staff not involved with the committee, but it is not part of a larger plan; it is ad hoc.
 - b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities) Again, Katie Nahrwold is the key person here. She manages the Outdoor Classroom. All teachers are welcome to use this space for their classes and they can do so in a variety of ways. In the junior high grades (6-8), field trips are mostly for ELA or Social Studies purposes and do not always connect with environmental education.



- c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe: [Our PE department would be better informed to answer this question. I do not think we discuss these topics outside of PE / health class.](#)

5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
 - a. Have an environmental or sustainability literacy requirement? [No](#)

 - b. A written definition of environmental literacy? [No](#)

 - c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students? [Not quite; 6th grade science focuses on sustainability, especially within the Great Lakes as part of an invasive species unit. 7th grade social studies also had a project focused on the Village House renovations and whether students would like to see green / sustainable features included.](#)

 - d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter? [See above.](#)

 - e. An assessment of environmental and sustainability learning goals and achievement? [No](#)

 - f. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction? [Occasionally; the lunchrooms have signage around the disposal area to explain how to sort their waste \(i.e., compost, recycle, landfill, recovery\).](#)

 - g. Other innovative or unique environmental practices or partnerships? [No](#)

STEM Content, Knowledge and Skills



6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge? [Aside from the 6th grade science and 7th grade Social Studies units above, I do not know.](#)
7. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter? [Not sure, but this does not sound like something we do.](#)

Civic Knowledge and Engagement:

8. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level.

[Not sure...](#)

9. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc)

[For the past two years, we have partnered with Trex to recycle plastic film. This initiative lasts from November to April and is coordinated with the JSSPVA \(i.e. the PTA\). The JSSPVA has also coordinated bike / walk to school week in past years.](#)

10. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

[Katie Nahrwold would again be the best source for answering this question. She convened the Sustainability Committee in September 2018 and we as a group are working toward educating the school about sustainability. We have had movie nights \(co-sponsored with the student environmental club, Planet Panther\) with Straws where students sold reusable metal straws. Katie also invited Sydney Bitar \(Teen Miss Great Lakes\) to speak to 3rd-8th graders about environmental literacy during a presentation in April 2019.](#)

Additional or Innovative Integration:

11. Describe any other ways that your school integrates environmental awareness, sustainability, STEM, green technology or civic outreach into curricula. (ie.: daily culture change, connect students and community, global connection to science and natural environment, health and well-being, respect and ownership of one's environment,



interdisciplinary subject areas). Not sure here either. The above answers may be more relevant.

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do your have plans to implement in the near future?
 - a. Participate in the USDA's Healthier US School Challenge or similar program? No; not sure of plans to implement.
 - b. Participate in a Farm-to-School program, or similar program? No; not sure of plans to implement.
 - c. Have an on-site food garden, or similar program? Yes, the Outdoor Classroom includes student-grown food as well as native plants.
 - d. Spend at least 120 minutes per week in PE, or give amount spent? Yes, 150 minutes per week K-8.
 - e. Integrated health measures into school, or student assessments? Maybe in health class...
 - f. Conduct at least of 50% of PE classes outdoors? If no, give % amount. Not sure, but they are outside as much as weather permits.

2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety). Each year there is a Wellness Challenge in March where faculty and staff earn points by completing tasks such as getting 7 hours of sleep per night, getting 10,000 steps per day, eating 3-5 servings of vegetables, taking a meditation break, talking with a co-worker about a topic other than work, getting 30 minutes of exercise, etc. The prizes are health related (e.g., one-month gym membership, gift certificate to a floating session, etc.). There is a semimonthly staff yoga class. Surplus food from the Outdoor Classroom is available during certain seasons.

District Wide, General Sustainability Questions:



1. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment; Green Ribbon Award). If not, does your district have its own benchmarking of progress?
[We are in the process of renovating the Village House and are trying to get a Green Ribbon Award for it.](#)
2. Has your school, staff, or student body received any awards or special recognition for their facilities, health, environmental literacy, or other environmental awareness? If yes, list the awards and year received: [No](#)
3. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects [Yes, faculty have the Sustainability Committee, students have Planet Panther club \(and Student Advisory Board\), and parents have an environmental subcommittee in the JSSPVA.](#)
4. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to. [There is not a sustainability component to the Strategic Plan.](#)
5. Is there a commitment to sustainability standards as part of your district's long term facility plan? [As stated before, the Village House renovation has been conceived in light of sustainability standards \(i.e., Green Ribbon certifications\). There has also been talk of renovating the Baker Building \(concrete and glass structure that houses the junior high classrooms\) and making it similarly sustainable.](#)
6. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.) [There are refillable water bottle stations throughout the building. Lunchrooms and some classrooms have compost bins for food waste.](#)



Kenilworth School District 38
Sustainability Audit - Joseph Sears School
May 17, 2019

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 8th
2. Subject: Science
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: Flow of Matter and Energy in Living Systems
 - i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

Food webs/chains, 10% Rule, Laws of Thermodynamics, Metabolism, Photosynthesis, Cellular Respiration, Nutrient Cycles, Global Warming
 - ii. Related State, National Standards or Core standards

[MS-LS1-6 From Molecules to Organisms: Structures and Processes](#)

[MS-LS2-3 Ecosystems: Interactions, Energy, and Dynamics](#)
 - iii. Any Cross-cutting Concepts?

Energy and Matter;
 - iv. Other details or activities:

Read articles about climate change/carbon capture technologies, energy-efficient agriculture,
 - b. UNIT: DNA/Biotechnology



- i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

DNA, Gene Editing/Engineering,
 - ii. Related State, National Standards or Core standards
 - iii. Any Cross-cutting Concepts?
 - iv. Other details or activities:

Genetic Engineering Articles, Genetic Engineering Research/Project where environmental impacts are explored
- c. UNIT: Plate Tectonics
- i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

Plate Tectonics, Earthquakes, Volcanoes, Mantle Convection, Sea Floor Spreading, Rock Cycle, Human Impact (Fracking, Mining, etc)
 - ii. Related State, National Standards or Core standards

[MS-ESS2-1 Earth's Systems](#)

[MS-ESS3](#)
 - iii. Any Cross-cutting Concepts? Stability and Change
 - iv. Other details or activities:

Sometimes a human impact project- how alterations of Earth's landscape affects the biosphere

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.



4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.

a. Have professional development and support for teachers to conduct environmental and sustainability education?

Yes- Katie Nahrwold reaches out to Sears teachers and holds occasional meetings to spark collaboration on initiatives/lessons that explore environmental and sustainability education.

b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities)

Sears has a an outdoor garden that uses student volunteers to maintain. Katie Nahrwold coordinates with teachers to hold classes in the garden.

c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe:

The school holds a Walk/Bike to School week every year, where homerooms track the % of students who walk/bike.

5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)

a. Have an environmental or sustainability literacy requirement?

Not to my knowledge.

b. A written definition of environmental literacy? Not to my knowledge.

c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students?

Not to my knowledge.



- d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter?

Not to my knowledge.

- e. An assessment of environmental and sustainability learning goals and achievement?

Not to my knowledge.

- f. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction?

In the lunchrooms, we have different receptacles for waste, recycling, and compost. Students are taught how to use the receptacles and waste reduction is reinforced every day.

STEM Content, Knowledge and Skills

6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge?

I don't know how we do.

7. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter?

I don't know how we do.

Civic Knowledge and Engagement:

8. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level.

I think students in Scouts sometimes work on Eagle Scout projects that focus on sustainability measures



9. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc)

Boy Scouts (see above), park district, JSSPVA, school gardens -- don't know details

10. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

Katie Nahrwold is the Sears expert on sustainability. She shares knowledge with staff, students, and community through presentations.

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?

- a. Have an on-site food garden, or similar program?

Yes- we have an outdoor garden which serves as a teaching tool and provides Organic produce for students/community.

- b. Spend at least 120 minutes per week in PE, or give amount spent?

Our students have 200 minutes of PE a week.

- c. Integrated health measures into school, or student assessments?

Yes- our school has yearly vision/hearing tests for students.

- d. Conduct at least of 50% of PE classes outdoors? If no, give % amount

Yes- I don't have exact percentages.

2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices,



policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)

Students have health classes through PE. 6th grade students visit the Robert Crown Health Center every year. The school offers a variety of sports-related extracurricular activities. The staff Wellness Committee provides experiences for teachers after school that involve yoga, cooking, and art (among other things).

District Wide, General Sustainability Questions:

2. Has your school, staff, or student body received any awards or special recognition for their facilities, health, environmental literacy, or other environmental awareness? If yes, list the awards and year received:

We received some recognition, but I can't tell you what it was. I think it was related to our waste reduction efforts during lunch. Katie Nahrwold would know.

3. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects

I know stakeholders do meet, but I don't know the organizational structure or future initiatives. KN would know.

4. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the



community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to.

I believe there is vision for reducing waste in the building as an example to the community. I don't know if it's in the strategic plan.

5. Is there a commitment to sustainability standards as part of your district's long term facility plan?

Yes- more compostable materials (cups, plates, utensils) are being used.

6. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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7. Grade Level: 6



PILLAR 3— Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 6
2. Subject: Science and Social Studies
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.

a. UNIT: Earth Science

- i. The use of Earth's materials, water cycle, rock cycle...

Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

- ii. Related State, National Standards or Core standards
- iii. Any Cross-cutting Concepts?
- iv. Other details or activities:

b. UNIT: Life Science

- i. The use of plastics and how they impact our environment (specifically our oceans). How animals are becoming endangered as a result of human activity. This delves into how long it takes for plastics to break down and what alternative we can use that would be better for us and the environment.



SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.

a. Have professional development and support for teachers to conduct environmental and sustainability education?

No, there has been no professional development. The supports are from the sustainability committee and little else. The committee would like to inform the school, however it is up to administration if education were to take place.

b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities)

We have the outdoor classroom (on-site), which I use in science a few times a year. We take a field trip to the Shedd Aquarium each year that teaches the students about the Great Lakes and the many aquatic creatures, but we do not have one that is just outdoors.

c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe:

In social studies, we discuss health concerns, such as vaping. In science, we briefly mention what provides energy and building materials for the body. In physical education, the students are required to take health and learn about eating right, fitness, and harmful substances.

5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)

a. Have an environmental or sustainability literacy requirement?

We do not have an environment or sustainability requirement. However, I find that many teachers are finding ways to include it in their curriculum. Such as, world language having a unit, learning about energy (solar, wind, fossil fuels...) in 7th grade, and etc.



b. A written definition of environmental literacy?

No, we do not have a definition.

- c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students?

Not officially. As I previously mentioned, I have combined science with art to talk about sustainability and plastics. This is something we have not included in our daily activities or consistently.

- d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter?

In social studies, we combined the language arts, current events, and science. We had students look out how fracking impacts an environment and how chinese philosophies would handle the practice.

- e. An assessment of environmental and sustainability learning goals and achievement?

My assessment was their end project (plastic sea creatures) and socratic seminar discussing the issue of plastics. I did not have a test on it.

- f. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction?

We have not used the building as a teaching tool for energy or waste reduction, I do not cover that material so I am unsure what others do. I have used the various rooms to teach about humidity and relative humidity throughout the building.

STEM Content, Knowledge and Skills

6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge?



Again, it all depends on the teacher.

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?

a. Participate in the USDA's Healthier US School Challenge or similar program?

I believe PE does.

b. Participate in a Farm-to-School program, or similar program?

Not sure.

c. Have an on-site food garden, or similar program?

Yes, we have an outdoor classroom with a food garden.

d. Spend at least 120 minutes per week in PE, or give amount spent?

Yes, they spend 200 minutes per week.

e. Integrated health measures into school, or student assessments?

Yes, through PE.

f. Conduct at least of 50% of PE classes outdoors? If no, give % amount

If the weather is nice, PE is outside most of the time.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!





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7. Grade Level:7



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 7
2. Subject: Social Studies
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: Pre-Columbian Native Americans
 - i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:
 1. Innovation to improve resources: students read from non-fiction texts about how early Native American societies crossbred different types of crops to create a heartier, more durable maize crop. They used milpa agriculture to farm several different crops in the same field. This benefits the sustainability of the soil and nutrition of the people.
 2. Assessment/application: students design and create a public health style poster advocating for American farmers using this more sustainable form of agriculture.
 - ii. Related State, National Standards or Core standards
 - iii. Any Cross-cutting Concepts?
 1. In the outdoor classroom, gardeners have planted several of the crops most common in a milpa farm
 - iv. Other details or activities:



- b. UNIT: The Columbian Exchange
 - i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:
 - 1. Non-fiction reading and research on the environmental impact of the Columbian Exchange- the massive exchange of ideas, people, plants, animals, etc following the colonization of the New World. Students read about how the introduction of potatoes and corn to China, i.e., help feed the population at first but eventually led to overuse of the soil, which is no longer arable. They also read about how dependence on one crop, nutritionally or economically, leaves communities vulnerable to environmental catastrophe (i.e. potatoes in Ireland, currently rubber in SE Asia)
 - ii. Related State, National Standards or Core standards
 - iii. Any Cross-cutting Concepts? Cross-curricular research project with ELA- research paper and digital book creator on impact of the Columbian Exchange- includes environmental and cultural impacts of potato, rubber, sugar, etc.
 - iv. Other details or activities:

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

- 4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education? No
 - b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities) Yes- many programs in the



Outdoor Classroom. In the past we visited community gardens in Chicago on a 7th grade field trip but haven't done so in a while.

- c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe: cutting edge PE curriculum- climbing wall, whole child health etc.
5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
- a. Have an environmental or sustainability literacy requirement? No
 - b. A written definition of environmental literacy? No
 - c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students? Not daily, but yes overall
 - d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter? Not sure
 - e. An assessment of environmental and sustainability learning goals and achievement? Not sure
 - f. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction? Yes- drinking fountains, compost bins, recycling stations and more make it clear to our students how we can reduce waste and conserve resources.



- g. Other innovative or unique environmental practices or partnerships?

STEM Content, Knowledge and Skills

6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge? unsure
7. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter? unsure

Civic Knowledge and Engagement:

8. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level.
-Not sure on the grade level- students work in the outdoor classroom and garden.
Also, students earn volunteer "service points"- one way to earn them is by helping with the recycling stations in the lunchroom

9. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc)

unsure

10. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

Katie Nahrwold has shared her expertise in presentations and personal communications



Additional or Innovative Integration:

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?
 - a. Participate in the USDA's Healthier US School Challenge or similar program?
NO
 - b. Participate in a Farm-to-School program, or similar program? No
 - c. Have an on-site food garden, or similar program? Yes
 - d. Spend at least 120 minutes per week in PE, or give amount spent? 100 minutes per week
 - e. Integrated health measures into school, or student assessments? Health class
 - f. Conduct at least of 50% of PE classes outdoors? If no, give % amount
2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)
We have a great wellness challenge, staff yoga

District Wide, General Sustainability Questions:



2. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment; Green Ribbon Award). If not, does your district have its own benchmarking of progress?

No

3. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)

More use of recycling stations in common areas and classrooms, less use of plastic water bottles- I have seen way more reusable water bottles over the last couple of years.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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7. Grade Level: [6th](#)



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 6th
2. Subject: Math
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: There are no specific math units or standards where we address sustainability. I do have two to three activities where we look at the composition of earth materials and another activity where students take a look at data related to temperatures. Those activities are very small and do not cover as much as I could include.
 - i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education?

Mrs. Nahrwold is available if we want to use the outdoor classroom and want to activities in our curriculum. I find that it is underutilized.



- b. Use outdoor learning strategies to further engage in environmental education?
(ie: outdoor field trips, on-site outdoor activities)

The outdoor classroom is available, but there seems to be a lack of classrooms using it. Many elementary classes do get lessons on composting and gardening from Mrs. N

5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)

- a. Have an environmental or sustainability literacy requirement?

There is a component in the science curriculum where there is an environmental focus.

- b. A written definition of environmental literacy?

Not sure

- c. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter?

From my understanding, there is not much environmental or sustainability content coursework in other subjects besides science.

- d. An assessment of environmental and sustainability learning goals and achievement?

Not that I am aware of.

- e. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction?

Not that I am aware of.

- f. Other innovative or unique environmental practices or partnerships?

Besides composting and straws initiative, there is not something that I am well aware of. We did try to recycle and reuse some of the school supplies at the end of the year so they do not end up in landfills. There are some classes that do engage students in certain earth-friendly activities around earth day.

Moreover, a couple of students surveyed other students on questions related to our environment for their statistics project.



STEM Content, Knowledge and Skills

6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge?

There is a lot of room for growth in this area.

7. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter?

There is a lot of room for growth in this area.

Civic Knowledge and Engagement:

8. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level.

- Many students help clean up our outdoor classroom and help take care of the garden as well as multiple times a year. Students also help with composting and watering the plants.
- There was a student who helped make covers for their scout's project.
- We had straws movie presentation where metal straws were literally sold out. Two groups of students (Planet Panter & Student Advisory Board) made it possible

9. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc)

Scouts, There is a group that helps maintain the garden (Mrs. N knows best!)

10. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

Mrs. Nahrwold is a strong advocate for positive change and she is a great advocate in our school community as well.



Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?
 - a. Participate in the USDA's Healthier US School Challenge or similar program?
Not sure
 - b. Participate in a Farm-to-School program, or similar program?
Not sure
 - c. Have an on-site food garden, or similar program?
There is an outdoor garden in our school
 - d. Spend at least 120 minutes per week in PE, or give amount spent?
Yes. There is 40 minutes of PE everyday.
 - e. Integrated health measures into school, or student assessments?
It is integrated into our health unit and overall PE program. I am not completely sure about assessments.
 - f. Conduct at least of 50% of PE classes outdoors? If no, give % amount
Depending on the weather, I believe a lot of the PE classes are outside.
2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)
There is a walk/bike to school week every year. There is also a conscious effort to educate teachers about the number of copies we made.

District Wide, General Sustainability Questions:

2. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment; Green Ribbon Award). If not, does your district have its own benchmarking of progress?

Not sure



3. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects

We have a sustainability committee and a student group (Planet Panther).

4. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to.

There is some component of student well-being in our strategic plan.

5. Is there a commitment to sustainability standards as part of your district's long term facility plan?

The goal is to make sustainable choices for the long term when it comes to facilities.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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7. Grade Level: ALL



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: NA
2. Subject: NA
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: NA

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education?
 - i. I don't know what has been done prior to this school year. I know that Mrs. Nahrwold has made herself available for supporting teachers and students in this area.
 - b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities)
 - i. The outdoor classroom is used for this. Outdoor education opportunities are planned for 6th grade next year. Some field trips incorporate outdoor learning from what I can remember about this year.



- c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe:
 - d. I believe our PE and health department has been working on implementing different ways to support students in this area. Next year, movement minutes and SEL improvements should support these goals, as well. **Currently, Second Step serves as our main emotional wellness support.**
5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
- a. Have an environmental or sustainability literacy requirement?
 - i. I wouldn't say we have a requirement, however, our **practices in the lunchroom and the education in the practical arts classroom certainly supports literacy in this area.**
 - b. A written definition of environmental literacy?
 - i. I don't believe so.
 - c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students?
 - i. **Yes, there is integration. I am not sure about formal documentation of it. Daily activities and habits as referenced above are present.**
 - d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter?
 - i. I am not aware about anything else.
 - e. An assessment of environmental and sustainability learning goals and achievement?
 - i. **I believe assessment in this area would occur in the practical arts program.**
 - f. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction?



- i. I don't believe this is present yet.
- g. Other innovative or unique environmental practices or partnerships?
Not that I know of or can remember at this time.

STEM Content, Knowledge and Skills

- 6. How does your school use sustainability and the environment as a context for learning STEM thinking skills and content knowledge?
 - a. Interdisciplinary approaches have been utilized for this type of instruction, however, I am not aware of formal documentation.
- 7. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter?
 - a. This would occur during the practical arts and science classrooms at the junior high level, I believe.

Civic Knowledge and Engagement:

- 8. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level.
 - a. This would be best described by teachers based on my limited experience with projects or field experiences here.
- 9. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc)
 - a. I would not be able to identify many partnerships at this point. I believe that our community is very supportive of sustainability and we do receive support for our outdoor learning experiences from the JSSPVA.



10. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

- a. Mrs. Nahrwold shares her expertise in many ways in the school. Professional development sessions, planning sessions and communicating strategies and goals electronically are ways that she shares her knowledge.

Additional or Innovative Integration:

11. Describe any other ways that your school integrates environmental awareness, sustainability, STEM, green technology or civic outreach into curricula. (ie.: daily culture change, connect students and community, global connection to science and natural environment, health and well-being, respect and ownership of one's environment, interdisciplinary subject areas)

- a. I believe we can do better in this area in the future. I cannot think of other ways at this time.

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?

- a. Participate in the USDA's Healthier US School Challenge or similar program?
 - i. I don't believe so.
- b. Participate in a Farm-to-School program, or similar program?
 - i. I don't believe so.
- c. Have an on-site food garden, or similar program?
 - i. Yes. This has been in place for years.
- d. Spend at least 120 minutes per week in PE, or give amount spent?
 - i. Students have 150 minutes of PE/health per week in K-5 and 200 minutes of PE/health per week in Junior High.



- e. Integrated health measures into school, or student assessments?
 - f. Yes, in health classes.
 - g. Conduct at least of 50% of PE classes outdoors? If no, give % amount
 - i. I am not aware of the percentage, but I do know that outdoor PE occurs throughout the school year.
2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)
- a. Faculty wellness has been a priority in the building - physical and emotional health have been supported by the wellness committee.
 - b. Student wellness has been addressed through Second Step and social work support. We will be expanding our SEL support in the coming years.

District Wide, General Sustainability Questions:

- 2. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment; Green Ribbon Award). If not, does your district have its own benchmarking of progress?
 - a. I don't believe so.
- 3. Has your school, staff, or student body received any awards or special recognition for their facilities, health, environmental literacy, or other environmental awareness? If yes, list the awards and year received:
 - a. I don't believe so.



4. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects
 - a. I believe the wellness committee addresses some of this. I also believe there is a green team for students.

5. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to.
 - a. I don't believe so.

6. Is there a commitment to sustainability standards as part of your district's long term facility plan?
 - a. I am not aware of a documented commitment to this. I hope there is.

7. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)
 - a. Other than the garden and Mrs. Nahrwold's efforts to reduce our footprint (xeroxing less, etc.) I am not aware of other initiatives.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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7. Grade Level: District Tech Specialist



PILLAR 3— Environmental and Sustainability Education

YOUR CURRICULUM: - IT Department

1. Grade Level: N/A

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

2. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education? **Yes we have a sustainability committee to bring in and implement green initiatives.**
 - b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities) **Yes we have 2 outdoor learning spaces and the teachers will do field trips to farmers and other outdoor locations.**
 - c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe: **yes PE Department SEL committee, WEllness committee, Practical arts curriculum, Outdoor classroom curriculum.**
3. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
 - a. Have an environmental or sustainability literacy requirement? **Not sure**



- b. A written definition of environmental literacy? [Not sure](#)
- c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students? [Not sure](#)
- d. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter? [Not sure](#)

Civic Knowledge and Engagement:

- 4. Describe students' civic and community engagement projects integrating environment and sustainability concepts. Specify grade level implemented. Describe students' out-of-classroom learning experiences and which grade level.
- 5. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc) [Community garden, Boy Scouts, Student involvement with what gets planted in garden.](#)
- 6. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service) [We have composting bins in classrooms and lunch rooms with 3 container setups to properly sort trash before it hits the landfill.](#)

Additional or Innovative Integration:

- 7. Describe any other ways that your school integrates environmental awareness, sustainability, STEM, green technology or civic outreach into curricula. (i.e.: daily culture change, connect students and community, global connection to science and natural environment, health and well-being, respect and ownership of one's environment, interdisciplinary subject areas) [Science classes use the outdoor classroom for](#)



curriculum enhancement and hands on learning, Students are encouraged to properly sort their lunch waste.

