



The Green Schools Quest 2018-19 'Focus of the Year' is ENERGY!

This year's optional theme is Energy! This focus can take many forms so the first step in your quest is to choose a pathway. Listed below are several options, but there are many more. . .



Investigate Sources of Energy

Where *does* our energy come from? Where *could* our energy come from? Learning what energy is and how it's supplied to us can help us find better sources of energy. Exploring where your school's energy comes from could be the quest for you, or maybe its figuring out how many solar panels would be needed to power your school.

Monitor Energy Use

Just as important as knowing where our energy comes from is knowing how much of it we are using. Projects centered around measuring your energy consumption can be very insightful! Projects down this path could use ENERGY STAR to benchmark your school or complete a Green House Gas Inventory.



Energy Efficiency and Behavior

Using what we have in the best way possible is a smart approach to energy use. What are some of our everyday practices that we could change to become more energy efficient? Energy saving campaigns, delamping, or lightbulb exchanges are all fun approaches to increasing energy efficiency!

These pathways can be mixed together too!
Flip this page over to see more project ideas to inspire your GSQ Project. . .

Energy Project Ideas

Category	Project Ideas	Impact	Getting Started	Resources for Implementing
Energy Demand	Research alternative energy sources and resilient power grids (i.e. microgrids, solar storage). Then, write letters or emails to public officials and power companies to advocate for a more resilient power grid.	Knew knowledge, sense of civic responsibility.	http://energystorage.org/news/esa-news/solar-and-energy-storage-can-protect-cities-power-outages-create-resilient-communities https://microgridknowledge.com/energy-storage-public-health/	https://openstates.org/find_your_legislator/
	Post signs and reminders to turn off the lights.	Increase awareness, reduce energy use.	https://www.ase.org/resources/energy-saving-tips-schools	
	When working after hours, teachers should consider using desk lamps instead of overhead classroom lighting.	Reduce energy use.	https://www.ase.org/resources/energy-saving-tips-schools	
	Analyze where the light comes from in your class. Make changes based upon your assessed need for more or less light (i.e. put dimmers on, have automatic timers, open the blinds, install photocells).	Reduce energy use.	http://mygreenapple.org/educate-environmental-and-sustainability-literacy	http://mygreenapple.org/assess-school-lighting http://www.ase.org/resources/energy-saving-tips-schools
Energy Efficiency	Replace incandescent and/or fluorescent lightbulbs with Energy Star-certified LED bulbs.	Reduce energy use, increase efficiency, and save up to \$14 per fixture per year.	https://www.ase.org/resources/energy-saving-tips-schools	https://www.energystar.gov/products/lighting_fans/light_bulbs
	Work with facilities manager to track the energy being used in your school. Then, create a campaign to unplug unused items and look at the change in energy usage.	Reduce energy use.	https://www.energy.gov/eere/education/downloads/energy-detectives-3-activities http://centerforgreenschools.org/sites/default/files/resource-files/Behavior-based-Efficiency.pdf	https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/share-and-request-data http://www.ase.org/resources/energy-saving-tips-schools https://www.zeroenergy.org/schools/ http://greenapple.org/sites/default/files/resources/energy-k-12-student-toolkit.pdf
	Install reflective window film.	Can help reduce heat gain during summer		https://www.lowes.com/projects/other-activities/install-window-film/project
	Audit insulation levels in school.	Can help to greatly reduce energy use		
	Energy Consumption vs Conservation: Educate community on the difference between consumption vs conservation. Identify areas in school for both and put a plan in place for the school that will impact both.	Increase awareness, reduce energy use.		

Energy Project Ideas

	Energy Monitor: Like a hall monitor, create a Energy Monitoring team to advocate for students to reduce energy.	Increase awareness, get buy-in from students, peer learning.		
	Plant a tree.	One well-placed shade tree can reduce your cooling costs by 25% (Place leaf shade trees on south and west side, and evergreens on north side).	https://www.arborday.org/trees/planting/	
	Turn down hot water flow in bathrooms.	Reduce energy use from water heater.		
	Reduce plug loads: Turn off or unplug all unnecessary equipment when leaving class room, including computers, TVs, and projectors. Many devices draw power even while they are off. (Power strips are a great solution.)	Reduce energy use.	https://www.duke-energy.com/energy-education/energy-savings-and-efficiency/energy-vampires	
	Weather strip and seal windows.	Reduce energy use, increase efficiency, get rid of drafts.	https://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing&s=footer https://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_window_door_trim	
	Make sure doors close tight.	Reduce energy use, increase efficiency, get rid of drafts.		
	Set and follow a schedule for temperature and lighting settings based on different times, days, and seasons.	Reduce energy use, increase efficiency.		
Performance Measurement	Create an energy Dashboard for your School	School-wide learning, baseline for energy use reduction projects.		https://environmentaldashboard.org/building-dashboard-explained http://energyhog.org/
	Energy Audit: Identify how much energy your school uses.	New knowledge to use in the future.		https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager https://www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_audits

Energy Project Ideas

	Benchmark School: Use ENERGY STAR's Portfolio Manager or another auditing system to track energy use and identify how school is performing. Develop a plan to update and track progress with school administration.	Ongoing tracking and reduction of energy use.		https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager
	Get your school ENERGY STAR certified.			https://www.energystar.gov/buildings/tools-and-resources/energy-star-score-k-12-schools
	Evaluate Heating and Cooling systems. Identify whether you are over heating or over cooling your building. Develop a plan to use HVAC system more efficiently.	Reduce energy use, increase efficiency.	Are the vents clean? Window leaks? Is the school too hot or cold? -Have students conduct interviews to identify comfortability	https://www.energystar.gov/index.cfm?c=heat_cool.pr_hvac
Renewable Energy	Feasibility study: identify if wind or solar could be implemented. Research where the two of these are produced, and if the school could purchase them.	New knowledge to use in the future.	http://www.need.org/energy-links http://www.solar-nation.org/missouri https://straightupsolar.com/for-community/group-buy/why-solar/	https://www.zeroenergy.org/schools/
	How much solar power would your school need? Calculate the amount of electricity used by your school and how much solar power would be needed to completely power your school using solar panels.	New knowledge to use in the future.	https://www.wholesalesolar.com/solar-information/start-here/offgrid-calculator#appliancePowerTable (energy calculator) start by listing all appliances that use energy maybe start with your classroom then teach other classrooms how to do it- compare those energy totals with the monthly energy bill- discrepancies? what might we be missing?	
	Determine how many photovoltaic panels would be needed to power your school's exterior lamps. Figure out where they could be located and provide a layout.	New knowledge to use in the future.		
	Create a sculpture from found and recycled materials that demonstrates energy concepts like conservation, efficiency, or another relevant concept.	School-wide learning, beautification.		
	Create a pond that uses hydropower to prevent stagnation.	Beautification, habitat.		
	Take field trips to see how renewable energy works in action.	New knowledge to use in the future.		
	Engage in activities and games surrounding general energy information, energy sources, electricity, and conservation.		https://the-need-project.myshopify.com/collections/energy-sources/products/energy-infobook-activities	