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do your have plans to implement in the near future?
 - a. Participate in the USDA's Healthier US School Challenge or similar program?
 - b. Participate in a Farm-to-School program, or similar program?
 - c. Have an on-site food garden, or similar program? **Yes outdoor classroom**
 - d. Spend at least 120 minutes per week in PE, or give amount spent? **Yes but I am not sure it is somewhere between 60-120**

District Wide, General Sustainability Questions:

2. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment; Green Ribbon Award). If not, does your district have its own benchmarking of progress? **Not sure**
3. Has your school, staff, or student body received any awards or special recognition for their facilities, health, environmental literacy, or other environmental awareness? If yes, list the awards and year received: **Not sure**
4. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please



describe their activities, future initiatives and recent accomplishments, awards or projects [Sustainability committee](#)

5. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to. [Not sure](#)

6. Is there a commitment to sustainability standards as part of your district's long term facility plan? [I think so](#)

7. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)

[We have reduced our number of printers in the building and only give access to printers near the users to try and stop them from printing multiple copies to multiple prints when 1 doesn't work. We recycle Pens/Markers/Ink cartridges. We try to get the most out of our technology, Laptops spend 4 years as teacher machines then 4-5 years as student devices doubling normal tech refresh cycles. We collect all old technology and recycle it in the proper location so it doesn't go into landfills. The community takes charge of our outdoor classroom over the summer. A few years ago we stopped printing paper copies of board packages and went to digital.](#)

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



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7. Grade Level: JK-8



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: JK-8
2. Subject: Library and Library Tech
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: I am the coach of our Student Advisory Board - they spearhead service projects that often focus on the environment (H2O for Life, Ryan's Wells, WWF - Sea Turtles, Going Straw Free)
 - i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

4. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education? Through our Sustainability Committee there are a number of PD opportunities.



- b.
5. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
- a. Have an environmental or sustainability literacy requirement? We do have standards based science. Several programs in the school promote stewardship such as the Practical Arts, Planet Panther Club and Student Advisory Board
 - b. A written definition of environmental literacy? Not that I am aware of
 - c. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students?
Ones I know and am involved with: recycling, composting and end of year supply recycling

STEM Content, Knowledge and Skills

6. How does your school use sustainability and the environment as a context for learning green technologies, green careers, or encourage curiosity with subject matter? The LTC houses a lot of material both in print and digitally on these topics. We need more sustained and targeted use of these materials embedded in the curriculum

Civic Knowledge and Engagement:

7. Describe partnerships (community, corporate, private) that your school engages in to help school achieve the components in the '3 Pillars' of a Green School. Include examples of the impact of these partnerships. (i.e.: PTA/PTO, community school gardens, local university, boy scouts, park district, fund-raising, etc)



Planet Panther Club, Student Advisory Board, Girl and Boy Scout troops often have goals around these pillars.

8. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

Same as above but also the Practical Arts dept. Is a school leader in this.

Additional or Innovative Integration:

9. Describe any other ways that your school integrates environmental awareness, sustainability, STEM, green technology or civic outreach into curricula. (ie.: daily culture change, connect students and community, global connection to science and natural environment, health and well-being, respect and ownership of one's environment, interdisciplinary subject areas)

The most recent example would be the involvement of staff and students with the building of the new Village House (community center). Sustainability and all its components are now better understood. This will carry over into any rehabs or changes to actual school house.

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?
 - a. Have an on-site food garden, or similar program? Yes - see above
 - b. Spend at least 120 minutes per week in PE, or give amount spent? Students have PE everyday at Sears.
 - c. Integrated health measures into school, or student assessments? Some through the school nurse, Health curriculum (PE component) and Practical Arts



- d. Conduct at least of 50% of PE classes outdoors? If no, give % amount This is very weather dependent. Anytime it can be outside it is.
2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)

We have an outstanding Wellness Committee. They have brought many wonderful things to the school for staff (yoga, meditation, recipes, contests, hydration station and more)

District Wide, General Sustainability Questions:

2. Is there a forum where stakeholders involved in the daily operation of your school (students, faculty, maintenance, and cafeteria staff) can meet to discuss and implement green efforts at your school? (For example: Green Schools Community Committee, Environmental Literacy Subject Area Team, PTA/PTO, Student groups) If yes, please describe their activities, future initiatives and recent accomplishments, awards or projects

Both our staff Sustainability Committee and our parent group JSSPVA work towards green goals. For example, composting containers at all events; compostable materials in the lunchroom; reusable lunch supply sales; reusable straw sales; bike/walk to school week; recycle of school supplies at the end of the year; Bernie's Book Drives in conjunction with the Book Fairs; month long Earth Day events; speakers/authors with a sustainability/stewardship message.

3. Is there a sustainability goal, vision or guiding principle developed into District 38's strategic plan? Has there been a commitment for district to be an example to the community on how to be energy efficient, reduce waste and be a global citizen? Please describe is yes or have plans to. Not sure if it is explicitly stated in the strategic plan but just in the last two years a marked increase in awareness and understanding of how



important this all is for our kids and ourselves. The school does set an example of late for many of these goals.

4. Is there a commitment to sustainability standards as part of your district's long term facility plan? Now there is!

5. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)

I may not be aware of all the efforts but as stated earlier here are some I do know about:

Water bottle refill stations instead of regular fountains, stop using bottled water, sale of reusable straws by the SAB and Planet Panther Clubs in conjunction with showing the movie "Straws"; JSSPVA liaison with the Sustainability Committee and both student clubs; composting program; outdoor classroom/garden curriculum with the Organic Gardener; composting materials in the lunchroom; recycle of school supplies at the end of the year; bike/walk to school week; Earth Day month of activities reflected in science, library, art, PE and other dept, ink cartridge recycling, tech recycling (do every year), reduction of printing, recycling blue bins that take paper, plastic and cans, special marker recycle program, twice yearly TREX drop off bins.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



Wold Architects and Engineers
312-498-5056 meichhorn@woldae.com

Your Contact Data:

Please provide data for your school site only:

1. Your name: Kim Goff
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7. Grade Level: 5



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 5
2. Subject: General Education

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do you have plans to implement in the near future?
 - a. Participate in a Farm-to-School program, or similar program?
Students learn about the 'farm-to-table' concept during their practical arts class in grades 5-8.
 - b. Have an on-site food garden, or similar program?
Yes - we have an outdoor garden that our Practical arts teacher runs. There are several summer events that the community is invited to be a part of. During the school year, we are invited to use the space as we please. There is a sign-up sheet for courtesy.
 - c. Spend at least 120 minutes per week in PE, or give amount spent?
Yes - 150 min. per week (30 min/day, 5x week)
 - d. Conduct at least of 50% of PE classes outdoors? If no, give % amount
No - 15-20%



2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety)
 - Wellness committee
 - Bike safety

District Wide, General Sustainability Questions:

2. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)
 - Sustainability committee
 - Wellness committee
 - Community Garden - volunteering opportunities
 - TRES recycling program
 - Composting system
 - Water fountains have purifying water systems to save the use of plastic water bottles

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



Michael Eichhorn, AIA, LEED AP BD+C, K12 Education Planner
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Your Contact Data:

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7. Grade Level: 7



PILLAR 3— Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: 7
2. Subject: Special Education (I work on IEP goals of students within the curriculum established by grade level teachers so this section does not apply to me specifically)

SCHOOL WIDE QUESTIONS BELOW: You may combine answers with others in your team or grade level.

3. Does your school have the practices below? If yes, please describe in detail and approximate date implemented. If not, do you have near term plans to implement.
 - a. Have professional development and support for teachers to conduct environmental and sustainability education? Yes, somewhat. The Sustainability Committee tries to promote education in these areas through email about “fun facts” and implementing recycling and composting at lunch time and bigger events.
 - b. Use outdoor learning strategies to further engage in environmental education? (ie: outdoor field trips, on-site outdoor activities) I know this occurs within our practical arts curriculum and primary/elementary grades will often sign up for lesson in the outdoor garden space.
 - c. Encourage innovative ways to improve the health, fitness, and wellness of students. Please describe: Not sure.



4. Does your school employ adopted practices to help ensure effective environmental and sustainability education? Provide details and examples (i.e.: standards-based science curriculum, stewardship towards the environment, sustainability electives, outside collaborations, research, hands-on learning experiences)
 - a. Integration of environmental and sustainability concepts across the curriculum in multiple disciplines, daily activities and habits of students? [Not sure.](#)
 - b. An environmental or sustainability content Unit in coursework other than listed in question 3 above? For example, in another subject matter? [NA](#)
 - c. Students using the school building itself as a 'teaching tool' to learn about energy systems or waste reduction? [The school has installed water bottle refill stations at some of our water fountains and there was some education around that](#)

Civic Knowledge and Engagement:

5. Describe any sustainability expertise in your school. Who, what and where have they shared their knowledge? (i.e.: at presentations, publications, websites, public service)

[Katie Nahrwold, Practical Arts Teacher](#)

[Andrea Urqhardt, 6th grade Science/Social Studies Teacher](#)

Health and Wellness (Pillar 2 related):



1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do your have plans to implement in the near future?
 - a. Participate in the USDA's Healthier US School Challenge or similar program?
Not sure
 - b. Participate in a Farm-to-School program, or similar program? No
 - c. Have an on-site food garden, or similar program? Yes, we have a food garden
 - d. Spend at least 120 minutes per week in PE, or give amount spent? Yes
 - e. Integrated health measures into school, or student assessments? Yes
 - f. Conduct at least of 50% of PE classes outdoors? If no, give % amount.
Depends on weather and time of year

District Wide, General Sustainability Questions:

2. Is your school participating in a local, state or national school program which asks you to benchmark or encourage progress in sustainability education? If yes, what program and levels were achieved? (i.e.: Fuel Up to Play; Presidential Fitness Assessment; Green Ribbon Award). If not, does your district have its own benchmarking of progress?
We would like to move in the direction of being a Green Ribbon School and have started talking about ways to make this occur.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!



Wold Architects and Engineers
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Your Contact Data:

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7. Grade Level: Second



PILLAR 3—Environmental and Sustainability Education

YOUR CURRICULUM:

1. Grade Level: Second
2. Subject: Science
3. Identify the Unit(s) in which sustainability is addressed (i.e. earth materials, energy transfer, water study, etc) Multiple Units can be listed here as needed.
 - a. UNIT: Foss: Pebbles, Sand and Silt
 - i. Within the Unit, describe some sustainable Core Ideas, Scientific Practices, Guiding Questions, Big Ideas of Science, Skills and Knowledge, Conceptual Lense, or Assessments of Knowledge and Skills:

Unit Essential Questions: 1.How are various materials on Earth similar and different? 2. How do the properties of various materials on Earth affect the way we can use them? 3. How does soil differ from different places? 4. Where do the Earth’s natural materials come from?

Health and Wellness (Pillar 2 related):

1. Does your school do the following; If yes, please describe detail and dates implemented. If not, do your have plans to implement in the near future?
 - a. Have an on-site food garden, or similar program? We have an outdoor garden



2. Describe your school's efforts to improve the health and wellness of students and staff through nutrition and fitness programs. Emphasize unique or innovative policies, practices, policies, or partnerships. (i.e.: physical education, fitness clubs, field trips, local products, fresh produce, nutrition and food serving, regular outdoor activity, bike riding and safety) Second grade works with the Kenilworth Police Department to educate our students about bike safety and encourage them to ride their bikes to school.

2. Describe any other efforts by district staff or students toward reducing resource use (water, waste, energy), carbon footprint, and environmental impact. Any unique practices and partnerships. (i.e. intergovernmental agreement, committees, organizations, volunteering, advocating, community garden.)

Katie Nahrwald continuously works to educate students and staff about reducing waste and recycling. She has set up a recycling center in the lunchroom and trained students where to put each part of their lunch-compost, recycling or landfill.

THANK YOU for your participation and sharing your knowledge as we complete our sustainability 'snap-shot' of Joseph Sears School!

Kindergarten

The Kindergarten units include studies on living things, observing weather and different materials and how they move in different ways. Throughout the year, students use models, experiments, observations, and explanations to develop answers to the following essential questions:
 -What do living things need to survive?
 -How do you observe weather?
 -How do things move?

Unit Name and Essential Question (s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
<p>Life Science: Animals Two by Two</p> <p>What do living things need to survive?</p>	<p><u>K-LS1-1</u></p>	<p>Use observations to describe patterns of what plants and animals (including humans) need to survive.</p>	<p>I can use observations to describe what plants and animals need to survive.</p> <p>I can ask questions, make observations, and gather information to solve a problem.</p>	<p>water light food survive habitat air space needs living non-living</p>
<p>Earth Science: Trees and Weather</p> <p>How do you observe weather?</p> <p>How do living things respond and use their environment?</p> <p>What happens to water in sunshine and shade?</p> <p>How can we design a structure to keep water cool in sunshine?</p>	<p><u>K-ESS2-1</u></p> <p><u>K-ESS2-2</u></p> <p><u>K-ESS3-1</u></p> <p><u>K-ESS3-2</u></p> <p><u>K-ESS3-3</u></p>	<p>Use and share observations of local weather conditions to describe patterns over time.</p> <p>Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.</p> <p>Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.</p> <p>Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.</p> <p>Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment</p>	<p>I can share observations of weather and notice weather patterns.</p> <p>I can show the needs of different plants and animals and the places they live.</p> <p>I can discuss how plants and animals change their environment to meet their needs.</p> <p>I can ask questions to understand how weather forecasting helps me prepare for severe weather.</p> <p>I can talk about how humans can take better care of the earth.</p> <p>I can make observations to determine the effect of sunlight on the Earth's surface.</p> <p>I can build a structure that will change the warming effect of sunlight on the Earth's surface.</p>	<p>weather observe compare similar predict pattern forecast environment habitat natural resources calendar fall winter spring summer season roots bud blossom flower recycle reduce reuse</p>

	<u>K-PS3-1</u>	Observe cups of water in the sunlight.		conserve energy adaptation
	<u>K-PS3-2</u>	Design and build a structure that will keep water cool in the sunshine.		
Physical Science: Materials and Motion How do things move?	<u>K-PS2-1</u>	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object	I can compare how pushes and pulls affect an object. I can determine if a push or pull changed the speed of an object. I can compare the strengths and weaknesses of objects.	Force push pull motion collide direction speed temperature hot cold materials sunlight structure surface
	<u>K-PS2-2</u>	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull	I can show how the shape of an object helps to solve a problem.	

First Grade

The first grade units include studies on plants and animals, sound and light, and the patterns in the sun, moon, stars, and day and night. Throughout the year, students conduct experiments and gather data to explain the following essential questions:

- How do organisms grow and develop?
- How do structures of organisms help them survive?
- How does matter change the way light travels?
- What is sound and how does it move?
- How can we observe, record, and predict the movement of the Sun, Moon, and stars?

Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
Life Science: Plants and Animals How do organisms grow and develop? How do structures of organisms help them survive?	1-LS1-1	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	I can identify plants and animals have external parts to survive. I can identify that plants and animals exhibit behaviors for survival, such as finding food, protection, and reproduction.	structures parent offspring habitat survive system behavior shelter observe nutrient function compare different alike reproduce
	1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	I can identify plants and animals have different habitats to help them survive. I can observe how parents raise and protect offspring.	
	1-LS1-3	Make observations to construct an evidence-based account that young plants and animals are alike, but not exactly like, their parents.	I can identify that offspring are similar to their parents, but not identical.	
Physical Science: Sound and Light How does matter change the way light travels? What is sound and how does it move?	1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate	I can make sound from vibrations. I can explain how to communicate sound from a distance.	movement vibration sound communicate design matter illuminate transparent translucent opaque reflective shadow
	1-PS4-4	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance	I can understand that you need light to see matter. I can understand that light travels in a straight line.	
	1-PS4-2	Make observations to construct an evidence-based account that objects can be seen only when illuminated	I can explain how light changes when interacting with matter.	
	1-PS4-3	Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light		

Earth Science: Air and Weather How can we observe, record, and predict the movement of the sun, moon, and stars?	<u>1-ESS1-1</u>	Use observations of the sun, moon and stars to describe patterns that can be predicted.	I can observe the motion of the sun, moon, and stars.	patterns observing predicting
	<u>1-ESS1-2</u>	Make observations at different times of year to relate the amount of daylight to the time of year.	I can observe, describe, and predict the patterns of sunrise and sunset.	data sunrise sunset sun moon stars

Second Grade

In second grade, students deepen their understanding in the following areas: a life science unit focusing on how insects and plants grow and interact with their environment, a physical science unit investigating the characteristics of solids and liquids, and an earth science unit on landforms and water causing the Earth to change over time. Throughout the year, students keep detailed scientific journals of experiments, write explanations, and begin to orally explain the following essential questions:
 -How do organisms live, grow, respond to their environment, and reproduce?
 -What makes things different?
 -How and why is the Earth constantly changing?

Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
<p>Life Science: Insects and Plants</p> <p>How do organisms live, grow, respond to their environment, and reproduce?</p> <p>How and why do organisms interact with their environment and what are the effects of those interactions?</p>	<p><u>2-LS2-1</u></p>	<p>Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p>	<p>I can explain what insects need to survive and compare the different ways that insects meet these needs.</p>	<p>insect plant air food water shelter growth survival reproduction life cycle pollinate seed dispersal</p>
	<p><u>2-LS2-2</u></p>	<p>Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p>	<p>I can describe the structures that plants and insects use for growth, survival, and reproduction.</p> <p>I can prove that reproduction is essential to the continued existence, and use models to show that organisms have predictable characteristics of development and life cycles.</p>	
	<p><u>2-LS4-1</u></p>	<p>Make observations of plants and animals to compare the diversity of life in different habitats.</p>	<p>I can explain how plants and animals work together to produce offspring by using seed dispersal and pollination.</p>	
<p>Physical Science: Solids and Liquids</p> <p>What makes things different?</p>	<p><u>2-PS1-1</u></p>	<p>Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties</p>	<p>I can classify matter as solids or liquids by their observable properties.</p>	<p>observable property texture hardness flexibility reversible irreversible solid liquid temperature matter</p>
	<p><u>2-PS1-2</u></p>	<p>Analyze data obtained from testing different materials to determine what materials have the properties that are best suited for an intended purpose (assessment)</p>	<p>I can explain how heating and cooling matter causes observable changes.</p> <p>I can compare reversible and irreversible changes in matter by heating and cooling.</p>	
	<p><u>2-PS1-3</u></p>	<p>Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object</p>		
	<p><u>2-PS1-4</u></p>	<p>Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot</p>		

<p>Earth Science: Pebbles, Sand, and Silt</p> <p>How and why is Earth constantly changing?</p>	<p><u>2-ESS1-1</u></p>	<p>Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</p>	<p>I can explain what rocks are made of and use scientific vocabulary to compare the size of different rocks on Earth.</p>	<p>rock mineral property clay silt sand gravel pebbles cobbles boulders natural resources stream river pond lake marsh ocean salt water fresh water map weathering soil</p>
	<p><u>2-ESS2-1</u></p>	<p>Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.</p>	<p>I can identify the different ways that water and rocks interact and move on earth that causes changes to rocks, landforms, and bodies of water.</p> <p>I can describe how different earth materials are best suited for specific use, like buildings and streets.</p>	
	<p><u>2-ESS2-2</u></p>	<p>Develop a model to represent the shapes and kinds of land and bodies of water in an area.</p>	<p>I can list and label natural sources of water on Earth, and the states of matter that water can exist in on Earth.</p>	
	<p><u>2-ESS2-3</u></p>	<p>Obtain information to identify where water is found on Earth and that it can be solid or liquid.</p>	<p>I can use models and maps to label landforms and bodies of water on Earth.</p>	

Third Grade

In third grade, students develop scientific thinking in the areas of life structure, forces and interactions, and Earth's systems. Throughout the year, students gather evidence and draw conclusions about the following essential questions
 -How do parts of a system work together?
 -How do organisms grow and develop?
 -How do structures help organisms live?
 -Why do things move?
 -How can we observe, measure, and record changes in the Earth's weather and climate?

Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
<p>Life Science: Structures of Life</p> <p>How do organisms grow and develop?</p> <p>How do the structures of organisms help them to live?</p>	<p><u>3-LS1-1</u></p>	<p>Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p>	<p>I can identify how seeds alike and different.</p> <p>I can identify what structures a seedling has and how they help it grow and survive.</p>	<p>organisms function seed coat observe structure germination growth life cycle nutrient characteristic muscle joint territory adaptation food chain environment population</p>
	<p><u>3-LS2-1</u></p>	<p>Construct an argument that some animals form groups that help members survive.</p>	<p>I can identify the structures of crayfish.</p> <p>I can identify the functions of the skeletal system.</p>	
	<p><u>3-LS3-1</u></p>	<p>Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.</p>		
	<p><u>3-LS3-2</u></p>	<p>Use evidence to support the explanation that traits can be influenced by the environment.</p>		
<p>Physical Science: Motion and Matter</p> <p>Why do things move?</p>	<p><u>3-PS2-1</u></p>	<p>Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object</p>	<p>I can explain that objects need forces to move.</p> <p>I can explain that objects in contact exert forces on each other.</p>	<p>force motion strength direction interaction magnet attract repel</p>
	<p><u>3-PS2-3</u></p>	<p>Ask questions to determine cause and effect relationships of electric and magnetic interactions between two objects not in contact with each other</p>	<p>I can explain that some forces, like the magnetic force, don't need objects to be in contact in order to act.</p>	
	<p><u>3-PS2-4</u></p>	<p>Define a simple design problem that can be solved by applying scientific ideas about magnets</p>		

Earth Science: Water and Climate How can you observe, measure and record the differences in the Earth's weather and climate?	<u>3-ESS2-1</u>	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	I can understand that water is found almost everywhere on displays different characteristics when frozen and melted. I can explain that scientists, measure, and record patterns of weather to make predictions.	observe measure record prediction climate weather frozen melt rock temperature evaporation
	<u>3-ESS2-2</u>	Obtain and combine information to describe climates in different regions of the world	I can explain that a variety of natural hazards result from weather related phenomena. I can explain that climate is the range of an area's typical weather.	
	<u>3-ESS3-1</u>	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	I can explain that temperatures increase rate of evaporation.	

Fourth Grade

In fourth grade, students investigate the following topics: environments, energy, and soil, rocks, and landforms. Throughout each unit, students develop models, work on written and oral explanations, and gather data to address the following essential questions:
 -How do living things survive based on their structures and the way they interact with their environment?
 -How does energy make things happen?
 -How and why has the Earth changed over time?

Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
<p>Environments Unit</p> <p>How do structures and behaviors help animals stay alive?</p> <p>How do living things adapt and take advantage of factors in their environment?</p>	<p><u>4-LS1-1</u></p>	<p>Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction</p>	<p>I can explain the internal and external structures and functions of plants and animals.</p> <p>I can explain how animals sense and react to their environments through their senses.</p>	<p>structure behavior matter organism function sensory receptors life cycle</p>
<p><u>4-LS1-2</u></p>	<p><u>4-LS1-2</u></p>	<p>Use a model to describe that animals receive different types of information through their senses, process the information in their brains, and respond to the information in different ways.</p>		
<p>Energy Unit</p> <p>What is energy?</p> <p>How does energy make things happen?</p>	<p><u>4-PS3-1</u></p>	<p>Use evidence to construct an explanation relating the speed of an object to the energy of that object</p>	<p>I can explain how a moving object has energy and the faster an object moves, the more energy it contains.</p>	<p>energy movement transfer sound light heat electricity amplitude compression cycle frequency peak trough wave wavelength</p>
	<p><u>4-PS3-2</u></p>	<p>Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents</p>	<p>I can show how energy moves from one thing to another in the form of sound, light, heat, or electric currents.</p> <p>I can analyze the change in energy when objects collide.</p>	
	<p><u>4-PS3-3</u></p>	<p>Ask questions and predict outcomes about the changes in energy that occur when objects collide</p>	<p>I can create a model to show how waves have patterns of motion that moves energy from place to place.</p>	
	<p><u>4-PS4-1</u></p>	<p>Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.</p>	<p>I can describe how light travels in straight lines and can bounce off or be reflected by objects</p>	
	<p><u>4-PS4-2</u></p>	<p>Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.</p>		
	<p><u>4-PS4-3</u></p>	<p>Generate and compare multiple solutions that use patterns to transfer information.</p>		

Rocks, Soil, and Landforms Unit How and why has the earth been shaped and changed over time?	<u>4-ESS1-1</u>	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.	I can explain how the different rock layers and their fossils show how environments change over time. I can describe how physical and chemical weathering change the earth.	forces time landscape water patterns renewable resource non-renewable resource fossil
	<u>4-ESS2-1</u>	Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	I can identify how rate and volume of erosion can directly relate to the energy of moving water or wind.	rock erosion vegetation map
	<u>4-ESS2-2</u>	Analyze and interpret data from maps to describe patterns of Earth's features.	I can create a topographic map to show shape and elevation of land. I can identify both renewable and non-renewable natural resources and how they are used by humans, and how scientists and engineers work together to improve natural resource use.	
	<u>4-ESS3-1</u>	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.		
	<u>4-ESS3-2</u>	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.		

Fifth Grade

In fifth grade, students gain a deeper understanding of themes surrounding the earth and sun, living systems, and mixtures and solutions. Students develop and execute experiments and explain results that help answer the following essential questions:
 -How does matter change without losing its essence or identity?
 -How can different matter be identified by properties?
 -How does Earth's movement in space determine the day and night cycle, seasonal changes, and the appearance of star constellations during the night?
 -How does matter move through living things in the environment?

Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
Physical Science: Mixtures and Solutions How does matter change without losing its essence or identity? How can different matter be identified by properties?	<u>5-PS1-1</u>	Develop a model to describe that matter is made of particles too small to be seen	I can construct particle models of matter and use them to explain the behavior of physical matter. I can observe that an aqueous solution is a mixture in which a substance disappears in water to make a clear liquid.	evaporation dissolve mixture solute solution solvent dilute
	<u>5-PS1-2</u>	Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved	I can explain that matter is always conserved and can support my explanation with evidence that the weight of substances does not change when heated, cooled, or mixed.	soluble insoluble property condensation freezing melting siphon
	<u>5-PS1-3</u>	Make observations and measurements to identify materials based on their properties	I can compare different materials by carefully observing and recording their properties with regard to color, solubility, magnetism, and relative density.	phase change consensus model
	<u>5-PS1-4</u>	Conduct an investigation to determine whether the mixing of two or more substances results in new substances	I can identify what a mixture is and prove that mixtures can be separated into their individual parts.	concentration density
Earth Science: Earth and Sun How does Earth's movement in space determine the day/night cycle, seasonal changes, and the appearance of star constellations during the night?	<u>5-ESS1-1</u>	Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.	I can explain why Earth's sun is brighter than any other star. I can collect and graph data about how the phases of moon change over time	axis day night orbit revolution rotation
	<u>5-ESS1-2</u>	Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	I can explain how the phases of the moon, hours of daylight, and visible star constellations vary based on the Earth's planetary motion.	asteroid comet constellation crescent moon dwarf planet lunar cycle
	<u>5-PS2-1</u>	Support an argument that the gravitational force exerted by Earth on objects is directed down.		force gravity
Life Science: Living Systems How does matter move through living things in	<u>5-LS2-1</u>	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	I can generate a model of a food chain and identify the direction of energy movement I can use information from several food chains to build a food web that incorporates plants, animals,	System Biosphere Food chain Producers Decomposers

Sixth Grade				
In sixth grade, students advance in their scientific inquiry with a specialized science teacher. Throughout the year, they gain understandings in the fields of chemistry, earth science, and				
NGSS Scientific Practices			NGSS Cross-Cutting Concepts	
1. Asking questions and defining problems			1. Patterns	
2. Developing and using models			2. Cause and effect	
3. Planning and carrying out investigations			3. Scale, proportion, and quantity	
4. Analyzing and interpreting data			4. Systems and system models	
5. Using mathematical and computational thinking			5. Energy and matter	
6. Constructing explanations and designing solutions			6. Structure and function	
7. Engaging in argument from evidence			7. Stability and Change	
8. Obtaining, evaluating, and communicating information			8. Interdependence of science, engineering, and technology	
			9. Influence of engineering, technology, and science on society and the natural	
Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
Scientific Process Introduction How do scientists answer questions about the world?	All 8 Scientific Practices	Asking questions and defining problems Developing and using models Planning and carrying out investigations Analyzing and interpreting data Using mathematical and computational thinking Constructing explanations and designing solutions Engaging in argument from evidence Obtaining, evaluating, and communicating information	I can use scientific tools including a scale, graduated cylinder, beaker, test tube, thermometer, and a microscope I can define an independent and dependent variable I can develop a valid conclusion based on data I've collected or been given	Scale graduated cylinder beaker test tube thermometer microscope variable independent variable dependent variable conclusion Qualitative data Quantitative data
Physical Science: Particle nature of matter How can we smell things from a distance? How does an odor get from a source to our nose? What makes one odor different from another? How can a material change so you can smell it?	<u>MS-PS1-1</u> <u>MS-PS1-2</u> <u>MS-PS1-3</u> <u>MS-PS1-4</u>	Develop models to describe the atomic composition of simple molecules and extended structures Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. Gather and make sense of information to describe that synthetic materials from from natural resources and impact society Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed	I can make and use a model to explain that substances are made of different types of atoms that combine in different ways I can define a property and use properties to tell substances apart I can use models to describe the difference between a solid, liquid, and gas I can make and use a model to explain what happens to the atoms in matter when it changes state I can explain that when matter changes state, thermal energy is added or removed	Atom Substance Model Molecule Compound Mixture Property Solid Liquid Gas State change vibration thermal energy Odor Hardness Malleability

	<u>MS-LS1-8</u>	Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage of memories	I can explain that many substances used by society are made from natural sources I can describe how we smell things through our nose and the air	
Earth Science: Rock and water cycles, geologic processes How do the water cycle and rock cycle shape the Earth's surface? How does slow-moving rock shape Earth's surface? How do fast-acting events shape Earth's surface?	<u>MS-ESS2-1</u>	Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.	I can explain the formation of sedimentary, igneous, and metamorphic rock using the processes of melting, crystallization, weathering, and sedimentation, and create a diagram to show the rock cycle for each type of rock	Rock cycle Sedimentary rock Igneous rock Metamorphic rock
	<u>MS-ESS2-2</u>	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.	I can explain with evidence how weathering, erosion, and deposition shape earth's surface	Melting Crystallization Weathering Sedimentation Erosion
	<u>MS-ESS2-3</u>	Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.	I can use evidence to explain how large events, like slow plate motions or uplift of mountain ranges, and small events, like landslides, sinkholes, earthquakes, volcanoes, and meteoroids all contribute to shape earth's surface	Deposition Tectonic Plate motions Uplift
	<u>MS-ESS2-4</u>	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.	I can use fossils to describe how the earth's surface has changed through time	Landslides Sinkholes Earthquakes
	<u>MS-ESS3-1</u>	Construct a scientific explanation based on evidence for how the uneven distributions of earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes	I can create a model to explain the water cycle, including a description of how water moves by gravity and thermal and light energy from the sun within the 8 main water reservoirs on the earth	Volcanoes Fossil Water cycle Reservoir
	<u>MS-PS1-4</u>	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed	I can explain how coal, a nonrenewable resource, forms from the process of sedimentation of marine organisms	
Life Science: Ecosystems and Organism interactions How do food, reproductive, other organisms, and environmental factors affect a population? How does the flow of energy into an	<u>MS-LS1-4</u>	Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	I can explain various examples of animal behaviors and plant structures used to increase reproduction	Behavior Structure Function
	<u>MS-LS2-1</u>	Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem	I can describe the relationship between structure and function in living organisms	Reproduction Resources Ecosystem
	<u>MS-LS2-2</u>	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems	I can interpret data on the availability (either scarce or abundant) of water, sunlight, food, and space affects organisms in an ecosystem I can define and provide examples of symbiotic relationships in ecosystems, including mutualism,	Organism Symbiotic relationship Mutualism Commensalism Parasitism Food web

<p>energy into an ecosystem connect all living organisms?</p> <p>What impacts do humans have on ecosystems?</p>	<p><u>MS-LS2-3</u></p> <p><u>MS-LS2-5</u></p> <p><u>MS-ESS3-3</u></p> <p><u>5-ESS2-2</u></p> <p><u>5-ESS3-1</u></p>	<p>Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem</p> <p>Evaluate competing design solutions for maintaining biodiversity and ecosystem services.</p> <p>Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment</p> <p>Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.</p> <p>Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.</p>	<p>commensalism, and parasitism</p> <p>I can construct a food web to illustrate how energy flows and matter cycles in an ecosystem initiated by the sun</p> <p>I can define biodiversity and communicate the importance of maintaining biodiversity for a successful ecosystem</p> <p>I can explain what an invasive species is, provide examples of local invasive species, and explain current strategies in place to prevent the spread of invasive species in local ecosystems</p>	<p>producer consumer decomposer Energy Matter Biodiversity Invasive species Human impact</p>
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Seventh Grade				
<p>In seventh grade, students refine their skills as scientists in the classroom. They deepen their understanding of the scientific practices, investigate questions cooperatively with peers, and develop models and explanations to explain the world around them. Throughout the year, students explore the answers the following essential questions:</p> <ul style="list-style-type: none"> -How do scientists meaningfully collect and interpret data with purpose? -What is energy? -How does energy make things happen? -How do different kinds of energy cause different things to happen? -How do living things obtain energy to survive? -How are living things organized? -How does a cell's structure determine it's functions? -How do different parts of living things work together to produce energy for survival? -What causes the weather change from day to day, place to place, and from season to season? -How are climates different and global climate changes happening due to natural and human activities? 				
NGSS Scientific Practices			NGSS Cross-Cutting Concepts	
1. Asking questions and defining problems			1. Patterns	
2. Developing and using models			2. Cause and effect	
3. Planning and carrying out investigations			3. Scale, proportion, and quantity	
4. Analyzing and interpreting data			4. Systems and system models	
5. Using mathematical and computational thinking			5. Energy and matter	
6. Constructing explanations and designing solutions			6. Structure and function	
7. Engaging in argument from evidence			7. Stability and Change	
8. Obtaining, evaluating, and communicating information			8. Interdependence of science, engineering, and technology	
			9. Influence of engineering, technology, and science on society and the natural world	
Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary

<p>Scientific Process Introduction</p> <p>How do scientists meaningfully collect and interpret data with purpose?</p>	<p>All 8 Scientific Practices</p>	<p>Asking questions and defining problems Developing and using models Planning and carrying out investigations Analyzing and interpreting data Using mathematical and computational thinking Constructing explanations and designing solutions Engaging in argument from evidence Obtaining, evaluating, and communicating information</p>	<p>I can investigate experimental phenomena by understanding independent and dependent variables.</p> <p>I can make quantitative and qualitative observations.</p> <p>I can accurately and precisely measure substances.</p> <p>I can organize quantitative and qualitative data into tables, charts, and graphs.</p> <p>I can evaluate the accuracy and precision of data I have collected.</p>	<p>Independent variable dependent variable quantitative data qualitative data accurate precise evaluate</p>
<p>Physical Science</p> <p>What is energy?</p> <p>How does energy make things happen?</p> <p>How do different kinds of energy cause different things to happen?</p>	<p><u>MS-PS3-1</u></p> <p><u>MS-PS3-2</u></p> <p><u>MS-PS3-3</u></p> <p><u>MS-PS3-4</u></p> <p><u>MS-PS3-5</u></p> <p><u>MS-PS4-1</u></p>	<p>Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object</p> <p>Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system</p> <p>Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer</p> <p>Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in average kinetic energy of the particles as measured by temperature</p> <p>Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object</p> <p>Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave</p>	<p>I can explain what it means for an object to have kinetic energy, and gather and display data to show what factors influence how much kinetic energy is in an object.</p> <p>I can make and use a model to describe how the type of energy transforms from one form to another over time, and a second model to show and describe how energy transfers between objects.</p> <p>I can explain what elastic potential energy is and the factors that affect how much elastic energy are in an object and why some objects cannot store elastic energy.</p> <p>I can define thermal energy and explain the connection between thermal energy, kinetic energy, and temperature of objects.</p> <p>I can illustrate a wave and label the important parts, including amplitude, frequency, and wavelength, and compare sound and light waves.</p> <p>I can define electrical energy and make a model to explain how it moves in a circuit.</p> <p>I can explain the connection between magnetic forces and electrical energy in generators and motors.</p>	<p>Energy kinetic energy potential energy gravitational energy elastic energy deformation rigidity energy transformation thermal energy temperature energy transfer wave amplitude frequency wavelength sound energy light energy reflect absorb transmit electrical energy circuit atom electron proton magnetic force generator motor</p>

	<u>MS-PS4-2</u>	Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials		
	<u>MS-PS2-3</u>	Ask questions about data to determine the factors that affect the strength of electric and magnetic forces		
Life Science				
How do living things obtain energy to survive?	<u>MS-PS1-5</u>	Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved	I can define a chemical reaction and identify the reactants and products. I can use a model of a chemical reaction to visualize that the atoms in the reactants are the same as the atoms in the products, but arranged differently.	chemical reaction reactant product photosynthesis microscope cell
How are living things organized?	<u>MS-LS1-6</u>	Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms	I can explain that photosynthesis is a special chemical reaction that some living things use to make food, and analyze data and use evidence to explain what factors are necessary for photosynthesis to occur.	single-celled organism multicellular organism cell membrane mitochondria nucleus chloroplast cell wall
How does a cell's structure determine its functions?	<u>MS-LS1-1</u>	Conduct an investigation to provide evidence that living things are made of cells; either one or many different numbers and types of cells	I can use a microscope to visualize cells that are too small to be seen with our eyes.	digestive system circulatory system respiratory system nervous system
How do different parts of living things work together to produce energy for survival?	<u>MS-LS1-2</u>	Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function	I can compare different types of cells, especially cells from single-celled organisms versus multicellular organisms. I can develop and use a model to describe the different parts of cells and what jobs they do.	carbohydrates proteins fats sugars amino acids fatty acids pulmonary circulation
	<u>MS-LS1-3</u>	Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells	I can provide evidence for how different systems of the body work together to provide the body with energy. I can explain with evidence how food goes through different chemical reactions based on what macronutrients are present, and describe how the products of those reactions with food move through the body to get to all the cells that need them.	systemic circulation cellular respiration nerve central nervous system peripheral nervous system
	<u>MS-LS1-8</u>	Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories	I can use examples to explain how the nervous system is organized in the human body to sense	system

<p>Earth Science</p> <p>What causes the weather change from day to day, place to place, and from season to season?</p> <p>How are climates different and global climate changes happening due to natural and human activities?</p>	MS-ESS2-6	Develop and use a model to describe how unequal heating and rotation of the earth cause patterns of atmospheric and oceanic circulation that determine regional climates	<p>I can list and explain the conditions that make up weather.</p> <p>I can use evidence from experiments to explain the difference between conduction, radiation, and convection, and describe how all three processes contribute to heat the earth's atmosphere.</p>	<p>weather</p> <p>clouds</p> <p>precipitation</p> <p>wind</p> <p>air pressure</p> <p>atmosphere</p> <p>thermosphere</p>
	MS-ESS2-4	Develop a model to describe the cycling of water through earth's systems driven by energy from the sun and the force of gravity	<p>I can explain how winds and different types of air masses form and contribute to global weather patterns.</p>	<p>mesosphere</p> <p>stratosphere</p> <p>troposphere</p> <p>global winds</p> <p>local wind</p> <p>sea breeze</p> <p>land breeze</p>
	MS-ESS2-5	Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions	<p>I can give examples of different types of weather events that can occur when different types of air masses interact.</p> <p>I can explain how weather predicting is not exact and use local weather data to identify patterns that help meteorologists predict weather events.</p>	<p>conduction</p> <p>radiation</p> <p>convection</p> <p>evaporation</p> <p>condensation</p>
	MS-ESS1-1	Develop and use a model of the earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons	<p>I can identify what causes different global climates, and how and why seasons are different based on the time of year and location on earth.</p>	<p>air mass</p> <p>front</p> <p>cold front</p> <p>warm front</p> <p>stationary front</p> <p>occluded front</p>
	MS-ESS3-2	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects	<p>I can provide evidence for global climate change caused by human activities and investigate and report on possible solutions to global climate change.</p>	<p>climate</p> <p>latitude</p> <p>longitude</p> <p>equator</p> <p>seasons</p> <p>tilt</p> <p>rotation</p> <p>revolution</p>
	MS-ESS3-5	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.		<p>greenhouse effect</p>

Eighth Grade

In eighth grade, students culminate their scientific journey with intensive investigations in the following areas: scientific process, chemistry of life, gene expression and genetics, evolution and speciation, forces and motion, and plate tectonics and the changing Earth. Each unit challenges students to develop their own investigations, collect meaningful data, and make thoughtful conclusions and arguments, both written and orally to answer the following essential questions:

- How do scientists develop and carry out scientific investigations to explore answers to questions?
- How do chemical reactions transform and move both matter and energy within living systems?
- How do cellular processes orchestrate the building of diverse cellular proteins?
- Why and how do trait differences exist between family members, within a species, and between species?
- Why and how do species populations evolve over time, sometimes very rapidly?
- How can one species potentially diverge into two (or more) different species?
- How do forces influence how objects move, including when their motion starts, perpetuates, changes direction, or stops?
- How have large-scale, long-term geologic processes influenced Earth's surface over its history?
- How do the long-term global geologic processes continue to impact Earth's surface today in both gradual and rapid ways?

NGSS Scientific Practices	NGSS Cross-Cutting Concepts
1. Asking questions and defining problems	1. Patterns
2. Developing and using models	2. Cause and effect
3. Planning and carrying out investigations	3. Scale, proportion, and quantity
4. Analyzing and interpreting data	4. Systems and system models
5. Using mathematical and computational thinking	5. Energy and matter
6. Constructing explanations and designing solutions	6. Structure and function
7. Engaging in argument from evidence	7. Stability and Change
8. Obtaining, evaluating, and communicating information	8. Interdependence of science, engineering, and technology
	9. Influence of engineering, technology, and science on society and the natural world

Unit Name and Essential Question(s)	NGSS Standard Code	Performance Expectation	Learning Targets	Key Vocabulary
<p>Scientific Process (2 weeks)</p> <p>How do scientists develop and carry out scientific investigations to explore answers to questions?</p> <p>To what extent can science confidently provide truthful answers to human questions about the universe?</p>	All 8 scientific practices	<p>Asking questions and defining problems</p> <p>Developing and using models</p> <p>Planning and carrying out investigations</p> <p>Analyzing and interpreting data</p> <p>Using mathematical and computational thinking</p> <p>Constructing explanations and designing solutions</p> <p>Engaging in argument from evidence</p> <p>Obtaining, evaluating, and communicating information</p>	<p>I can explain how science is a unique discipline for understanding the universe that is both evolving and limited.</p> <p>I can identify the elements of a quality, controlled experiment (fair test) and explain why society has confidence in well-tested scientific claims.</p> <p>I can evaluate the strengths and weaknesses of how an experiment is designed and conducted.</p> <p>I can identify and interpret relevant information from various data charts and graphs.</p> <p>I can investigate complex questions by independently planning and carrying out sound experimental approaches.</p> <p>I can appropriately construct data tables and effectively organize collected experimental data into my tables for analysis.</p> <p>I can effectively analyze data by drawing appropriate graphs align that both illustrate data patterns and align with the rules of graphing.</p> <p>I can develop and communicate logical conclusions supported with relevant and sufficient evidence.</p>	<p>Science</p> <p>Controlled Experiment / Fair Test</p> <p>Data (Quantitative vs. Qualitative)</p> <p>Independent (Manipulated) Variable</p> <p>Dependent (Responding) Variable</p> <p>Constant / Control</p> <p>Control Group</p> <p>Experimental Group</p> <p>Pie Chart (Graph)</p> <p>Line Graph</p> <p>Bar Graph</p> <p>Histogram</p> <p>Appropriate Evidence</p> <p>Sufficient Evidence</p>

Chemistry of Life (6 weeks) How do chemical reactions transform and move both matter and energy within living systems?	<u>MS-LS2-3</u>	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	I can both draw food chains/webs and interpret the feeding roles of organisms from a provided food web. I can describe how energy transforms as it enters, flows through, and leaves a living community. I can draw a labeled ecological pyramid and explain its shape in terms of the 10% rule.	Ecosystem (abiotic + biotic) Community (biotic) Food Chain/Web Law of Matter Conservation Laws of Thermodynamics (1st/2nd) Ecological Pyramid 10% Rule Chemical Reaction Exothermic Process/Reaction Endothermic Process/Reaction Reaction Diagram Energy of Reactants Energy of Products Heat of Reaction Activation Energy Collision Theory Synthesis/Decomposition Reactions Metabolism Enzymes Digestion Carbohydrates (Sugars) Proteins / Amino Acids Lipids (Fats) Photosynthesis Chloroplast/Chlorophyll Cellular Respiration Mitochondria Carbon Cycle Nitrogen Cycle Biological Magnification Criteria Constraints
	<u>MS-PS1-6</u>	Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.	I can describe the conditions necessary for chemical reactions to occur according to collision theory. I can explain what always changes and what always stays the same after a chemical reaction in light of the laws of energy conservation and matter conservation.	
	<u>MS-LS1-6</u>	Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	I can label a reaction diagram and interpret the energy transformations that take place, identifying the diagrammed reaction as exothermic or endothermic. I can research, design, construct, and suggest further modifications for a device that releases heat via a chemical reaction to satisfy a design challenge with specific criteria and constraints.	
	<u>MS-LS1-7</u>	Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	I can explain the specific purpose of photosynthesis, identify where and when the process occurs, and provide the balanced chemical equation for the reaction. I can describe why and how the Sun's different wavelengths of visible light are absorbed and reflected by plants.	
	<u>MS-ETS1-1</u>	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	I can describe the differences between different food molecules (carbohydrates, fats, and proteins), including atomic composition, purpose for organisms, and building blocks. I can explain why enzymes are essential for organism metabolism (synthesis/decomposition), describe how enzymes function, and list key characteristics of enzymes.	
	<u>MS-ETS1-2</u>	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	I can explain the purpose of food digestion and identify where different food polymers are separated into monomers (building blocks) in the human digestive system by specific enzymes. I can describe how different food monomers are delivered and primarily metabolized by cellular enzymes for energy, tissue growth, molecule construction, and/or storage. I can predict how a poor diet lacking in certain food molecules will alter how a person metabolizes of ingested food and stored tissue.	
	<u>MS-ETS1-3</u>	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	I can explain the purpose of cellular respiration, identify where and when the process occurs, provide the balanced chemical equation for the reaction. I can explain how carbon and nitrogen atoms recycle between the air, the ground, and living organisms through the carbon and nitrogen cycles. I can describe the process of biological magnification and explain why humans are susceptible to its effects.	

	<u>MS-ETS1-4</u>	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.		
Gene Expression and Genetics (7 weeks) How do cellular processes orchestrate the building of diverse cellular proteins? Why and how do trait differences exist between family members, within a species, and between species?	<u>MS-LS1-5</u>	Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	I can explain the role of DNA, mRNA, and ribosomes in the building of proteins and gene expression as traits. I can list three major roles that protein molecules serve in an organism. I can differentiate between a trait and a variation (of a trait). I can describe the molecular structure of DNA and the relationships between DNA, genes, and chromosomes. I can describe the major similarities and differences between DNA and RNA. I can transcribe a master strand of DNA into mRNA codons and translate the mRNA codon sequence into an amino acid sequence.	Trait Variation DNA Chromosome Gene / Allele RNA Transcription Translation Nucleus Ribosome Codon Point Mutation Frameshift Mutation Mitosis Asexual Reproduction Sexual Reproduction Meiosis Gametes Sperm / Pollen Egg / Ovule Fertilization Zygote Embryo / Seed Gregor Mendel Purebred Hybrid Genotype Phenotype Dominant Gene/ Variation Recessive Gene / Variation Homozygous Heterozygous Punnett Square Pedigree P / F1 / F2 Generations
	<u>MS-LS3-1</u>	Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.	I can predict how different genetic mutations (point or frameshift mutations) would variably affect the synthesis of a protein and trait expression. I can explain how both an organism's genetic inheritance and environmental exposure work together to influence the organism's development. I can contrast how genes are inherited differently in asexual versus sexual reproduction. I can outline key differences between mitosis and meiosis in creating different cell nuclei. I can describe how flowering plants can reproduce both asexually or sexually, as well as compare and contrast sexual reproduction in flowering plants and animals.	
	<u>MS-LS3-2</u>	Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	I can distinguish between an organism's genotype and phenotype, while also being able to infer an organism's phenotype from its genotype (and vice-versa). I can use parental genotype information to predict possible gametic gene/allele combinations and offspring genotype and phenotype probabilities. I can interpret a pedigree diagram to infer the inheritance pattern (dominant/recessive) of a trait and the genotype/phenotype probabilities for individuals within the family pedigree. I can critically evaluate controversial issues relating to genetic screening/testing/research and take a reasoned position.	
Evolution and Speciation (6 weeks) Why and how do	<u>MS-LS4-5</u>	Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms	I can distinguish between macroevolution (speciation) and microevolution (natural selection). I can define species and explain how scientists determine whether two organisms are the same species.	Species Microevolution (Natural Selection) Macroevolution (Speciation) Variation

<p>Why and how do species populations evolve over time, sometimes very rapidly?</p> <p>How can one species potentially diverge into two (or more) different species?</p>	<p><u>MS-LS1-4</u></p> <p><u>MS-LS4-4</u></p> <p><u>MS-LS4-6</u></p> <p><u>MS-LS2-4</u></p> <p><u>MS-ESS1-4</u></p> <p><u>MS-LS4-1</u></p> <p><u>MS-LS4-2</u></p> <p><u>MS-LS4-3</u></p>	<p>Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p> <p>Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p> <p>Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</p> <p>Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations</p> <p>Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history</p> <p>Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.</p> <p>Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships</p> <p>Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.</p>	<p>organisms are the same species.</p> <p>I can describe the two main sources of genetic trait variation within a species and explain the importance of such variation to natural selection and the survival of a species population.</p> <p>I can explain the logic behind Charles Darwin's Theory of Natural Selection (Survival of the Fittest), the experiences that led to his theory, and how Darwin measured "fitness" of an organism.</p> <p>I can define adaptation and explain how an adaptation is different than variation.</p> <p>I can compare and contrast natural selection with artificial selection by humans.</p> <p>I can define gene pool of a population and describe various circumstances that could alter a population's gene pool, possibly leading to speciation.</p> <p>I can describe how geographic isolation of members within a species population may lead to reproductive isolation and speciation.</p> <p>I can explain how speciation may be rapid or gradual, depending on the selective pressure.</p> <p>I can list and describe several sources of evidence that support scientific claims of microevolution and macroevolution.</p> <p>I can explain how fossil evidence supports the claim that Earth has experienced several mass extinctions over its history.</p>	<p>Mutation</p> <p>Charles Darwin</p> <p>Artificial Selection</p> <p>Fitness</p> <p>Adaptation</p> <p>Vestigial Organ/Structure</p> <p>Homologous Structure</p> <p>Gene Pool</p> <p>Geographic Isolation</p> <p>Reproductive Isolation</p> <p>Sterile Hybrids</p>
<p>Forces and Motion (8 weeks)</p> <p>How do forces influence how objects move, including when their motion starts, perpetuates, changes direction, or stops?</p>	<p><u>MS-PS2-1</u></p> <p><u>MS-PS2-2</u></p> <p><u>MS-PS2-3</u></p>	<p>Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.</p> <p>Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p> <p>Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.</p>	<p>I can define what a force is, list different kinds of forces, and state what properties all forces share.</p> <p>I can compare and contrast gravitational and magnetic forces.</p> <p>I can define, explain, and apply Newton's Three Laws of Motion.</p> <p>I can distinguish between mass and weight.</p> <p>I can calculate an object's weight when given information about object mass and gravity.</p> <p>I can illustrate various forces acting on an object using a free body diagram.</p> <p>I can explain and predict how balanced and unbalanced forces exerted on an object will impact the net force on the object and how it will move.</p>	<p>Force</p> <p>System</p> <p>Newton's First Law of Motion</p> <p>Newton's Second Law of Motion</p> <p>Newton's Third Law of Motion</p> <p>Gravity</p> <p>Weight</p> <p>Free Body Diagram</p> <p>Balanced/Unbalanced Forces</p> <p>Net Force</p> <p>Newton</p> <p>Inertia</p> <p>Velocity</p>

<u>MS-PS2-4</u>	Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	I can distinguish between speed and velocity. I can distinguish between velocity and acceleration.	Acceleration Friction (Static and Dynamic) Distance-Time Graph Velocity-Time Graph Criteria Constraint
<u>MS-PS2-5</u>	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	I can define friction and compare/contrast how static friction and dynamic friction affect object motion. I can collect object motion data, construct distance-time and velocity-time graphs from data, and interpret information about the object's velocity and acceleration from both graph types.	
<u>MS-ESS1-2</u>	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	I can apply mathematical formula equations to solve word problems related to object motion. I can apply principles of force and motion to address posed engineering challenges with specific criteria and constraints.	
<u>MS-ESS1-3</u>	Analyze and interpret data to determine scale properties of objects in the solar system.		
<u>MS-ETS1-1</u>	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.		
<u>MS-ETS1-2</u>	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.		
<u>MS-ETS1-3</u>	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.		
<u>MS-ETS1-4</u>	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.		



Kenilworth School District
The Joseph Sears School

Outdoor Classroom Education

Science Integration

DRAFT

Grade	Branch of Natural Science (Earth, Physical, Life)	FOSS Module	Science Topic/Concept	Activity	NGSS Alignment	Time Frame
Kindergarten	Earth Science	Trees and Weather: Investigation 1	I can identify that plants and animals exhibit behaviors for survival, such as finding food,	Observing Schoolyard Trees	K-ESS2-2, K-ESS3-1	October/November

			<p>protection, and reproduction.</p> <p>I can identify plants and animals have different habitats to help them survive.</p>			
Shannon						
First Grade	Life Science	Plants and Animals: Investigations 1, 2, 3, 4	<p>I can identify plants and animals have external parts to survive.</p> <p>I can identify that plants and animals exhibit behaviors for survival, such as finding food, protection, and reproduction.</p> <p>I can identify plants and animals have different habitats to help them survive.</p>	<p>Plant potatoes in May (kindergarten), harvest in September (first grade)</p> <p>-Collecting animals for terrarium (isopods, worms)</p> <p>-Plant in the fall</p> <p>-Free choice in outdoor classroom</p> <p>-seasonal changes</p> <p>-Sundial on black top-shadows</p>	1-LS1-1 1-LS1-2	<p>Fall</p> <p>**Collect animals earlier in season even if they use them later?***</p>
Blythe						

Second Grade	Life Science	Insects and Plants	<p>I can explain what insects need to survive and compare the different ways that insects meet these needs.</p> <p>I can describe the structures that plants and insects use for growth, survival, and reproduction.</p> <p>I can prove that reproduction is essential to the continued existence, and use models to show that organisms have predictable characteristics of development and life cycles.</p> <p>I can explain how plants and animals work together to produce offspring by using seed dispersal and pollination.</p>	<p>Milkweed beetles (could they collect from the outdoor classroom?)</p> <p>-brassica seeds- could that be planted outdoors? What is the purpose of planting? Yes in spring</p> <p>Pebbles/sand/silt unit</p>	<p>2-LS2-1 2-LS2-2 2-LS4-1</p>	<p>Spring</p> <p>Could one piece be a fit for outdoor classroom? Could they move butterflies up so they could be released in a better environment?</p> <p>Insects and Plants during the 3rd trimester</p>
Alison G.						
Third Grade	Life Science		<p>I can identify how seeds alike and different.</p> <p>I can identify what structures a seedling has and how they help it grow and survive.</p>	<p>Hydroponics, seed dispersal and seed identification</p> <p>-Seed origin and seed sprouters</p>	<p>3-LS3-1 3-LS3-2</p>	<p>Fall- Outdoor seed dispersal; collection</p> <p>Winter- inclass hydroponics</p>
Toula						

Fourth Grade	Life Science	Investigation 1 and 4	<p>I can explain the internal and external structures and functions of plants and animals.</p> <p>I can explain how animals sense and react to their environments through their senses.</p>	<p>-collecting isopods outdoor?</p> <p>-Range of tolerance- map schoolyard plants</p> <p>-Fossils buddies with sixth grade</p>	<p>4-LS1-1</p> <p>4-LS1-2</p>	Fall?
Rachael						
Fifth Grade	<p>Earth Science</p> <p>Life Science</p>	<p>Investigation 1, ES</p> <p>Investigation 2</p>	<p>I can use information from several food chains to build a food web that incorporates plants, animals, decomposers, and the environment</p> <p>I can define what a system is and apply it to how living organisms thrive</p>	<p>Journaling amount of sunlight</p> <p>What plants do they use? Could we overlap with growth?</p> <p>-compost</p> <p>worms in Kim's closet compost</p> <p>-insect search</p> <p>-collecting their own mixture from the garden</p> <p>-Sundial-shadows</p>	<p>5-ESS1-2</p> <p>5-LS1-1</p>	

Kim						
Sixth Grade	-Earth Science -Life Science	Invasive species introduction	<p>I can define biodiversity and communicate the importance of maintaining biodiversity for a successful ecosystem</p> <p>I can explain what an invasive species is, provide examples of local invasive species, and explain current strategies in place to prevent the spread of invasive species in local ecosystems</p>	<p>Invasive species introduction</p> <p>-Fossils buddies with fourth grade</p>	MS-LS2-5 MS-ESS3-3	
Andrea						
Seventh Grade	-Life Science -Earth Science (alternative energies)	Photosynthesis	<p>I can explain that photosynthesis is a special chemical reaction that some living things use to make food, and analyze data and use evidence to explain what factors are necessary for photosynthesis to occur.</p> <p>I can use a microscope to visualize cells that are too small to be seen with our eyes.</p>	Looking at plant cells from outdoor garden to identify signs of photosynthesis. Photosynthesis experiments	MS-LS1-1 MS-LS1-2	
Catherine						
Eighth Grade				Katie will talk		

Jim						
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Practical Arts: Harvested; Cooked with harvest; dried and frozen herbs and kale at end of season; studied local and seasonal food; food storage in winter experiment; plant parts; started seeds inside

Meeting August 15, 2018- Catherine, Lisa and Katie.

- What is the goal - mission statement - *Surrounded by native plants, butterfly and rain gardens, vegetable and herb beds, fruit bushes and trees, students develop an understanding and curiosity about the natural world.*
- Newsletter - mission statement about being curious - what is in the outdoor classroom - include engaging classroom.
 - Questions to engage kids and get them / and teacher thinking “things to be curious about this week” “here are things to be curious now”
 - Give younger kids questions; higher grades writing questions
 - Curiosity journal
 - Sign up - schedule
 - Photos of children in the garden
 - Start with photos from summer
 - Use mission of school and of OC
- Twitter - outdoor classroom news, photos.
- Send to main science committee member at that grade level what is coming up - Ex. 1st grade harvest potatoes

Outdoor Classroom Uses by Grade 2017-2019

Grade	Date/Season	Lesson/Topic/Activity	Content
JK	Spring	Birds	
K	Spring	Plant potato eyes; exploring trees	Science
1	Early fall	Harvest potato; gathered insects for terrarium	Science
2	Spring	Plants and insects	Science
3	Fall Winter	Seed dispersal (flowers and vegetables) Hydroponics (indoor)	Science Science
4	Late Fall	Soil	Science
5	Winter	Milkweed Seeds/Monarch; worms in compost	Science
6	Fall	"Giver" /literature; invasive species	ELA
7	Fall	Milpa	Social Studies
8		Seed start	
Art	Fall/Winter	Cut flowers for a large scale observational painting with first and second grade students.	Parkes
Practical Arts	Fall/Spring Winter	Harvest/Cook / dry, freeze, can Grow Cart plant	Nahrwold
Music	Fall	Ukulele Classes/Drama Classes	Gordon
Advisory	Fall	Breakfast	7th grade



A 21st-century learning community rooted in tradition and excellence.

ACADEMICS ▾

Outdoor Classroom

Learning through an authentic farm-to-table experience



The Joseph Sears School Outdoor Classroom provides students with an outdoor space for hands-on exploration, inquiry, discovery and garden-based learning in all grades K-8 in areas of practical arts, core subjects, social emotional, and health. Surrounded by native plants, butterfly and rain gardens, vegetable and herb beds, fruit bushes and trees, students develop an understanding and curiosity about the natural world. In addition during practical arts classes, students develop an understanding of where our food comes from with the farm-to-table concept - plant, harvest, eat (and enjoy!). Farm-to-table lessons also increase students' making healthier food choices.

Teacher Sign-Up

5th Grade Overview

Welcome to 5th Grade Practical Arts!

Mrs. Katie Nahrwold

Practical Arts and Outdoor Classroom

KNahrwold@kenilworth38.org

(<mailto:KNahrwold@kenilworth38.org>) 847-853-

3851



In this class you will be learning everyday life skills to help you become a more independent individual. We meet two times a week for about 30 minutes.

During the trimester we will be learning practical life skills such as:

- cooking techniques and skills,
- food and kitchen safety,
- implementing the farm to table concept with the outdoor classroom,
- collaborative teamwork as well as organizational and time management skills.

Objectives

In Practical Arts you will experience real life, hands-on activities and projects. A wide-variety of practical skills are learned that can be used throughout students' lives.

Class Overview

Week #1 Introduction - Rules & Roles

Week #2 Kitchen Hygiene

Week #3 Applied in Cooking Lab

Week #4 Kitchen Safety

Week #5 Applied in Cooking Lab

Week #6 Food Safety

Week #7 Applied in Cooking Lab

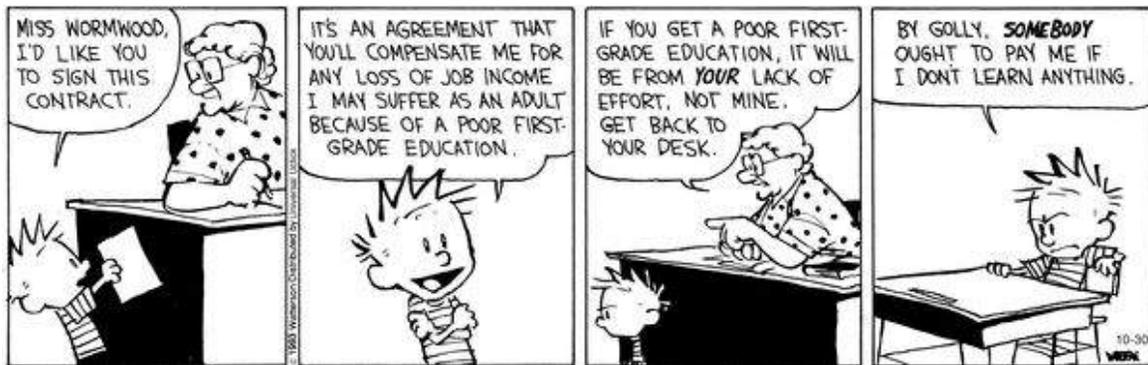
Week #8 Recipe Parts

Week #9 Applied in Cooking Lab

Week #10 Seasonal and Local Eating

Week #11 Applied in Cooking Lab

Week #12 Reflection



Grading

Your grade will be comprised of several different factors. You will have classwork, cooking lab participation as well as assessments and quizzes. You will be graded on effort rather than how well you can do on the skill. Cooking labs will reflect that you are participating in your group and on individual tasks. This will make up the effort/participation portion of your grade.

Overall Grade = Classwork 30% Quizzes, Tests, Projects 30% Effort/Participation 40%

"Perhaps the most important single cause of a person's success or failure educationally has to do with the question of what he/she believes about himself/herself" Arthur Combs

Environmental Literacy and Sustainability

DOT = Do One Thing



10/25/18
Katie Nahrwold

What is it & Why?

According to [North American Association for Environmental Education \(NAAEE\)](https://naaee.org): *Environmental education is about creating healthier communities for all—with ecological integrity, shared prosperity, and social equity as our long-term goals.* <https://naaee.org>

The Center for Ecoliteracy:
dedicated to cultivating education for sustainable living. Students need to experience and understand how nature sustains life and how to live accordingly. Encouraging schools to teach and model sustainable practices.

WATCH THIS

[The Value of Environmental Education](#)

Quality environmental education programs help develop an environmentally literate citizenry that can compete in our global economy; has the skills, knowledge, and inclinations to make well-informed choices; and exercises the rights and responsibilities of members of a community. (NAAEE, Guidelines for Excellence Community Engagement)



GREEN SCHOOLYARDS CAN IMPROVE ACADEMIC OUTCOMES

THE NEWS
Only 10% of U.S. 8th graders perform at or above standards for science and math.¹

SCHOOLS ACROSS THE NATION ARE SEEKING WAYS TO IMPROVE ACADEMIC OUTCOMES FOR ALL STUDENTS.

Green schoolyards promote academic achievement through hands-on, experiential learning and by enhancing the cognitive and emotional processes important for learning.

ENHANCING LEARNING

Green schoolyards provide experiential learning across many subjects.^{2,3}

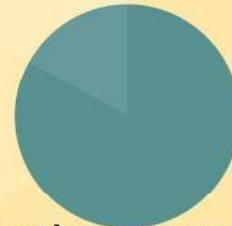


ROOM WITH A VIEW

Seeing nature and greenery from school buildings can foster positive academic outcomes.^{10,11}



Children's and Nature Network



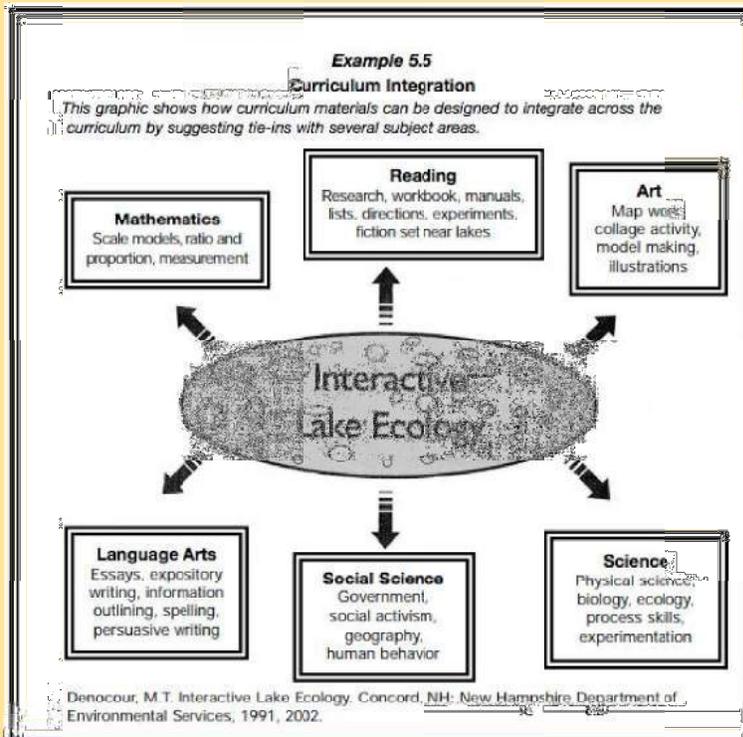
Nature has the power to make children healthier, happier and smarter.

But over the last few generations, childhood has moved indoors, leaving kids disconnected from the natural world. This worldwide trend has profound implications for children's healthy development—and the future of our planet.

Environmental Education Materials: Guidelines for Excellence Summary

Best Practices in Environmental Education - North American Association for Environmental Education

- #1 Fairness and accuracy: EE materials should be fair and accurate in describing environmental problems, issues, and conditions, and in reflecting the diversity of perspectives on them.
- #2 Depth: EE materials should foster awareness of the natural and built environment, an understanding of environmental concepts, conditions, and issues, and an awareness of the feelings, values, attitudes, and perceptions at the heart of environmental issues, as appropriate for different developmental levels.
- #3 Emphasis on skills building: EE materials should build lifelong skills that enable learners to address environmental issues.
- #4 Action orientation: EE materials should promote civic responsibility, encouraging learners to use their knowledge, personal skills, and assessments of environmental problems and issues as a basis for environmental problem solving and action.
- #5 Instructional soundness: EE materials should rely on instructional techniques that create an effective learning environment. Assessment
- #6 Usability: EE materials should be well designed and easy to use.



Materials can recognize the interdisciplinary nature of environmental education.

Example: 5.2
Aqua Words

This activity, intended for use with primary and intermediate grade levels, illustrates how concepts can be conveyed in more than one way within one activity. Its objective is to enable students to describe a variety of ways and reasons why water is important to people and wildlife.

Procedure

1. Have the students bring in photographs from magazines that show water. Ask them to look especially for pictures that show how living things depend on water. Display these photographs and use them as a basis for discussion.
2. Ask students to think about some of the ways they have used water that day. Emphasize how all living things are ultimately connected to water.
3. Using a long strip of butcher paper or spacious empty chalkboard for recording, ask the students to list at least 100 words that have something to do with water. *Note: For younger students, use pictures or a combination of words and pictures.*
4. Using the list of words that were recorded, ask the students to create word trees of water-related words. Begin with a simple word tree (and move to) more complex ones.

5. When students have finished several word trees, have them look at what they have done and create one or two poetic definitions of water or water-related concepts. These could begin: "Water . . ." or "Water is . . ." If not definitions, the students could create sentences or even paragraphs about water.
6. Have students write their poetic statements onto various shades of blue, aqua, gray, white, and green construction paper cut to graphically fit the feeling of their idea.

Materials should offer opportunities for different modes of teaching and learning.

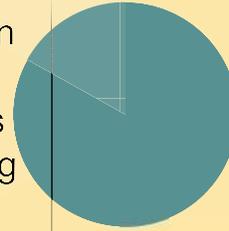
NAAEE's Excellence in Environmental Education
Guidelines for Learning:

Strand 1 - Questioning, Analysis, and Interpretation
Skills

Strand 2 - Knowledge of Environmental Processes
and Systems - Earth as a Physical System & Living
Environment - Humans & Their Societies

Strand 3 - Skills for Understanding and Addressing
Environmental Issues

Strand 4 - Personal and Civic Responsibility



Is there alignment with the Current D38 Curriculum?

At Joseph Sears . . .

3 R's: Reduce, Reuse - [Recycle - waste and food \(compost\)](#)

Outdoor Classroom: Integrate environmental education through our garden and [science curriculum](#)

[Lunchroom
Waste
Reduction
Video](#)



[Green Guidelines
for Events](#)



Staff Sustainability Committee

Thursday, September 7, 2017 - **Waste Sort** led by
Mary S. Allen, **SWANCC** Recycling and Education Director

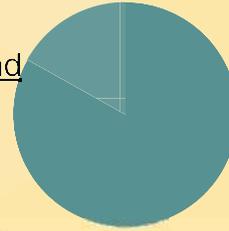
Students are taking care of our earth by understanding the concepts of reduce, reuse and recycle & being responsible stewards of our environment.

The aim of U.S. Department of Education Green Ribbon Schools (ED-GRS) is to inspire schools, districts and Institutions of Higher Education (IHEs) to strive for 21st century excellence by highlighting promising practices and resources that all can employ. To that end, the award recognizes schools, districts, and IHEs that:

1. Reduce environmental impact and costs;
2. Improve the health and wellness of schools, students, and staff; and
3. Provide effective environmental and sustainability education.

Combined progress in ALL three of these areas, known as Pillars, serves as the basis for recognition.

Green Ribbon Schools



Green Ribbon Schools, continued . . .

Healthy schools and wellness practices ensure that all students learn in an environment conducive to achieving their full potential. Outdoor, environmental, and sustainability education helps all students engage in hands-on, authentic learning, hone critical thinking and collaboration skills, stay active and fit, and develop a solid foundation in many disciplines.

With the cohort announced in spring 2018, the award had honored some 386 schools, 62 districts, and 40 post-secondary institutions.

U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools



Neighboring Schools and Organizations

Wilmette D39 [Sustainability page](#) & [Sustainability Practices Presentation](#)

Glencoe, [West School, Going Green](#)

[New Trier High School](#), Sustainability Page

[Prairie Crossing Charter School](#), Grayslake- **Mission: We believe that children are our best hope to improve the world**

[Academy for Global Citizenship](#), Chicago- **Our mission is to empower all students to positively impact the community and world beyond.**

[Go Green Illinois Schools](#) *The mission of Go Green Illinois Schools (GGILS) is to raise environmental awareness and connect individuals and groups that work toward sustainability in all school communities extending from early childhood, through K-12, and into the college environment. Currently, we have about 200 members and 80 area schools and groups represented. GGILS usually meets 2-3 times per school year with occasional "field trips". To join or learn more, contact us or submit your information below.*



Go Green Illinois Go Green Illinois works to encourage and support the establishment of citizen's environmental groups in every community in the northern suburbs, to share best practices among the groups and to collaborate on addressing environmental challenges that cross municipal boundaries.

Neighboring Schools:

Sunset Ridge District 29

LEED Platinum - 70,000-square-foot school The school is a showcase of environmental stewardship. It has achieved LEED Platinum Certification and **is the first public school in Illinois designed to be Net Zero Energy.** Building sustainability features, energy usage displays, and **on-site water conservation practices are integrated into the curriculum, providing unique education opportunities and encouraging connection to the global community.** Learning stations with scannable QR codes transform the building into a living laboratory, giving students a glimpse of energy being created with the photovoltaic roof panels, how plumbing works, and other fun features.

"We're hoping the building, in and of itself, will be a teaching tool for kids about their role in the ecosystem," said Superintendent Ed Stange.



Go Green Illinois Schools - WINTER meeting: February 7, 11-12:30. Tour & administrators will present on the project.

How to help children become environmentally literate before asking them to Save the World!

Save the Elephants: Don't Buy Ivory Soap, by Katie Slivovsky, Chicago-Children's Museum. She quotes psychologist Louise Chawla. She interviewed environmentally active citizens and found that they attributed their commitment to "*many hours spent outdoors [as children]... and an adult who taught a respect for nature.*"

[Carbon Footprint - Climate Change Calculator](#)- There are many things you can do to help reduce climate change and its effects on people and the environment. Use this calculator to learn about some simple steps you can take to reduce your impact on the planet.

[STARTING WITH SOIL](#)- An iPad app from the Center for Ecoliteracy and Whole Kids Foundation offers a playful, visually rich way to help kids understand that soil is a living system full of fascinating relationships.



[Project Learning Tree](#)

GREENING STEM EDUCATOR RESOURCE

The environment is a compelling context for teaching STEM (Science, Technology, Engineering and Math) as it provides teachers with a diverse range of real-world challenges that engage students in hands-on opportunities to apply and reinforce STEM concepts across multiple subject areas. Toolkits in Math, Science, Engineering. ([National Environmental Education Foundation](#))

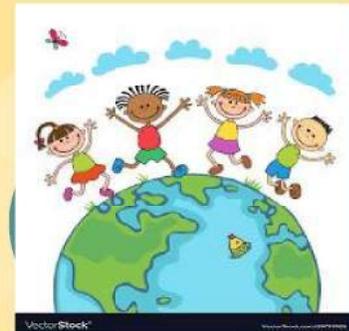
Lesson Plan: How Big Is Your Carbon Footprint? (6-12)

Essential question: How can I understand my impact on the environment and our collective impact on the Earth?

Lesson Plan: School Energy Map (3-12)

Adapted from the California Energy Commission

Essential questions: How can we identify easy opportunities for energy savings and act on them? What is our energy savings plan?



Lesson: What to Wear and Drink? Weather Patterns & Climatic Regions Learning Objectives (3-5)

List several climatic regions in the world. Compare and contrast the characteristics of different climatic regions. Explain why engineers must take into account climate and weather patterns when designing materials to protect people and systems to provide clean drinking water.

Resources:

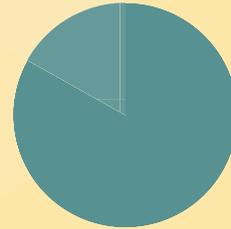
- [SWANCC](#) - see Elist for Educators
- [SCARCE](#) - DuPage County
- [Recycling Do's and Don'ts video](#)
- [Illinois Environmental Protection Agency](#)
- [North American Association for Environmental Education](#)
- [Global Issues Network](#)
- [National Environmental Education Foundation \(NEEF\)](#) - click for STEM, math, etc.
- [Project Learning Tree](#)
- [Green Schools Alliance](#)
- [Green Schools National Network](#)
- [Center for Green Schools](#)
- [Seven Generations Ahead](#)
- [Children and Nature Network](#)
- [Center for EcoLiteracy](#)



Bottle cap Mosaic made by South School, Glencoe, Recycling Club



DOT = Do One Thing



**On your DOT:
What is 1 thing you may . . .
try, look into, explore, research, teach, experiment
with, learn more about, get help with . . .????**

JSSPVA Environmental Chairs - Past & Future



11/13/18

Katie Nahrwold and Rob Drewry, Sears Environmental Faculty Committee

Faculty Sustainability Committee

Members: Katie Nahrwold (Chair), Robert Drewry, Elisabeth LeBris, Alison Hecimovich, Catherine Lucas, Jayati Lunagariya, Judi Conaghan, Shannon Szymikowski, with additional support from Moris Quijada

Committee Purpose/Mission Statement

- A. To be stewards of sustainable best practices district-wide.
- B. To develop and implement sustainability initiatives in the school when possible
- C. To raise awareness on sustainability issues and topics to the faculty, students and Sears' community.
- D. To encourage energy conservation programs and reinforce good stewardship in the current school building and future construction.
- E. To provide faculty with environmental education opportunities, resources, professional development as requested or appropriate.
- F. To strive for a "zero-waste" school including a goal of applying to be a Green Ribbon School.

Joseph Sears School Environmental Awareness – History – 2008 – 2014

Prepared by Katie Nahrwold (supplemented by Emily Tzur, Kate Denny)

- 2008 / 2009–Sears parents (Judy MacLeod, Sandy Boles) researched what other schools were doing and what issues were in schools
- March, 2009 - This information was presented to Kate Denny and Katie Nahrwold and Environmental Chairs at Sears were launched.
- Summer – 2009 – survey area schools about lunchroom tables – plastic covering debate. School year launched removing plastic.

2009-10

- Bike/Walk to School Week became part of Environmental Team responsibilities – celebrate and sponsor each year
- No Idling Sign in place in front of school.
- Supporting Family Fun Day with Greenware – biodegradable cups for water and volunteers to serve.
- Plastic Table cloths were removed in lunchrooms and tables were cleaned by parents/staff.
- School Recycling introduced – waste-free Wednesdays in lunchroom
- Worked with SAB (Student Advisory Board) to come up with Logo and for green initiatives. Planet Panther was born.
- 1st annual Earth Day celebrated – Earth Day Fair 2010 & Earth Day web conference with technology staff and SAB; over 20 booths and tables; waste-free lunch – tallies were taken of how many participated; tree sapling and lunch container sales.
- Nike Athletic Shoe Drive Recycling Project; Technology Recycling Drive.
- Andrew Katcha identified as scout to work with school and introduce composting and heighten recycling awareness for his Eagle Scout project
- January Waste-Audit conducted with Andrew, Mary Allen of SWANCC, Katie Nahrwold and 2 additional volunteers. Lunchroom waste 118 pounds one day, 9 bags of garbage.
- Follow up with a waste-free lunch day and only 2 garbage bags full.
- January - Andrew and Kelly Kalinich applied for a grant with Dept. of Commerce and Economic Development awarded in June \$9,000 to buy composting bins and recycling bins for school.

2010-11

- Andrew Katcha worked with Kate and Katie to begin composting at Sears School.
- Visited West School in Glencoe to observe their lunchroom and composting
- Recycling Carts introduced in lunchroom
- Sponsored and promoted Bike and Walk to School Week
- Earth Day – 2011 – morning activities – learn about our composters/seed and planting activity with garden clubs; and all-week events
- Nike Athletic Shoe Drive Recycling Project.
- April - Andrew Katcha, Sears graduate, awarded 2011 Governor's Volunteer Service Award for his efforts in expanding our districts recycling and environmental education programs.
- Eco-Products introduced in lunchroom and in school replacing disposable plates, cups, forks, knives, spoons.
- Environmental Club began in Spring as a result of request by Environmental Chairs

2011-12 (1 of 2)

- Environmental Club (Planet Panther) grades 4-6 – very successful with support of Environmental chairs (trashy fashion show; rain barrel winners; leaders in school)
- Launched Area School Environmental Awareness Meeting at Sears School. Group continued throughout the year meeting two more times. Approximately 35 schools/community groups represented and about 65 members.
- Green Team of parents and community members met monthly.
- Outdoor Classroom concept began – Fall (after many discussions since 2009 for school garden!)
- Sponsored and promoted Bike and Walk to School Week
- Received Grant from SWANCC to purchase reusable food containers to use during Earth Week as prizes.
- Recycling Awareness Day celebrated with support of Environmental Chair – Club carried their own garbage all day and sorted at end of day – garbage, recyclables, compost
- Outdoor recycling containers in place

2011-12 (2 of 2)

- 2nd Earth Day Fair – over 30 booths and tables – including:
 - Tree sapling and reusable lunch container sales.
 - Skype with climatologist Gavin A. Schmidt.
 - Light bulb, battery, and small electronics recycling drive.
 - Writing Instrument Drive – UP-cycle old items.
- April 27 – Arbor Day celebration tree planting with Village of Kenilworth, Planet Panther and Sears School – Making Kenilworth a Tree City.
- Sears Benefit – “Get Your Green On”
- Spring 2012 Andrew continued to maintain composters and trained Sam Nahrwold and Katie to continue for 2012-13
- No Idling Cones purchased and placed in back of school.
- Provide monthly communications in Sears to Home including a “green” tip each month.

2012-13

- Sponsored and promoted Bike and Walk to School Week
- Exploring ideas for food vendors for lunchroom – to eliminate waste, smaller portions, healthier food options – Organic Life
- Shared “Bee Nice Use it Twice” paper reusing/recycling concept with Planet Panther Club for America Recycles Day.
- Continue to remain involved with Outdoor Classroom – leading and organizing plant share with Highcrest School in Wilmette, providing volunteers for plantings at Sears, supporting outdoor classroom development

2013-14

- Organized and publicized walk/bike week in October
- Seven Generations Ahead was brought in by the school in December to do a waste audit to help reduce waste in the lunchrooms. PVA then helped organize volunteers to staff bins in the lunchroom during the winter (January-March) and worked with Catherine Lucas/Planet Panther to try to ensure that someone was present each day. The staff and students were educated on proper waste disposal, and much progress was made.
- Earth Week: "Do One Thing" theme. Students each made a pledge to do one thing to help the environment on a "DOT", and the DOTs were displayed in the school lobby. On Earth Day, PVA supported Planet Panther by providing supplies for recycled milk carton birdhouses and prizes for their games. The committee sponsored another Walk and Bike to School challenge, which lasted all week, and winning advisory received breakfast. PVA held a weeklong Waste Free Lunch raffle in both cafeterias, with one prize offered per grade. The prizes included recyclable TOMS shoes, waste free lunch gear, a solar radio, a solar mechanics kit, and solar iPhone/iPad chargers.
- Trex Plastic film recycling--collected materials from bins around school and took them to central collection location. Received a birdhouse for participation, which is displayed in the Outdoor Classroom.
- July 10, 2014 Joseph Sears hosted, Go Green Illinois Schools area school summer outdoor classroom garden tours.

- 2017-18 - waste audit September 7 with parent support, lunchroom waste sorting parent support
- Since forming, we have maintained a relationship and worked closely with SWANCC – Solid Waste Agency of Northern Cook County – Educational Director – Mary Allen.
- Chairs have attend SWANCC School Awareness meetings in fall.
- Sears has been awarded Certificate of Achievement by SWANCC for waste reduction each year.
- October 7, 2015, Joseph Sears School, hosted Go Green Illinois Schools, Notes 10-7-15,
- July 20, 2015, Joseph Sears School, and Community Go Green Groups sponsored: Dan Schnitzer, School Sustainability Coordinator. Schools as a Living EcoSystem
- 2017 Katie Nahrwold, hired as Sustainability Coordinator
- 2018 Faculty Sustainability Committee formed
- 2018 sustainable building and construction researched as the Village House and school renovations meet best practices for 21st education.

JSSPVA Environmental "green" chair role - Faculty Sustainability Committee recommendations:



- Align with Sustainability Committee Purpose and Mission to collaborate as a "green team" throughout the school year.
- *Support awareness and sustainable best practices in JSSPVA sponsored events and meetings using [Sears Green Guidelines](#).
- October - Host National [Bike and Walk to School](#) Week
- November - Raise awareness for [America Recycles Day](#), November 15 or a similar Environmental Awareness Week (see Wilmette D39 for ideas)
- April - Host Earth Month, week, day celebrations and awareness
- November-April - Lead [Trex plastic film recycling](#) June - support Locker clean out and reusing, recycling of school supplies
- Attend [Go Green Illinois School meetings](#) -(next meeting is at Sunset Ridge, LEED Platinum School)
- Provide School-wide support when necessary
- Other: [Arbor Day](#) (April 26) , [International Composting Awareness Week](#) (May 5-11)

Area School PTA Environmental Awareness representatives:

- Connect with other area schools Environmental Awareness (EA) representatives for ideas and suggestions
- Wilmette District 39 Schools:
 - [PTA Environmental Awareness Representatives Job Description](#)
 - [Central School Environmental Awareness Week](#)
 - [McKenzie School](#)
- Winnetka District 36 Green Team
 - September [Meeting Minutes](#) and 2018-19 Calendar
- Glencoe District 35, [West School Going Green](#)



Community Relations

Community Use of School Facilities

School facilities are available for use by community residents and organizations during non-school hours when such use does not: (1) interfere with any school function or affect the safety of students or employees, or (2) affect the property or liability of the School District. The use of school facilities for school purposes has precedence over all other uses. The District reserves the right to cancel previously scheduled use of facilities by community organizations and other groups. The use of school facilities requires the prior approval of the Superintendent or designee and is subject to applicable procedures.

Persons on school premises must abide by the District's conduct rules at all times.

Student groups (Girl Scouts, Boy Scouts), school-related organizations (The Joseph Sears School Parents' Volunteer Association, The Joseph Sears School Booster Club, and The Joseph Sears School Foundation), local government agencies (Village of Kenilworth, Kenilworth Park District, Kenilworth Police Department, Winnetka Fire Department) and non-profit organizations are granted the use of school facilities at no charge during regularly staffed hours. Fees and costs shall apply during non-regularly staffed hours and to other individuals/organizations granted use of facilities at any time.

A fee schedule and other terms of use shall be prepared by the Superintendent and be subject to annual approval by the School Board.

- LEGAL REF.: 20 U.S.C. §7905.
 10 ILCS 5/19-2.2.
 105 ILCS 5/10-20.40, 5/10-22.10, and 5/29-3.5.
Good News Club v. Milford Central School, 121 S.Ct. 2093 (2001).
Lamb's Chapel v. Center Moriches Union Free School District, 113 S.Ct. 2141 (1993).
Rosenberger v. Rector and Visitors of Univ. of Va., 515 U.S. 819 (1995).
- CROSS REF.: 7:330 (Student Use of Building - Equal Access), 8:25 (Advertising and Distributing Materials in Schools Provided by Non-School Related Entities), 8:30 (Visitors to and Conduct on School Property)
- ADMIN. PROC.: 8:20-AP (Community Use of School Facilities)

Sustainability Coordinator

Prepared by Katie Nahrwold, 1/15/19 and 6/9/19

[Sustainability Coordinator Role at Joseph Sears School](#): to develop and implement sustainability initiatives and awareness in the school.

- Continued to support, monitor, and implement recycling, composting and waste reduction for the District with primary focus in the lunchrooms.
- Worked over the summer with waste haulers, Moris, and Trish to revisit our contracts with Waste Management (compost) and Advanced Disposal (landfill and recycling).
- Communicate with waste haulers regarding missed pick ups, holding service, and other issues with Moris support.
- Researched and prepared recommendations to Dr. LeRoy regarding other waste haulers that have more competitive pricing and provide all three services.
- Provided education, training and communications to lunchroom supervisors with coordination and support of Jeff Gerdin, as well as revisited waste station set up and staffing expectations.
- Communicated with faculty and staff regarding waste reduction efforts and opportunities at Sears School including [Sears Green Guidelines](#), and [District Wide waste guidelines](#); as well as offer tips and resources as requested.
- Maintained the “green” corner in the LTC with Elisabeth for marker, plastic film and battery (which was terminated in fall) recycling as well as educational information.
- Updated all signage for compost, recycle, landfill, liquid waste, recovery, straws in both lunchrooms and in areas of the building where we compost; provided signage links to staff as well.
- Continued relationship with Marla’s food service and we work together to decrease waste and reduce unnecessary packaging as well as focus on sourcing local produce.
- Worked with JSSPVA before the school year to review the parent environmental awareness position and needs for Bike and Walk to School, lunchroom support and Earth Day.
- Work with and support the JSSPVA Environmental Parent Chair(s).
- Continued communication with JSSPVA throughout the fall. Plans for Bike and Walk to School in April in conjunction with Earth Month; encouraged use of [Sears Green Guidelines](#) for all events.
- Led waste reduction lessons with each class in grades K-4, November 6-9, 2018, to introduce and reteach the waste sorting in our lunchrooms as well as the importance of taking care of the earth.
- Presented to JSSPVA on 11/13/18 with Rob providing education on “[JSSPVA’s environmental Chair role](#)” past, present and future; stayed for Q & A.
- Presented at Teacher Institute Day 10/25/18 [Environmental Literacy](#).

- Coordinated the [Trex plastic bag recycling](#) challenge program with JSSPVA. Provided resources and education to begin the program. Collected items weekly for JSSPVA pick up.
- Attend meetings and member/President of [Go Green Illinois School](#); Fall (9/17/18) at The Organic Gardener, Middlefork Farm, Northfield on School Gardens; Winter (2/7/19) at Sunset Ridge School, Northfield - first LEED Platinum public school in Illinois as well as the first public school in Illinois to be designed to be Zero Net Energy and Spring (5/16/19) at Indian Trails, Highland Park -new Garden Learning Center including a greenhouse and organic garden.
- Member of the New Trier Environmental District committee, representing District 38, and attend meetings 3-4 times a year led by Chris Johnson, Assistant Superintendent for Finance and Operations - supporting [Sustainable](#) initiatives
- Promoted and provided education for classroom composting as well as composting in faculty lounge and by coffee maker increasing District composting in [13 areas](#). Purchased new classroom composting bins based on feedback from teachers for these efforts.
- Continue to work closely with Moris and custodians on all matters - waste hauler contracts, composting, recycling, education, Eco-products and daily issues; as well as provide him with education and resources to better educate his staff.
- Began Sustainability Faculty Committee in the fall with meetings twice a month. [See minutes/agenda](#) from all meetings.
- **The faculty Sustainability Committee designated members to support and join the Village House and District Facilities committees to support best practices.**
- Coordinated and attended meeting with Elisabeth LeBris, Rob Drewry and with Mike Eichhorn, [USGBC](#) Green Schools and Wold architects, and **Scott Wallace, School Board member to review village house project and importance of sustainable goals and mission.** The [Green Ribbon Schools](#) award will provide excellent guidelines for the district facilities projects - now and in the future.
- Created Village House committee consisting of myself and Elisabeth and Rob to as liaison and support for the Village House project.
- Coordinated a Village House presentation by Mindy Kelly for students, staff and faculty on April 5th to understand the project and goals. The presentation was held in the LTC and was standing room only. It was well received. Mrs. Bartholomay attended too as Village House benefit co-chair.
- Provided Dr. LeRoy with a request from the sustainability committee in December to begin work toward environmental district goals beginning with an audit with Mr. Eichhorn and Wold Architects and USGBC Green Schools. Coordinated audit kick off meeting on April 25 with Mr. Eichhorn and committee and Dr. LeRoy - see [agenda](#) and [audit introduction presentation](#).
- Worked closely with Mr. Eichhorn and Dr. LeRoy on audit including communications with staff, presentation to Team Coordinators, resource, and assist in completing audit information for custodial team and areas of the district.

- Re-started the [Planet Panther Environmental](#) Green Student Club, [first meeting 1/10/19](#) with Catherine Lucas and Andrea Drangsholt - later also joined by Jayati Lunagariya too.
- Oversee MPR waste station 3 days a week and support efforts in Village House when possible. Communicate and support Markus and staff in VH. Currently working with student club to better the waste sorting process in VH.
- **Contact with Waste Haulers - Waste Management (compost) Data: average weight diverted per month is 1.24 tons, or 2, 480 lbs. (report shared with administration).** Advanced Disposal landfill - no numbers shared.
- Presented to 8th grade world language classes about [waste reduction](#) in conjunction with their environmental/sustainability unit. Supported students who had questions and advised one project.
- Presented to teachers by request (ex.5th grade Mrs. Slovitt) and all Practical Arts classes on [composting at Sears](#) and [waste reduction](#) at Sears.
- Worked with custodial staff to provide waste reduction -composting and landfill - at school events with food.
- Created Earth Day/month activities, events and education for faculty and staff with committee - see [Earth month document shared](#) as well as [Earth Week raffle; paper/copier usage facts](#) (continued communication regarding paper waste with administration on BOE).
- Organized Earth Day speaker, [Sydney Bitar](#) - [Earth Day presentation](#), for grades K-8th on Earth Day, April 22. Presentation in the auditorium as well as personal visits in grades K-2.
- Coordinated tour of Sunset Ridge (Platinum public school in Illinois as well as the first public school in Illinois to be designed to be Zero Net Energy) with Dr. Ivy Sukenik and Dr. Stange for Sears faculty ([see sign up](#)) on April 8 as well as communications before/after and follow-up meeting to after gather ideas, reactions post-tour in this [document](#). About 15 faculty/staff attended the tour.
- Created and coordinated an end of year desk/locker clean out and donation with sustainability committee and JSSPVA - [see flyer](#).
- Set goals for 2019-20 with the sustainability committee on June 5th including **education for staff/faculty on waste reduction** during school PD day, training lunchroom supervisors, composting by floor/building, school pack waste reduction in August and continued collaboration on Village House - as well as sustainability audit report results and recommendations.

[Sustainability Coordinator Report 2018-2019](#)

Sustainability Coordinator Role

Responsibilities include:

- Chair the faculty sustainability committee.
 - **Committee Purpose/Mission Statement:**
 - A. To be stewards of sustainable best practices district-wide.
 - B. To develop and implement sustainability initiatives in the school when possible
 - C. To raise awareness on sustainability issues and topics to the faculty, students and Sears' community.
 - D. To encourage energy conservation programs and reinforce good stewardship in the current school building and future construction.
 - E. To provide faculty with environmental education opportunities, resources, professional development as requested or appropriate.
- Develop and implement recycling, composting and waste reduction plan for the school including the lunchrooms.
- Assist with energy conservation programs to reduce utility budget and reinforce good stewardship in the school.
- Support faculty, JSSPVA and student efforts for Earth Day/month.
- Support other "green" events and programs such as National Recycling Day; walk and bike to school week; Green Apple Day of Service; Arbor Day; Trex plastic bag program; end of year school supply recycling and locker/desk clean out.
- Improve all recycling and composting efforts in place and work directly with custodial staff and waste hauler.
- Lead or offer professional development for interested teachers in sustainable best-practices in their classrooms.
- Support teachers with environmental education opportunities, resources, and programs as requested or appropriate.
- Create a zero-waste guide for school events, meetings and programs - support these efforts as needed.
- Implement zero-waste initiative at all waste-generating events in the school - eliminate water bottles and unnecessary waste.
- Support Building and Grounds committee with best sustainable practices as they make grounds decisions or building improvements.
- Support custodial staff in any "Green products" they should be using in school and on school property that are safe for students/staff and environment.
- Propose a Green Club - grades 3-5
- Consider Green Ribbon School application process.
- Attend Go Green Illinois Schools meeting and represent Sears School.
- Attend New Trier Environmental District team meetings.

Sustainability Agenda and Minutes

Date and Members Present

Date: 9/4/19

Present: KN, EL, CL, RD

[Green Guidelines](#)

Important Links

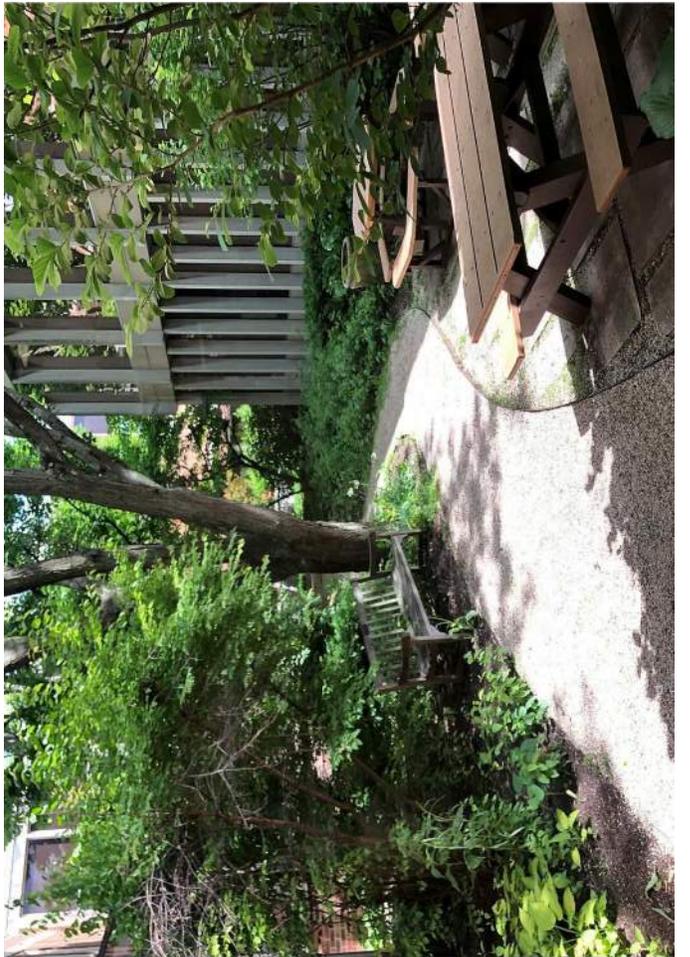
Team Roles

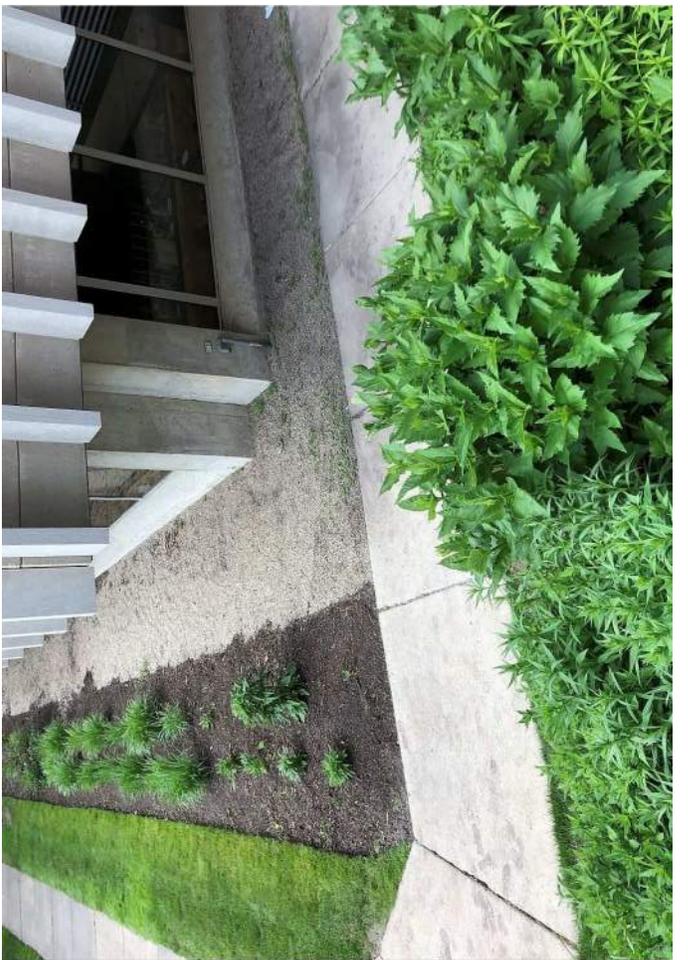
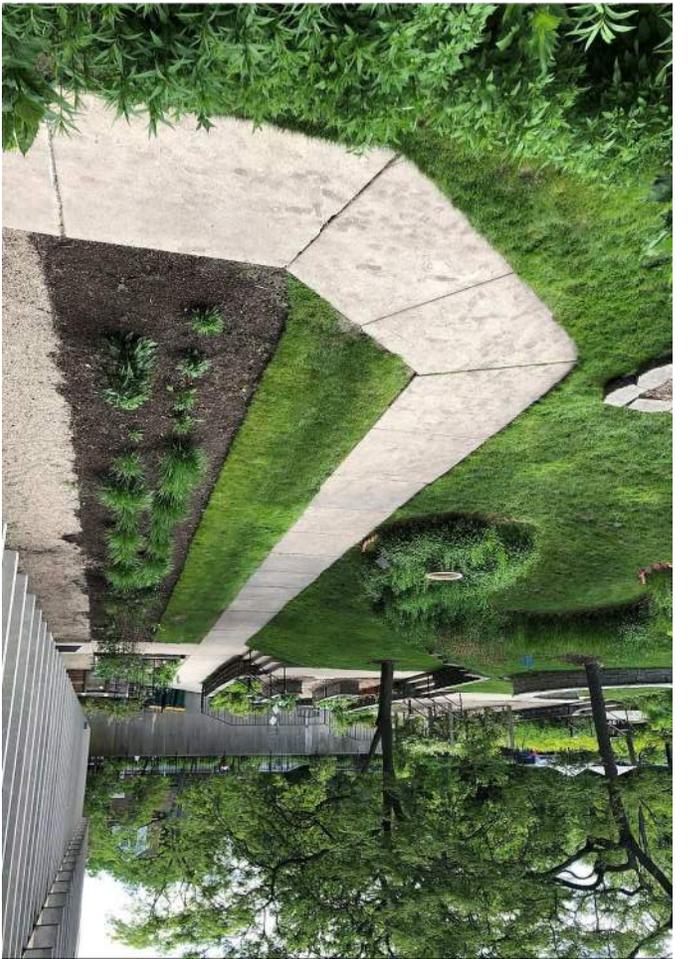
Meeting Facilitator: Katie Nahrwold Note Taker: KN / RD Time Keeper:

Agenda

Agenda Items	Notes
1) School Supply/Other collections/donations	committee to proceed ... who is interested? KN: There are many boxes of "old" Math in Focus materials in the basement. Further into the basement, there are other curricular materials. Looking for ways to donate or recycle these materials. Want to have a system / form in place for keeping track of what is in there and to make sure teachers aren't just dumping materials there.
2) Classroom Compost Update	help promote/support - Katie Team discussed whether teachers will be responsible for bagging and disposing of their compost each day. Want to be sure that teachers are comfortable doing so or can give the duty to a student. Could even be for service points.
3) Lunchroom waste reduction	continued ideas on support and leadership KN has led lessons for Kindergarten students. Interested in getting 6th-8th students involved in the cafeteria for composting help. EL: Students can reach out to advisors for ideas of how to support the school.
4) All school events/meetings, etc. Green Guidelines	Green Guidelines
5) see notes from June on school events/ideas	
6) Sustainability Audit update	KN: Audit is mostly done. KN meeting with CL and Mike Eichhorn tomorrow. Also need to meet to discuss how it will be shared with the Board of Education. Idea is to have action behind this audit. EL: Were there enough responses? KN: Yes, very strong level of response, MQ had energy and utility companies out to talk.

Action Items			
Follow-up Tasks	Person(s) Assigned	Timeline	
1) Meeting dates - AM /after school / days	Katie - every other week / alternate AM/PM	Date:	
2)		Date:	
3)		Date:	
FYI Items			
1)			
2)			
3)			
4)			







Planet Panther
Helpful Tips

Over 1 million marine animals die from plastics each year

#ShedTheStraw

Helpful Tip #1: When ordering a beverage say to the server "No Straws Please!"

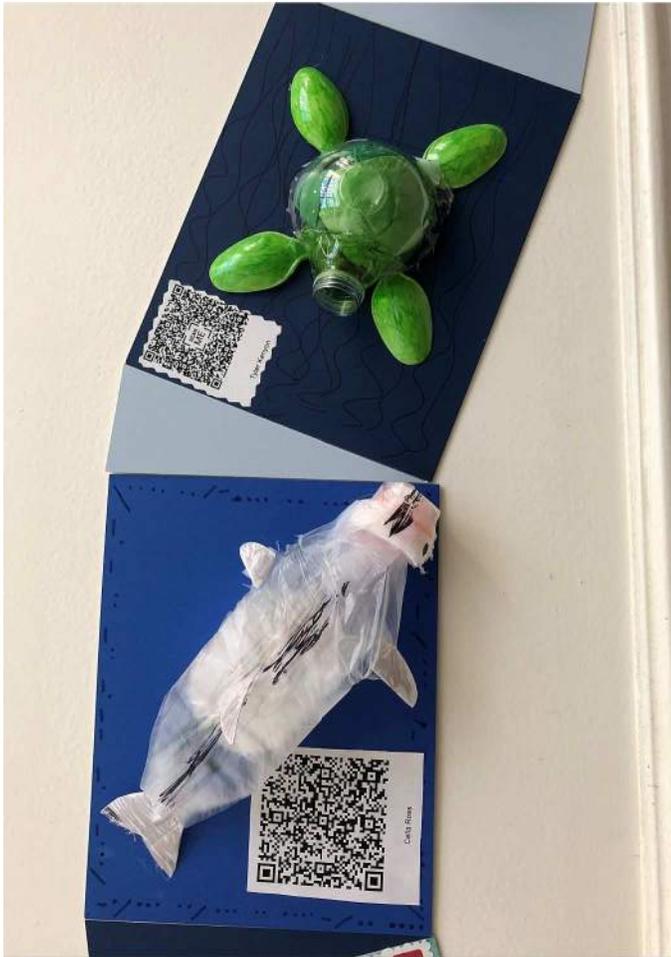
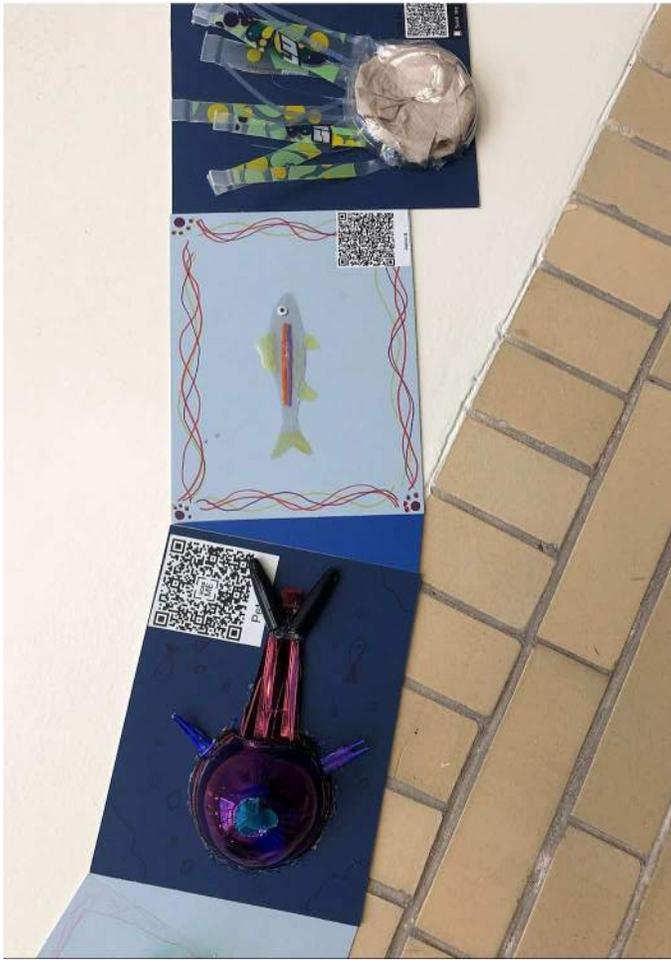
Helpful Tip #2: Talk to local restaurants about getting straws by request only.

Helpful Tip #3: Switch to biodegradable reusable straws!

Straws are available for purchase in the LTC

Reusable







Appendix

-References

-Creating Green Schools

-Managing Air Quality

-Checklists

-Case Studies,

-Approach to Energy
Conservation

PK12 EDUCATION - SUSTAINABILITY AUDIT



GENERAL REFERENCES

References and Standards	Pillars
<ul style="list-style-type: none"> • EPA - Energy Star for Commercial Buildings • Illinois Green Cleaning Act 	Pillar 2
<ul style="list-style-type: none"> • ASHRAE 62 (ventilation for acceptable indoor air quality) • ASHRAE 55 (thermal comfort) • ANSI Standard S12.60 – Classroom Acoustics Guidelines • IESNA Lighting Handbook (lighting quality) 	Pillar 2
<ul style="list-style-type: none"> • USGBC LEED for Schools 2009 	Pillar 1 , 2
<ul style="list-style-type: none"> • USGBC LEED for Existing Buildings O&M 	Pillar 1,2
<ul style="list-style-type: none"> • Collaboration for High Performance Schools (CHPS) 2014 • Collaboration for High Performance Schools (CHPS) 2014 - Best Practices Manual Vol.4 - Maintenance & Operations 	Pillars 1,2,3
<ul style="list-style-type: none"> • ISBE - US Dept of Education Green Ribbon Schools Program 2015 - 3 Pillar Criteria • Civic Engagement: mygreenapple.org 	Pillars 1,2,3
<ul style="list-style-type: none"> • House Joint Resolution 45 - Environmental Literacy for Illinois 2010 - strategic plan; Appendix 7. • Illinois Resource Guide for Healthy and High Performing School Buildings 	Pillars 1,2,3

Collaborative for High Performance Schools (CHPS)

Project Scorecard: US-CHPS Criteria™

School Name:	Project #		
Expected Completion:	Current Phase:		
School District:	Website:		
School Address:	City:	State:	Zip:
School Contact:	Phone:	E-mail:	
Student Capacity:	Notes:		
Approximate Square Feet:			

Verification

Is this the final CHPS Scorecard?

Registered Principal Architect (Signature) _____ Project Manager (Signature) _____

Name, Title, Date (Please print) _____ Name, Title, Date (Please print) _____

Use this scorecard to track expected scores. Note that prerequisites have points associated with them even though they are required. This enables project teams to talk more meaningfully about the effort being put into each section of the Criteria. Prerequisite point columns are also highlighted for reference. Mark each credit as ready for review by using the appropriate column for each phase of the review.

Key: P - Prerequisite; PS - CHPS Plan Sheet Required; CD - Construction Documents Required; A - Attachment Required

Criteria	Title	Prerequisite	Max Possible Pts	Points Targeted	Points Claimed	Responsible Team Member	Design Review Requirements	Ready for Design Review	Construction Review Requirements	Ready for Construction Review	Performance Review Requirements	Ready for Performance Review	Annotation
Total			250										
Integration and Innovation			21										
II 1.0	Integrated Design	P	1				CD			A			
II 1.1	Enhanced Integrated Design		2					A					
II 2.1	District Level Commitment		2					A					
II 3.1	School Master Plan		2					A					
II 4.1	High Performance Transition Plan		1					A		A			
II 5.1	Educational Display		1				CD			A			
II 6.1	Educational Integration		2							A			
II 7.1	Demonstration Area		1				CD			A			
II 8.1	Climate Change Action / Carbon Footprint Reporting		3					A		A			
II 9.1	Crime Prevention Through Environmental Design		2					A		A			
II 10.1	Innovation (CHPS Verified Projects only)		4				VARIES		VARIES				
Indoor Environmental Quality			82										
EQ 1.0	HVAC Design - ASHRAE 62.1	P	7				PS1						
EQ 1.1	Enhanced Filtration		2				PS1	CD			A		
EQ 1.2	Dedicated Outdoor Air System		5				PS1	CD			A		
EQ 2.1	Pollutant and Chemical Source Control		3					CD	A		A		
EQ 3.1	Outdoor Moisture Management		3					CD			A		
EQ 4.1	Ducted Returns		2				PS1	CD					

EQ 5.1	Construction Indoor Air Quality Management		6					PS1	CD					A					
EQ 5.2	(Indoor)Moisture Management		3																
EQ 6.1	Post Construction Indoor Air Quality		1						CD					A					
EQ 7.0	Low Emitting Materials	P	2					PS	CD				PS	A					
EQ 7.1	Additional Low Emitting Materials		6					PS	CD				PS	A					
EQ 8.1	Low Radon		1					PS1	CD					A					
EQ 9.1	Thermal Comfort - ASHRAE 55		4					PS1	CD										
EQ 10.1	Individual Controllability		2						CD					A					
EQ 10.2	Controllability of Systems		1						CD					A					
EQ 11.0	Daylighting: Glare Protection	P	4						CD	A				A					
EQ 11.1	Daylight Availability		5					PS	CD	A				A					
EQ 12.1	Views		3					PS	CD										
EQ 13.1	Electric Lighting Performance		2						CD	A									
EQ 13.2	Superior Electric Lighting Performance		6						CD					A					
EQ 14.0	Acoustical Performance	P	4					PS	CD	A				A			A		
EQ 14.1	Enhanced Acoustical Performance		6					PS	CD	A				A			A		
EQ 15.1	Low-EMF Wiring		2						CD					A					
EQ 15.2	Low-EMF Best Practices		2						CD	A				A					
Energy			Subtotal	63															
EE 1.0	Energy Performance	P	5						CD	A									
EE 1.1	Superior Energy Performance		40						CD	A									
EE 2.1	Zero Net Energy Capable		3																
EE 3.0	Commissioning	P	5						CD	A				A					
EE 3.1	Additional Commissioning Qualifications		1						CD	A				A					
EE 3.2	Building Envelope Commissioning		2						CD	A				A					
EE 4.1	Environmentally Preferable Refrigerants		1																
EE 5.1	Energy Management System		2						CD										
EE 5.2	Advanced Energy Management System and Submetering		2						CD										
EE 6.1	Natural Ventilation & Energy Conservation Interlocks		2					PS	CD					A					
Water			Subtotal	20															
WE 1.1	Minimum Reduction in Indoor Potable Water Use		5																
WE 2.1	Reduce Potable Water Use for Sewage Conveyance		4																
WE 3.1	Irrigation and Exterior Water Budget - Use Reduction		4						CD					A					
WE 4.1	Reduce Potable Water Use for Non-Recreational Landscaping		4						CD	A				A					
WE 5.1	Reduce Potable Water Use for Recreational Landscaping		2						CD					A					
WE 6.1	Irrigation Systems Commissioning		1							A				A					
Sites			Subtotal	24															
SS 1.0	Site Selection	P	3								A								
SS 2.1	Environmentally Sensitive Land		3					PS	CD	A									
SS 3.1	Minimize Site Disturbance		1					PS	CD										
SS 4.1	Construction Site Runoff Control and Sedimentation		1						CD					A					
SS 5.1	Post Construction Stormwater Management		2					PS	CD					A					
SS 6.1	Central location		2					PS		A									
SS 7.1	Located Near Public Transportation		1							A									
SS 8.1	Joint-Use of Facilities		1						CD	A									
SS 9.1	Human-Powered Transportation		2					PS	CD					A					
SS 10.1	Reduce Heat Islands - Landscaping and Sites		2						CD										
SS 11.1	Reduce Heat Islands - Cool Roofs and Green Walls		2						CD					A					
SS 12.1	Avoid Light Pollution and Unnecessary Lighting		2						CD					A					
SS 13.1	School Gardens		1						CD	A				A					
SS 14.1	Use Locally Native Plants for Landscape		1					PS	CD										
Materials and Waste Management			Subtotal	21															
MW 1.0	Storage and Collection of Recyclables	P	2						CD					A					

MW 2.1	Construction Site Waste Management		4						CD			A				
MW 3.1	Single Attribute - Recycled Content		2						CD			PS	A			
MW 4.1	Single Attribute - Rapidly Renewable Materials		1						CD			PS	A			
MW 5.1	Single Attribute - Certified Wood		1						CD			PS	A			
MW 6.1	Single Attribute - Materials Reuse		1						CD			PS	A			
MW 7.1	Multi-Attribute Materials Selection		3					PS	CD			PS	A			
MW 8.1	Building Reuse - Exterior		3						CD			PS	A			
MW 9.1	Building Reuse - Interior		1						CD			PS	A			
MW 10.1	Health Product Related Information Reporting		3						CD			PS	A			
Operations & Metrics			Subtotal	19												
OM 1.0	Facility Staff and Occupant Training	P	2						CD			A				
OM 2.1	Post-Occupancy Transition		2							A			A			
OM 3.0	Performance Benchmarking	P	2							A				A		
OM 4.1	High Performance Operations		5							A				A		
OM 5.1	Systems Maintenance Plan		1										A			
OM 6.1	Indoor Environmental Management Plan		2										A			
OM 7.1	Green Cleaning		2										A		A	
OM 8.1	Integrated Pest Management		1					PS					A			
OM 9.1	Anti-Idling Measures		1							A						
OM 10.1	Green Power		1					PS					A			

Guide to Resources for Green Ribbon Schools Applications

The Center for Green Schools has a library full of free resources to assist project teams in creating, maintaining and documenting best practices in green school facilities. Here, we've pulled out the essential tools you'll need to successfully complete portions of your application for the U.S. Department of Education's Green Ribbon Schools voluntary recognition program. Using the sample state application provided at www2.ed.gov/programs/green-ribbon-schools as a framework, we have linked to relevant, helpful resources below. Be sure to check out the [Center for Green Schools](#) online library for helpful guides, studies, project profiles and more!

Pillar 1: Reduced Environmental Impacts and Costs

Energy

Energy Star Certification

Information Worksheet for the K-12 Space Type, Portfolio Manager [Implementation Workbook](#) p. 56

Non-Transportation Energy Use

[Green Schools Implementation Workbook-](#)

p. 40 - Sample Building Operating Plan

p. 45 Energy Efficiency Improvements and Annual Savings

[Green Existing Schools Web Trainings: Materials and Sustainable Purchasing](#)

Energy Consumption

[Green Existing Schools Web Trainings: Energy Management](#)

New construction or major renovation

[LEED for Schools Rating System](#)

[LEED for Existing Building Operations & Maintenance Rating System](#)

Water and Grounds

Water Consumption

Water-Use Performance Calculations – Data Collection Worksheet [Implementation Workbook](#) p.30

Water Fixture Performance Calculations Worksheet [Project Management Guide](#) p.E-3

[Green Existing Schools Web Trainings: Water Management](#)

Outdoor Landscapes

Sample Integrated Pest Management, Erosion Control and Landscape Management Plan [Implementation Workbook](#) p.17

[Green Existing Schools Web Trainings: Groundskeeping](#)

Stormwater Runoff Efforts

Stormwater Quantity Control - Data Collection Worksheet [Implementation Workbook](#) p. 24

Waste

Waste diverted from the landfill

Guidance for Solid Waste Management Policy [Implementation Workbook](#) p.70

[Green Existing Schools Web Trainings: Recycling and Waste Management](#)

Post Consumer Paper Content by Cost

Guidance for Environmentally Preferable Purchasing Policy [Implementation Workbook](#) p.67

Hazard Waste Monitoring, Management, Storage and Disposal

Guidance for Resources and Implementation [Implementation Workbook](#) p.91

Green Cleaning

[Green Existing Schools Web Trainings: Green Cleaning](#)

Alternative transportation

Student Walkers, Bikers, Bus riders and Carpoolers

Sample Commute Survey for Staff and Faculty [Implementation Workbook](#) p.21

Efficient school transportation

[Green Existing School Web Trainings: Transportation](#)

Additional efforts to reduce environmental impact

[LEED for Existing Buildings: Operations and Maintenance](#)

Pillar 2: Improve the health and wellness of students and staff

Environmental Health

Pesticide Use and Reduction Efforts

Sample Integrated Pest Management, Erosion Control, and Landscape Managements Plan [Implementation Workbook](#) p. 17

Sample Indoor Integrated Pest Management Plan [Implementation Workbook](#) p.98

Hazardous Contaminants

Guidance for Purchasing Plan p.69 [Implementation Workbook](#)

Chemical Management

Guidance for Green Cleaning Policy [Implementation Workbook](#) p.74

Sample High Performance Cleaning Program [Implementation Workbook](#) p.91

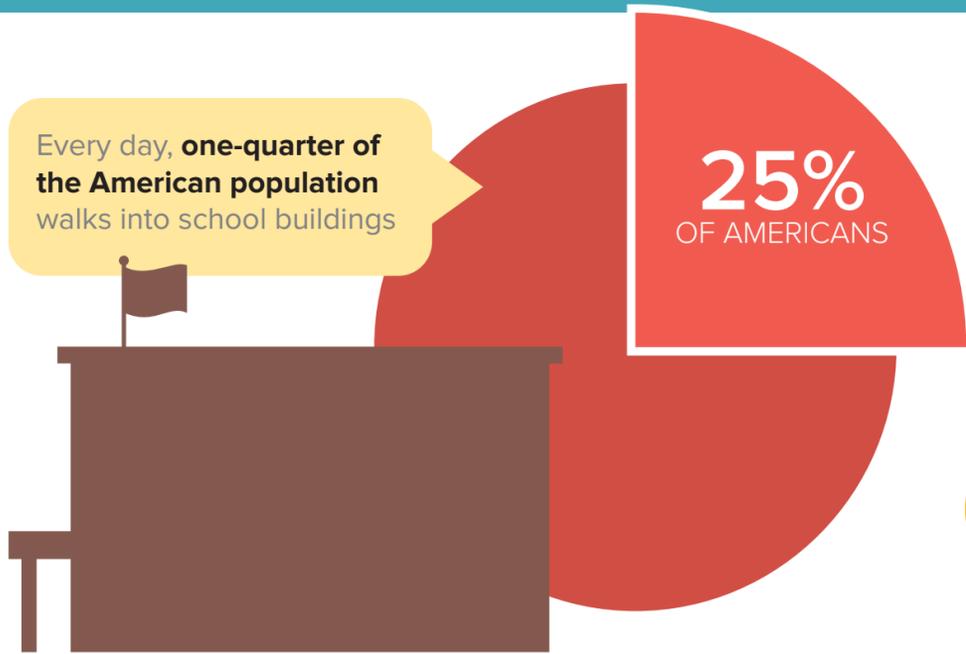
Indoor Air Quality

Sample IAQ Management Plan [Implementation Workbook](#) p.76

[Green Existing Schools Web Modules: Indoor Environmental Quality](#)

AMERICA'S COMMITMENT TO GREEN SCHOOL BUILDINGS

Many of today's schools are beset by a host of challenges that compromise our children's health and wellness, causing everything from asthma to headaches and concentration issues.



TENS OF THOUSANDS OF THESE SCHOOLS ARE IN **DESPERATE NEED OF REPAIR**

BURDENED WITH:



airborne toxins

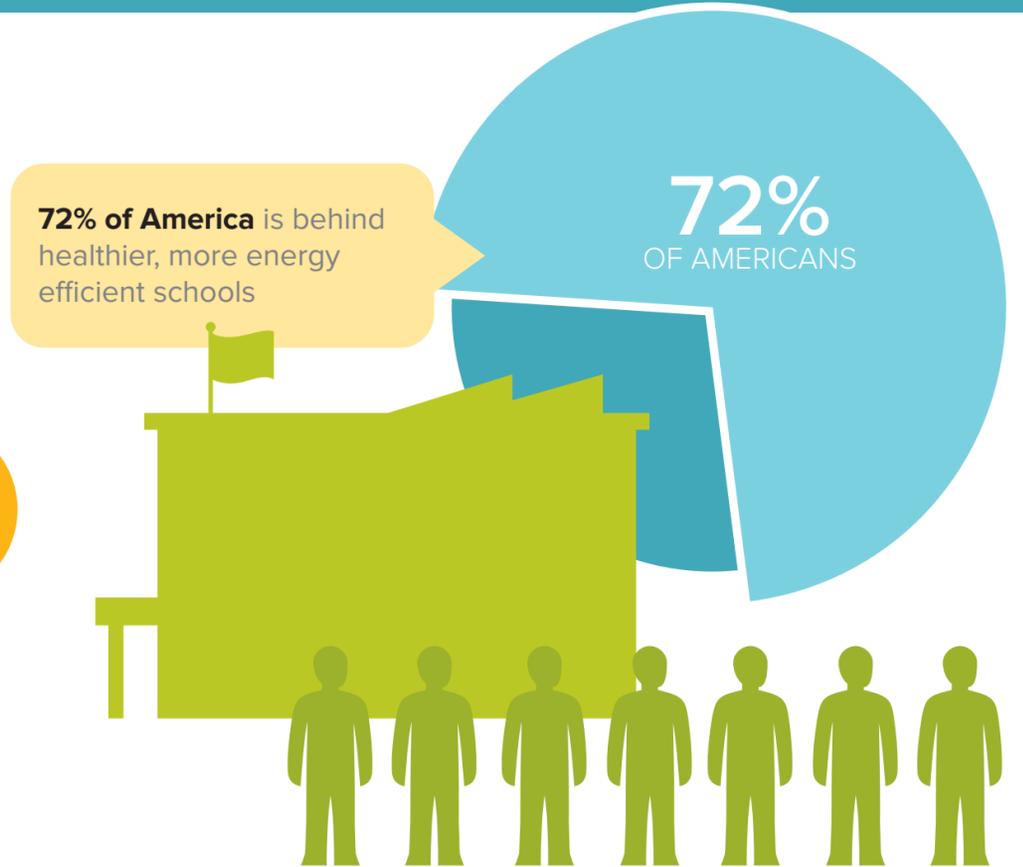


dwindling budgets



outdated resources

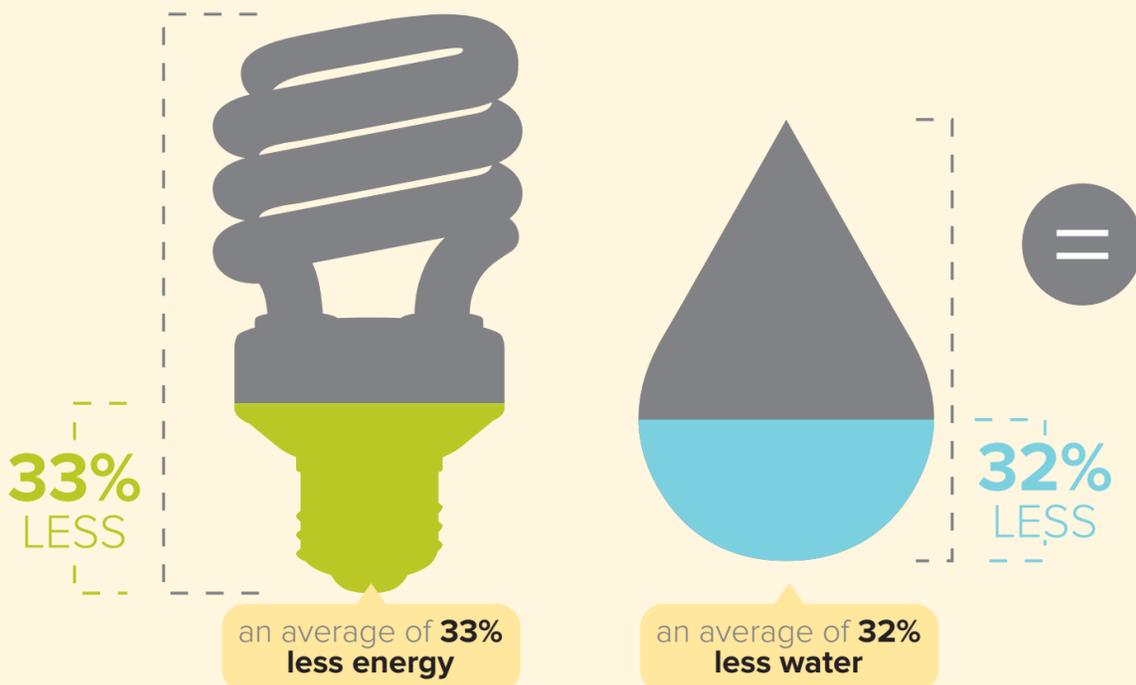
BUT



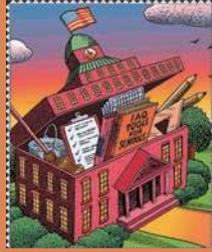
700 MILLION STUDENTS
IN A SCHOOL BUILDING EVERY DAY WORLD WIDE

THE BENEFITS OF HEALTHY, MORE SUSTAINABLE SCHOOL BUILDINGS

GREEN SCHOOLS USE LESS ENERGY AND EMIT LESS CO₂ THAN CONVENTIONALLY DESIGNED SCHOOLS



ON AVERAGE, GREEN SCHOOLS **SAVE \$100,000 PER YEAR** ON OPERATING EXPENSES



Managing Asthma in the School Environment

Indoor Air Quality Tools for Schools





LOCAL GOVERNMENT CLIMATE AND ENERGY STRATEGY SERIES

Energy Efficiency Programs in K-12 Schools

A Guide to Developing and Implementing Greenhouse Gas Reduction Programs



Energy Efficiency

ENERGY STAR LEADERS IN K-12 SCHOOLS

School districts that are ENERGY STAR partners and demonstrate continuous improvement in energy performance organization-wide, not just in individual buildings, qualify for recognition as ENERGY STAR Leaders. Based on results tracked in Portfolio Manager, ENERGY STAR Leader recognition is provided for achieving portfolio-wide energy efficiency improvements of 10%, 20%, and 30% (or more) in normalized energy use. ENERGY STAR Leaders who also achieve an average score in Portfolio Manager of 75 or better portfolio-wide are recognized as Top Performers (U.S. EPA, 2009i).



Nash-Rocky Mount School District in Nashville, North Carolina, initially committed to reducing energy costs across its portfolio of 29 facilities in 2004. By implementing portfolio-wide comprehensive energy upgrades—which involved partnering with the state energy office, ESCOs, and energy efficiency service providers—the school district was able to improve energy efficiency by 20 percent in 2006. In 2008 the school district was recognized as an ENERGY STAR Top Performer for achieving a portfolio-wide average score of 75 on EPA’s national energy performance scale. Between September 2004 and August 2007, the school district saved a total of \$3.1 million (Nash-Rocky Mount, 2008). Over 3.5 years, the district reduced overall energy use by 28 percent, decreasing CO₂ emissions by more than 18,600 tons, equivalent to the annual emissions of 3,000 cars (Southface, 2009). The district received an ENERGY STAR Partner of the Year award in March 2009.

Energy Efficiency in Green School Buildings

Many school districts have found that the processes of planning, designing, and constructing new and renovated energy-efficient school buildings—as described in the preceding section—offer opportunities to integrate energy efficiency with other green features

(e.g., use of renewable energy supplies and sustainable site selection). These features can provide additional environmental, economic, and health benefits. In addition to enhancing a school building’s environmental profile (e.g., through reduced GHG emissions), school districts have found that incorporating energy efficiency can improve the cost effectiveness of green school buildings. Because of this, energy efficiency is often considered first in green school building design, and has become the cornerstone of many school district green building programs.

GREEN BUILDINGS

Many terms are used to describe buildings that incorporate energy efficiency and other environmental features, including “green buildings,” “high-performance buildings,” and “sustainable buildings.” Regardless of the definitions, there is often a public perception that energy efficiency and “green” are interchangeable, and that green buildings are energy efficient. However, this is not always the case. Some “green” buildings do not adequately incorporate energy efficiency.

This section uses the term “green building” as an all-encompassing description of buildings that incorporate energy efficiency *plus* other energy and environmental features where cost-effective and practical, including:

- Renewable energy supply
- Combined heat and power (CHP)
- Sustainable site design that minimizes stress on the local landscape
- Water efficiency and quality
- Green materials and resources that minimize consumption and waste
- Indoor environmental quality

BENEFITS OF GREEN BUILDINGS

By incorporating energy efficiency into green school buildings and green school building policies, school districts can achieve all the energy efficiency benefits described in Section 2, *Benefits of Energy Efficiency in K-12 Schools*. In particular, the reduced energy costs associated with incorporating energy efficiency in green school buildings can help districts achieve overall cost effectiveness in green building design (U.S. EPA, 2008o; U.S. EPA, 2006b).

Green buildings can provide several additional environmental benefits, including:

- Lower GHG emissions
- Reduced construction/demolition debris
- Ecosystem protection
- Natural resources conservation

RECYCLING—ENERGY RELATIONSHIP

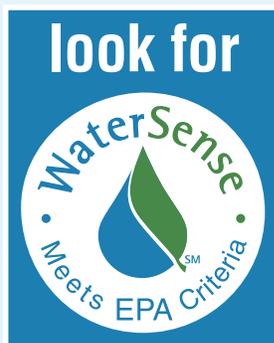
- Recycling 1 pound of steel saves 5,450 Btu of energy, enough to light a 60-watt bulb for more than 26 hours.
- Recycling 1 ton of glass saves the equivalent of nine gallons of fuel oil.
- Recycling aluminum cans requires only 5% of the energy needed to produce aluminum from bauxite. Recycling just one can saves enough electricity to light a 100-watt bulb for 3.5 hours.

Source: Pennsylvania, 2007.

EPA WATERSENSE LABEL

The EPA WaterSense Program label is for products that are independently tested to meet water efficiency and performance criteria. Labeling criteria have been established for plumbing fixtures (toilets, faucets, showerheads, and urinals), new homes, and training programs for irrigation professionals. In general, products that receive the WaterSense label are 20% more water-efficient than conventional products. In addition to conserving water, these products can reduce the amount of energy required to deliver and treat water.

Source: U.S. EPA, 2007c.



Some green building environmental features can also have secondary energy-saving benefits. For example, many green school buildings incorporate water efficiency measures that reduce water heating energy consumption while conserving a natural resource (U.S. EPA, 2008s). The actual benefits of green buildings depend on the environmental features incorporated into the designs, which can depend on the green building rating system followed (e.g., CHPS, LEED, Green Globes) and whether the building operates as designed. The text box above provides information on the potential financial benefits of building green schools.

FINANCIAL BENEFITS OF GREEN SCHOOLS

Green school buildings generate substantial energy, environmental, and health-related benefits. A Capital E study estimated the savings resulting from green building design measures in 30 school buildings built in 10 states in 2001–2006. The table below shows the average financial benefits of these green school buildings by specific building attributes.

Energy	\$ 9
Emissions	\$ 1
Water and Wastewater	\$ 1
Increased Earnings	\$ 49
Asthma Reduction	\$ 3
Cold and Flu Reduction	\$ 5
Teacher Retention	\$ 4
Employment Impact	\$ 2
TOTAL	\$ 74
COST OF GREENING	(\$ 3)
NET FINANCIAL BENEFITS	\$ 71

“Increased Earnings” refers to the higher salaries that graduates of green schools are projected to earn due to the higher average learning rates and test scores associated with green school buildings

Source: Capital E, 2006.

PLANNING AND DESIGN APPROACH FOR INCORPORATING ENERGY EFFICIENCY IN GREEN BUILDINGS

When planning and designing green school buildings, school districts can follow the steps outlined in the preceding section on improving energy efficiency in school buildings. Incorporating energy efficiency into green school buildings can also involve the following actions:

- **Ensure that energy efficiency is specifically included in green building policies.** Energy efficiency is a critical element of green building and is a key feature of the design process. School districts have found that requiring a combination of energy performance tools and green building approaches from the onset can ensure that new and renovated school buildings meet both energy performance and environmental criteria. An increasingly common strategy is to use EPA's ENERGY STAR platform in conjunction with the U.S. Green Building Council's (U.S. GBC) Leadership in Energy and Environmental Design (LEED) rating system for green building design. For more information on incorporating energy efficiency in green building policies, see the text box on page 21.



The Fossil Ridge High School in Fort Collins, Colorado, was designed to meet the Silver standard on the LEED rating system in 2004. To ensure optimal energy performance, the school was designated “Designed to Earn the ENERGY STAR” using Target Finder.

- **Use energy efficiency investments to reduce the cost of using renewable energy sources.** Many school districts are improving the environmental profile of their green school buildings by incorporating on-site renewable energy generation systems into building designs. These systems, however, can have a high upfront cost. Many school districts have found that reducing energy consumption in green school buildings through energy efficiency allows them to meet their renewable energy goals with smaller and less expensive generation systems. In addition, the energy cost savings from energy efficiency investments can offset the cost premiums of using renewable energy sources. For more information on using renewable energy sources, see EPA's *On-site Renewable Energy*

Generation guide in the *Local Government Climate and Energy Strategy Series*.

GREEN BUILDING AND ENERGY STAR

When upgrading existing buildings or designing new buildings, local governments are looking to green building certification programs such as the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) rating system and the Green Globes rating system. These systems standardize the elements of green building by conferring design certification based on requirements for (1) energy and atmosphere, (2) site sustainability, (3) water efficiency, (4) materials and resources, (5) indoor air quality, and (6) innovative design process.

Depending on the rating system, it can be important to add requirements for energy performance, such as achieving EPA's ENERGY STAR program levels. It is also important to require third-party verification, which is required to earn the ENERGY STAR label on commercial buildings

Source: LEED, 2005; U.S. EPA, 2008o.

ENERGY-EFFICIENT DESIGN VERSUS PERFORMANCE

While using design standards can be helpful for implementing energy efficiency measures in new and renovated buildings, not all design standards guarantee energy-efficient performance. For instance, facilities designed to exceed building energy codes will not necessarily achieve superior energy efficiency because codes prescribe minimum design criteria for certain facility components, but do not predict whole building energy performance. Studies have shown that exceeding building codes is not a guarantee of future energy performance.

Source: U.S. EPA, 2006.

- **Include requirements for third-party verification of energy performance.** Third-party verification is an important step toward ensuring that green buildings are energy-efficient. While some green building certification only considers a building's design, third-party verification of energy performance can determine whether a building is performing as intended. School

INCORPORATING ENERGY EFFICIENCY INTO LEED GREEN SCHOOL BUILDING POLICIES

Energy efficiency can be incorporated into green school building policies in a variety of ways. Many school districts have adopted the LEED for Schools rating system. School districts can take the following steps to incorporate energy efficiency into their LEED green building policies:

- **Target Energy Performance.** Require design teams to meet aggressive energy performance targets based on the most energy-efficient existing buildings in the market. For building types covered by EPA's ENERGY STAR Target Finder, the target should be at least 75, the level at which a building is "Designed to Earn the ENERGY STAR." See Develop Whole Building Performance Targets under Step 4 in *Planning and Design Approaches for Energy Efficiency in K-12 Schools* for more detailed guidance and strategies for building types not covered by Target Finder. Design projects applying for LEED for Schools certification must establish an Energy Performance score goal using Target Finder as part of Energy & Atmosphere Prerequisite 2. The Statement of Energy Design Intent (SEDI), generated from Target Finder, documents the energy use goal.
- **Achieve Energy-Related Credits.** Strive to achieve the greatest possible quantity of credits in the LEED Energy and Atmosphere credit category.
- **Track Results and Strive to Earn the ENERGY STAR.** Compare the building's actual performance to the energy target used during the design phase and confirm that it is eligible for the ENERGY STAR once it has been operating for 1 year. EPA's Portfolio Manager enables users to track energy consumption, and certain building types are eligible to receive an ENERGY STAR score, similar to the score generated in Target Finder, for actual energy performance. Any building type, such as a school, that is eligible for a score must earn a minimum score of 69 in Portfolio Manager to apply for LEED for Existing Buildings: Operations & Maintenance (LEED-EB: O&M) certification. A summary of energy use, such as the Statement of Energy Performance (SEP) generated in Portfolio Manager and verified by a professional engineer, must be submitted along with other documentation to demonstrate compliance through at least 12 months of energy performance. Buildings that receive a 75 or better are eligible to receive the ENERGY STAR.

Source: U.S. GBC, 2007.

districts can include provisions in their green building policies requiring third-party verification to confirm that, once operational, school buildings meet the energy performance targets established during the planning and design phases. School districts can obtain third-party verification from a number of sources, including ESCOs and energy service providers.⁹ In addition, the ENERGY STAR Statement of Energy Performance that is generated from Portfolio Manager can verify energy efficiency results. School data can be verified by a professional engineer.

▪ Consider conducting a demonstration project.

When resources and/or support for implementing a green building policy are limited, school districts can develop a single green school building to serve as a demonstration project. These projects can be used to showcase the energy efficiency and environmental benefits of green buildings, while helping to make the case for implementing a portfolio-wide green building approach as additional support and/or resources become available.

4. KEY PARTICIPANTS

School districts often involve a number of participants when planning and implementing energy efficiency activities in K-12 school buildings, including:

- **Mayor or county executives.** Many local government executives have been influential in improving energy efficiency in K-12 school buildings in their communities. In a number of local governments, mayors have adopted energy efficiency policies encompassing all public facilities, including school buildings. A number of mayors have joined the Mayors' Alliance for Green Schools to increase awareness of opportunities for energy efficiency and other environmental features in school buildings (U.S. GBC, 2008).
- **City or county councils.** City and county councils often have a close working relationship with school districts, particularly the school superintendent. In many localities, the city or county council has worked with the superintendent to initiate energy efficiency programs across school districts.
- **Local government agencies.** School districts can obtain technical and informational assistance from

⁹ See http://www.energystar.gov/index.cfm?c=spp_res.pt_spps for a directory of energy service and product providers.



AUGUST NEWSLETTER

The Zero Waste Schools newsletter will help you get your school on a path toward generating zero waste through waste prevention, recycling, composting, and food recovery. You'll also find resources that connect zero waste to healthy eating, school gardens, and environmental education and action.

Feel free to share the newsletter with friends, colleagues, and students who are interested in zero waste.

[Sign up for ZWS news](#)

Back-to-school zero waste guide



Fall is a busy time as parents, teachers, and children prepare for a new school year. Back-to-school is an appropriate time to gather school items that promote environmental sustainability and save you money. Working together to incorporate zero waste can be simple and fun, too. Start your school year off right with SGA's [Back to School Supplies: A Zero Waste Guide](#).

We Compost Recognition

Is your school reducing its waste by composting?

Get recognized for your efforts with [We Compost](#), a free recognition program of the Illinois Food Scrap Coalition (IFSC) that promotes K-12 schools, universities, businesses, and others that participate in a commercial compost program or compost onsite.



There are three levels (Gold, Silver, and Green) depending on how you compost, and it's an easy application form.

We Compost schools receive the following:

- Window decal of the We Compost logo
- We Compost icon to add to your website
- Listing on IFSC website including your logo, street address, and website link
- Inclusion on a Google map of all We Compost partners, and more.

Register for the Illinois Great Apple Crunch

Save the Date!

ILLINOIS GREAT APPLE CRUNCH



Thursday, October 10, 2019

The Illinois Great Apple Crunch is a daylong celebration of fresh, local apples. The Illinois Crunch is a part of the Great Lakes Great Apple Crunch celebrated across the Midwest. In Illinois, participants join children and adults from across the Great Lakes region in Indiana, Michigan, Minnesota, Ohio, and Wisconsin in celebrating National Farm to School Month by crunching into locally and regionally grown apples at noon on the second Thursday of October.

Crunch day involves schools, early child care sites, hospitals, colleges, community organizations, after-school and residential programs and more. Let's continue to make Illinois the loudest Crunch in the region!

Register [HERE](#) for this year's Crunch that will take place on Oct. 10.

Ray Elementary School and former Gov. Pat Quinn join forces to ban polystyrene

As part of their Pilot Light Food Advocacy Project, Ray Elementary School's 6th graders proposed a Chicago city-wide ban on restaurant usage of polystyrene. Students developed a petition, wrote letters, and spoke at city hall to advocate for the banning of polystyrene. Former governor Pat Quinn met with the students and encouraged their activism and enthusiasm.

Read more [HERE](#).

Greta Thunberg continues to fight for climate action

Climate activist **Greta Thunberg** will travel to the United States via a zero-emissions racing boat to speak at United Nations climate summits and attend environmental protests. After sparking the worldwide school strike climate protests, Greta now sets her sights on reaching a new audience on the UN stage, where world leaders will be in attendance. Learn more about Greta [HERE](#):

- [Climate Activist Greta Thunberg Calls For Systemic Action](#) (WBEZ)
- [Greta Thunberg to sail across Atlantic for UN climate summits](#) (The Guardian)
- ['Biggest compliment yet': Greta Thunberg welcomes oil chief's 'greatest threat' label](#) (The Guardian)

Green Schools Catalyst Quarterly

In case you missed it: Here's the [June 2019 edition](#) of the Green Schools Catalyst Quarterly, which focuses on "Purposeful Learning: The intersection of Place-, Project-, and Problem-Based Learning."



Center for Green Schools: School District Scholarship

The [Center for Green Schools](#) at USGBC is now accepting applications for the 2019–2020 School District Scholarship. The scholarship will provide peer-to-peer connections, professional development, targeted education, and technical support for staff members who are working in sustainability across their districts.

Who can apply? The scholarship is available to school systems of all sizes, but to qualify, school districts must have a current staff person who spends a minimum of 50 percent of their time on sustainability-related efforts.

Deadline: The application is open through Aug. 12.

Learn more and apply [HERE](#).

Grant Opportunities

[Illinois Schoolyard Habitat Action Grant:](#) Projects for this Illinois Department of Natural Resources grant must emphasize student involvement and increase the educational and wildlife habitat values of the site. The applicant must be prepared to maintain and commit resources to the project for at least five years. The project must be implemented on school grounds or another public place (for example, a park or nature center/forest preserve district land). Preliminary application deadline is Oct. 31.

[Illinois Biodiversity Field Trip Grant:](#) Teachers of grades PreK–12 in Illinois, including home-schooling teachers, may apply to this Illinois Department of Natural Resources grant program to receive funding for natural resources-related field trips. Funding priority is given to single-day, outdoor field trips. Application deadline is Jan. 31, 2020.

[CHS Foundation Classroom Grant:](#) CHS Foundation provides \$500 grants each year to PreK–12 teachers who have classroom projects that use agricultural concepts to teach reading, writing, math, science, social studies and more. The deadline for applications is Sept. 15.

[Illinois Agriculture in the Classroom](#) offers two grants:

- Teacher Project Grants provide up to \$300 to PreK–12th grade teachers for projects that promote agricultural literacy in the classroom. Application deadline is Oct. 11.
- Teacher Book Grants provide up to \$250 in books from a pre-selected list of titles to help teachers integrate agriculture into a variety of curriculum areas. Application deadline is Oct. 11.

Seven Generations Ahead is hiring!



SGA is hiring for the position of Sustainability Program Associate. The entry-level position will provide support across a variety of SGA projects and programs, including Zero Waste Schools. Learn more about the job and how to apply [HERE](#).

Support Zero Waste Schools

Do you value the work of Seven Generations Ahead and our Zero Waste Schools Program? Your support will help us help more schools. Here are two easy ways to give:

- **[Amazon Smile:](#)** Choose SGA as your charity of choice and Amazon will donate a portion of your purchase to support our programs.



- Give a monetary gift to SGA via our [donate page](#).

Events



Canoe and Clean Ups

One Saturday each month, June 29–Oct. 31
Enjoy the Chicago River with Friends, and make the river cleaner while you're at it. Friends of the Chicago River provides the canoes, the equipment, and the know-how. Cost \$10.



Great Lakes Action Days

Various locations & dates
Join a Great Lakes Action Day organized by the Shedd Aquarium to give back to the wild places in your backyard.



Brandon's Basics: Bike Mechanics Orientation

First Saturday of every month, 11 am–12 pm
Chicago, IL
A great introduction for volunteers who want to learn about bicycle mechanics.
Free and open to everyone.
Working Bikes gives donated bicycles new life by redistributing them as tools of empowerment in local and global communities.



K-12 Environmental Education: Guidelines for Excellence Workshop

Oct. 26, 9 am – 4 pm
Springfield, IL
Participants in this one-day workshop will learn how to apply the North American Association for Environmental Education's publication *K-12 Environmental Education: Guidelines for Excellence*, a roadmap to achieving environmental literacy.

Do you have feedback for Zero Waste Schools?

Contact us with feedback, recommendations, stories to include, and more at zerowaste@sevengenerationsahead.org

Seven Generations Ahead | 708.660.9909 | [Email](#) | [Website](#)

STAY CONNECTED



This newsletter was created by Seven Generations Ahead. Funding for Zero Waste Schools is provided by Peoples Gas, North Shore Gas, and Food:Land:Opportunity, a collaboration between Kinship Foundation and The Chicago Community Trust and funded through the Searle Funds at The Chicago Community Trust.

Green school buildings are better for teachers and students

Published on: 1 Jul 2018



Green school buildings create an environment where students and teachers are more comfortable, less prone to illness and more focused on teaching and learning. The quality of school facilities is often overlooked as a major factor in students' scholastic performance. However, school buildings are not only the setting for learning—they can also help or hinder the learning process.

Green schools improve health, wellness and academic performance.

The information below provides a brief overview of existing research related to health and the learning environment. A more thorough review can be found either in the Center for Green Schools' 2012 paper, *The Impact of School Buildings on Student Health and Performance*, or in the 2016 report from Harvard T.H. Chan School of Public Health, *Schools for Health*.

- **Exposure to toxins:** Known toxins have no place in schools, where contact with young children can cause serious consequences. Recently, attention has been drawn to lead and other heavy metal contamination in drinking water, and several states have now adopted laws to require schools to test their drinking water sources. Additionally, many chemicals found in pesticides and cleaning products are not safe for inhalation or skin contact and can be particularly harmful to children. Green schools are those that implement practices to reduce risk for students and teachers, such as using green cleaning, integrated pest management and green purchasing. The Green Classroom Professional Certificate course has more information about these programs in schools.
- **Indoor air quality:** Students in America miss almost 14 million school days per year because of asthma. Additionally, teachers report the highest percentage of work-related asthma cases in the U.S., compared to other non-industrial occupations. The U.S. Environmental Protection Agency (EPA) estimates that more than 60,000 schools, or 46 percent of U.S. public schools, have environmental conditions that contribute to poor indoor environmental quality, including allergens from cockroaches, rodents, dust mites and fungi, as well as respiratory irritants from sources of formaldehyde, volatile organic compounds and nitrogen dioxide.

Studies have found relationships between lower ventilation rates and increased missed school days due to respiratory infections, increased incidence of sick building syndrome and increased school nurse visits for respiratory symptoms. Moreover, improving environmental air quality promotes teacher well-being. In a survey of 500 teachers in New York State, more than 10 percent reported negative impacts on their ability to teach effectively due to headaches, drowsiness, eye and throat irritation, congestion and other symptoms caused by dust reservoirs, moisture problems and other irritants.

By improving indoor air quality, green schools can improve the health of students, faculty and staff, potentially decreasing sick days. Beyond the positive impacts of keeping students and teachers in school, indoor air quality also has direct effects on student achievement. In one study, students in schools that were unable to meet a minimum ventilation rate had a greater likelihood of performing

poorly on math exams. Researchers found that task speed increased significantly in students ages 10–12 when outdoor air supply rates (more fresh air) were increased.

- **Acoustics:** Optimizing classroom acoustics so that children can hear is fundamental for learning. Many studies confirm the importance of low background noise level and better speech intelligibility in maintaining appropriate acoustic conditions for student learning. Research shows that the development of memory, attention and other cognitive processes in students occurs slowly and can be sensitive to chronic noise exposure. Since 2014, more than 20 studies have shown a negative relationship between environmental noise exposure and children’s learning outcomes and cognitive performance. A green school provides an environment to lessen distractions and encourages participation by incorporating features such as high-quality acoustical ceiling tiles, lined ductwork and heating and cooling systems with appropriately placed vents designed to lower background noise in the classroom.
- **Thermal comfort:** Comfortable indoor temperatures enhance productivity and keep students more alert. In a 2016 study examining high-stakes test scores for 75,000 students in New York City, researchers found that for every 1 degree Fahrenheit increase in temperature, test scores fell by 0.2 percent. Though seemingly small, the results mean that the likelihood of a student failing an exam is 12.3 percent higher on a 90-degree day than a 75-degree day. Another study found that maintaining adequate ventilation and thermal comfort could raise a test score from average to “commended performance.”
- **Daylighting:** When deprived of natural light, studies have shown that children’s melatonin cycles are disrupted, likely having an impact on their alertness during school. One 2013 study analyzing data from over 21,000 students found a significant positive relationship between classrooms with daylighting and better test scores and student performance. Daylight also plays a critical role in the behavioral development of young students. A 2014 study that assessed daylight in preschools found a significant relationship between student social behaviors and classroom daylight conditions. This study also found a strong relationship between cognitive skill improvements and classroom daylight conditions.

Skylights and large windows allow daylight into green schools, which improves student wellness and academic performance.

- **Access to nature:** A broad base of research has demonstrated a multitude of benefits in ensuring that young people have access to nature. The Children and Nature Network has compiled a research library to explore this depth of information on connections to behavior, academic, wellness, community and other positive outcomes. Green buildings are those that provide green space and views to the outdoors for those inside. Additionally, green schoolyards, nature-based play and meaningful experiences in nature are foundational to a green school.

Retaining teachers saves money

A 2010 report by the National Commission on Teaching and America's Future estimated that the nation's school districts spent at least \$7.2 billion a year on teacher turnover. Increasing teacher retention helps to lower a school district's personnel replacement, recruitment and training costs. In a 2017 study from the American Federation of Teachers, poor building conditions were cited as one reason teachers chose to leave. Better, greener buildings can ease many of the other stressors inherent in the teaching profession. One powerful example of teacher retention comes from Great Seneca Creek Elementary School (LEED Gold) in Germantown, Maryland, which was the first LEED-certified green school in the state. Within two years of opening, the school saw zero teacher turnover.

Green schools provide opportunities for experiential learning

Not to be overlooked is the opportunity for green buildings to serve as teaching tools that provide real-life examples of concepts being learned in the classroom. Teachers at green schools can use their buildings as the basis for project-based, experiential learning. Green schools provide a clear opportunity to connect students with curricula in environmental and science, technology, engineering and mathematics (STEM) education, and they can serve as tools for interactive lessons across all subjects.

For example, math students can track and chart utility cost savings, science students can analyze and compare the difference between eco-friendly and traditional cleaning products, and humanities students can debate the impacts communities have on their environments. Every student can benefit from the opportunity for hands-on learning that demonstrates the interconnectedness of people, the built environment and natural systems.

The Center for Green Schools has gathered over a dozen partners to provide curriculum units that give teachers what they need to bring green school concepts into the classroom. Find all of the collected content on the Learning Lab platform and keep an eye on the ever-growing offerings there.

Sign up for email

Enter your email address *

SIGN UP

Program Sites

Green Apple Day of Service
Green Schools Conference & Expo
Learning Lab
LEED Lab

Featured Resources

Project Ideas

Making the Most of Your Day of Action

To be a Green Apple Day of Service, your project should make a sustainable impact at a school in a way that directly and positively affects the students. Green Apple projects meet this goal by: measuring the school's environmental impact, educating the school community on sustainability, improving sustainability at the school, and/or celebrating the success of the school's efforts.

Many types of projects can have a positive impact at your school. If you're looking for an in-depth, data driven approach to your Green Apple Day of Service project, the Center for Green Schools' **Building Learners Program** engages every member of the school community in measuring, educating, improving, and celebrating a school's sustainability.

Get Started with Building Learners

Or implement one of these projects this school year

Measure



Assess Indoor Air



Assess School Lighting

Educate



Educate for Environmental and Sustainability Literacy



Fun with Fitness in the Neighborhood



Host a Sustainability Debate with

Students
Cookies Statement



Speed Greening for Sustainability Literacy

Accept and Close



You Are What You Eat

Improve



Clear Out The Clutter



Create or Tend a School Garden



Promote Sustainable School Transportation



Put Rainwater to Use



Raise Awareness of Outdoor Air Risks



Reduce Energy Use



Reduce Water Use



Reduce, Reuse, Recycle!



Train Custodians on Green Cleaning

Celebrate



Celebrate Success



Communicate Your School's Sustainability Values

Check out this list of 99 Green Apple Day of Service project ideas you can do anytime, any day.

Accept and Close

Tweets by @mygreenschools

were honored on Sept. 25 at an official award ceremony by the U.S. Department of Education and at a reception on Capitol Hill, hosted by the Center for Green Schools! bit.ly/2n9qIM8



Sep 30, 2019

CtrForGreenSchools Retweeted

Green Schools C&E @greenschoolscon

We had to post both of them... obviously! Hats off to our #GSCE20 Program Working Group -- hard at work to deliver a stellar program to the public within the next couple of weeks. Stay tuned! greenschoolsconference.org



Oct 4, 2019

CtrForGreenSchools @mygreenschools

Since 2010, the Rochester School building in Chia, Colombia, has demonstrated the importance of providing a school's community with a living example of the importance of providing a school's community with a living example of a commitment to sustainability. This #LEED Gold school is community of sustainability-minded citizens. bit.ly/2LJBx1e



Embed View on Twitter

At Wold, we believe that the key to success for a project is a coordinated effort between the architect and the mechanical/electrical engineering consultants. We have developed in-house engineering to facilitate coordination and provide the highest quality service for our clients. As with any successful team effort, we know that communication and common goals are essential. We approach all scenarios for engineering with the same enthusiasm: commitment to do the best job possible, always think of the client's needs first, and provide proactive communication.

ELECTRICAL ENGINEERING SERVICES

- » **LEED Certification**
- » **Energy Star Certification**
- » **Sustainability Audits**
- » **Sustainable Design**
- » Facility Analyses
- » Schematic and Design Development
- » Power Studies
- » Power Distribution Systems
- » Grounding and Lightning Protection Systems
- » Emergency and Back-up Generator Systems
- » PA/Sound System Design
- » Master Clock and Program Design
- » Voice and Data System Design
- » TV/Video System Design
- » Card Access Systems
- » Camera/Video Surveillance Systems
- » Building Security Systems
- » Fire Alarm Systems
- » Lighting Design
- » Construction Documents
- » Project Management
- » Code/Life Safety Upgrades
- » Energy Analyses/Rebate Assistance
- » Construction Administration
- » On-site Observation
- » Commissioning
- » Post Occupancy Evaluation

MECHANICAL ENGINEERING SERVICES

- » **LEED Certification**
- » **Energy Star Certification**
- » **Sustainability Audits**
- » **Sustainable Design**
- » Facility Analyses
- » Schematic Design
- » Design Development
- » Heating and Ventilation Systems
- » Boiler Plant Design
- » Chilled Water Plant Design
- » Plumbing Systems Design
- » Fire Protection Systems Design
- » Construction Documents
- » Project Management
- » Code and Life Safety Upgrades
- » Energy Analyses and Rebate Assistance
- » Construction Administration
- » On-site Observation
- » Commissioning
- » Post Occupancy Evaluation



BENEFITS OF IN-HOUSE ENGINEERING

Wold brings Architecture and Engineering services together to form an in-house collaboration to better enhance our ability to service school districts. Having both Architectural Staff and Engineering Staff under one roof is proven to have many advantages to ensure the overall success of your project.

- » Our LEED accredited architectural and engineering personnel have worked together on projects for 50+ regional school districts.
- » Improved communication between the architects, engineers, and all client stakeholders.
- » Schedules are better controlled, budgets met and overall performance is enhanced, surpassing client expectations.
- » Tailored and well coordinated contract drawings and specifications better reflect your desires and needs.
- » Cohesive integration of sustainable systems between architecture and engineering components.

WOLD'S LEED PROJECTS

- Certified
- » LEED Gold - Scott Emergency Communications Center
 - » LEED Gold - Rosa Parks Elementary*
 - » LEED Silver - George W. Gibbs Jr. Elementary
 - » LEED Certified - Gordon Parks High School
- Pending Certification
- » LEED Silver - City of Minneapolis EOTF**
 - » LEED Certified - Carlton County Health and Human Services** » LEED Gold - Idalia PK-12 School
 - » LEED Gold - Sheridan 3-8 School
 - » LEED Gold - Otis PK-12 School
 - » LEED Certified - Lester Park/Lincoln Piedmont Elementary

Sustainable Schools - Case Studies

The following are some of Wold's examples with specific innovative but tested approaches of recent sustainable schools:



Idalia PK-12 School
Idalia, CO

The Idalia new PK-12 replacement school is a life-changing event in the small community of Idalia. It was the community's priority to build a sustainable school for the long-term future of its citizens. The Colorado BEST program also supports a long-term view when funding new facilities. An emphasis was placed upon long-term operational savings, which included strategies such as daylighting, geothermal heating and cooling system, energy recovery, and energy controls. Some innovation in design credits being pursued include using the school as a teaching tool, and exemplary performance for processed water use reduction. The design is targeted for LEED Gold certification.



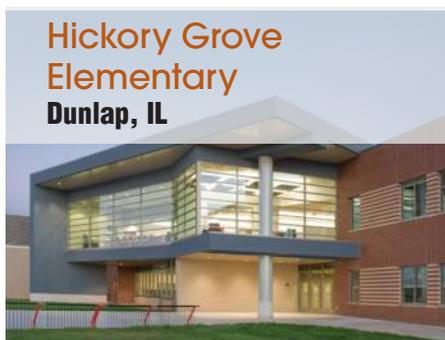
Otis PK-12 School
Otis, CO

Otis School District's new PK-12 facility is a 21st Century school building that will build a strong and stable future for Otis' next generations. The Colorado BEST program supports a long-term view when funding new facilities. Unique design features included separate elementary and middle/high school classroom wings, shared gym, cafeteria, library, and administrative spaces at the center of the building and flexible learning areas for students. Sustainable design aspects incorporated into the facility are daylighting, geothermal heating and cooling system, heat island effect mitigation, optimized energy performance, water reduction usage, alternative transportation access and energy controls. The design is targeted for LEED Gold certification.



Fort Logan Northgate
3-8 School
Sheridan, CO

Sheridan 3-8 School's approach to high-performance design was mostly related to energy consumption and the use of durable but environmentally friendly materials. Unique design features include a sloping site which allows for the school's massing and sloping roof form response, a geothermal heat pump and cooling system with 70 geothermal wells to a depth of 500 feet with small back-up boiler, a 'cafetorium' design to open to the gym for performances, separate car and bus drop off for student safety, flexible learning areas, and an integrated internet based system. Because of the urban density, development density and community, connectivity points were achieved and at this point are tracking to receive 68 points, exceeding the required 60 points needed for LEED Gold.



Hickory Grove
Elementary
Dunlap, IL

At Hickory Grove Elementary, some sustainability strategies revolve around the creation of classroom clusters. Each cluster is organized around inter-connected, shared resource areas which allow the building to be adaptable when grade level populations fluctuate. Additionally, the facility was master planned to accommodate the additional classrooms at each cluster without having to alter the clustered classroom configuration. This strategy prepares the school to be "future ready." Natural daylight is emphasized throughout the building by clerestory and skylights. Materials utilized throughout were chosen thoughtfully to strike a balance between colorful, visual stimulation and durability appropriate to the learning environment.

Sustainable Schools - Case Studies (con't)

The following are some of Wold's examples with specific innovative but tested approaches of recent sustainable schools (Continued):

Gibbs Elementary Rochester, MN



The new Rochester Elementary School site is designed to be centrally located within a New Urbanism development and will serve as a community center for the students and families in the new neighborhood. With the decision to pursue LEED for Schools Certification, the design of the Elementary School incorporates numerous sustainable strategies. The innovative mechanical design achieved all 10 available LEED points for optimizing energy performance. The total building energy use performs 60% better than code minimum. Systems include a horizontally bored ground coupled geothermal system, ice storage to use off peak utility rates for cooling, displacement ventilation, heat recovery, radiant heating, and occupancy sensor control. USGBC recently awarded this building LEED Silver certification.

Rosa Parks Elementary Mankato, MN



Rosa Parks Elementary School created an opportunity to establish new directions for facilities. The building is the first new elementary school for the District in over 40 years. This new direction included being awarded LEED Gold certification, and studying trends in elementary facility design. The building is designed as a facility utilizing geo-thermal heating and cooling, natural day lighting, and sustainable materials. The design emphasizes flexible space configurations that accommodate modern instructional delivery. Classroom clusters allow for flexible teaching strategies, and accommodate groups of various sizes. The school is also set up for night and weekend events and allows access to the gym and cafeteria while keeping the remainder of the building secure.

Jackson Elementary Shakopee, MN



As a District, Shakopee Schools closely watches operating costs as the District grows 300 to 500 students each year. Frequent new school building projects allow the District to pilot various strategies and analyze the benefit. The school also builds on previous advances in energy efficiency through numerous strategies based on review of actual performance, energy rates and payback analysis. These sustainable strategies included: Dual fuel hi-efficiency modular boilers, EMS controls to tightly manage operational zones and times, occupancy sensors, CO2 monitoring, additional insulation, and daylight harvesting. The Media Center also has evolved to a highly kinetic technology driven space including two dedicated computer labs, editing and search stations, and remote mini-labs within the learning communities for greater connectivity. This elementary was designed to LEED Silver.

Lester Park/ Lincoln Piedmont Duluth, MN



At the new Duluth Elementaries, it was understood by the community that this would be an opportunity to rebuild the entire District with a more sustainable approach. Both Lester Park and Lincoln Piedmont employed new technologies to support District goals. Strategies included an energy-efficiency and displacement ventilation system approach to provide a high level of indoor air quality, along with a high-efficiency hot water plant, chilled water plant, recovery wheels, variable speed, and lighting systems and controls. Both elementaries were designed to LEED Silver.

Energy Conservation

Wold has a proven record of designing energy efficient schools and tracking the results. Our process begins with a solid foundation of energy conservation strategies that are implemented on every project (see the Top Ten “Hit List” for examples). The District is then engaged in an open dialogue about energy conservation opportunities. These opportunities will include topics such as geothermal heating/cooling, ice storage, displacement ventilation, etc. We have created a process that results in a conceptual description of the functional operation and a cost vs. payback analysis. This process simplifies system selection and produces a high-performing facility. The Top Ten “Hit List” is a sample of the energy conservation strategies that will be included in your facilities.

TOP TEN “HIT LIST”

1. **Lighting** – Lighting technology continues to evolve into ever more efficient lighting systems. A modernization of lighting will typically result in a total electrical use energy reduction of 10% to 15%.
2. **Lighting Off Controls** – The greatest energy savings is the result of a fixture that is turned off when it is not needed. There are a number of strategies that need to be investigated.
 - » Occupancy Sensors
 - » Daylight Control
 - » Lighting Control Zones
 - » Time of Day Scheduling
 - » Photo Cells
3. **Outside Air Management** – 30% to 40% of a buildings energy use is related to conditioning outside air for ventilation. Over ventilating or exhausting excess air is a significant opportunity to save energy. The following need to be evaluated:
 - » CO2 Control
 - » Air System Balancing
 - » Airflow measurement
 - » Control System Operation
 - » Heat Recovery
4. **Building Control Systems** – Over time, building control systems often fall into a state of disrepair and no longer are operating to meet the original design intent. A review of the system performance through trend logs or direct observations can highlight potential issues.
5. **Occupancy Scheduling** – Reducing system run time to match actual occupancy can significantly reduce energy. Run times may be further reduced by providing an occupancy override button for occasional occupancy.
6. **High Efficiency Boilers** – Modern hot water condensing boiler technology can significantly reduce energy consumption. Our recent projects have produced gas utility savings of up to 40%.
7. **Plug Loads** – What people plug in is often an overlooked energy user. Electric heaters for comfort control may be a symptom of mechanical systems that are poorly working. Point of use refrigerators and other low quality motors can result in power factor penalties
8. **Power Factor** – A poor power factor results in essentially paying for energy that is not even used. A controlled power factor correction capacitor at the service is a low cost remedy if it cannot be corrected at the source.
9. **Ratchet Charges** – The utility rate structure may penalize a building for usage that varies throughout the year. Ratchet charges may be easy to correct through operational changes or demand limiting
10. **Variable Speed Control/High Efficiency Motors** – With the low cost of the modern variable speed drive and operational benefits, constant speed systems with low efficiency motors need to be considered for replacement.

Sustainability: A Practical Approach

Finding A Balance

In understanding sustainable goals it is important to understand that each choice you make as a client is based on a balance of three basic and often competing criteria: First Cost, Quality Environment, and Operating Costs. Emphasizing one of these criteria has an inverse effect upon each of the others. For example, minimizing first costs may lead to compromises that impact the quality of the environment in interior spaces, or even lead to higher operation costs than what would have been realized with additional first cost investments. Our approach examines a number of different areas of focus to establish goals and develop solutions for specific choices.

We know any investment in infrastructure needs to make economic sense. First costs need to be affordable for the District. To find the best value, each option and its associated cost can be evaluated over the entire life of the system. Energy costs as a result of system operating efficiency and regular and periodic maintenance costs can be carefully accounted. At the point of implementation, our team will present the information needed to make the right choice based upon your values. Critical components of our feasibility analysis include:

ENERGY MODELING

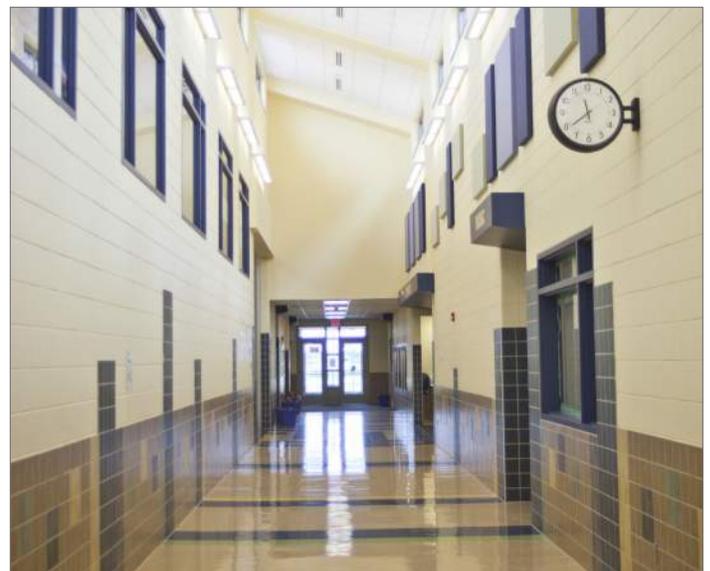
An energy model establishes a common baseline to accurately model the energy performance and utility costs savings of different options. The model's system components are fine tuned to reflect actual consumption of electricity, natural gas, fuel oil and water.

LIFE CYCLE COSTS

We quantify the cost of options over their useful life. The life cycle costs are useful to capture not only the first costs to construct and the energy costs to operate, but also to account for variations in periodic and regular maintenance, and finally replacement costs at the end of a systems useful life.

COST ESTIMATES

Useful Life Cycle data starts with accurate project cost estimates. All our work is in the public sector. We understand that successful projects are within budget. Our three prong approach in monitoring construction trends, relying on industry experts and drawing on staff experience ensures accurate project budgeting.



Our firm's 34 LEED® Professionals are ready to help your District evaluate and select affordable, sustainable options!



Wold's Sustainable Design Green Building Philosophy

Sustainable design covers a wide spectrum of opportunities. We believe that each client has their own unique goals for developing sustainable strategies. As such, we see our role as facilitators to help define your goals and then design appropriately to help you meet or exceed those expectations. We don't have a Green Agenda we bring as a preconception, nor do we expect you to be experts. To help with this process we have developed a Sustainable Planning Guide as a tool to help walk through possible strategies, discuss the benefits and incentives, and determine which may be appropriate for you. These may range from simple, common sense approaches to more extensive implementations to reach your goals. Whatever the case, it is a functional approach that is built from your needs – not our desires.