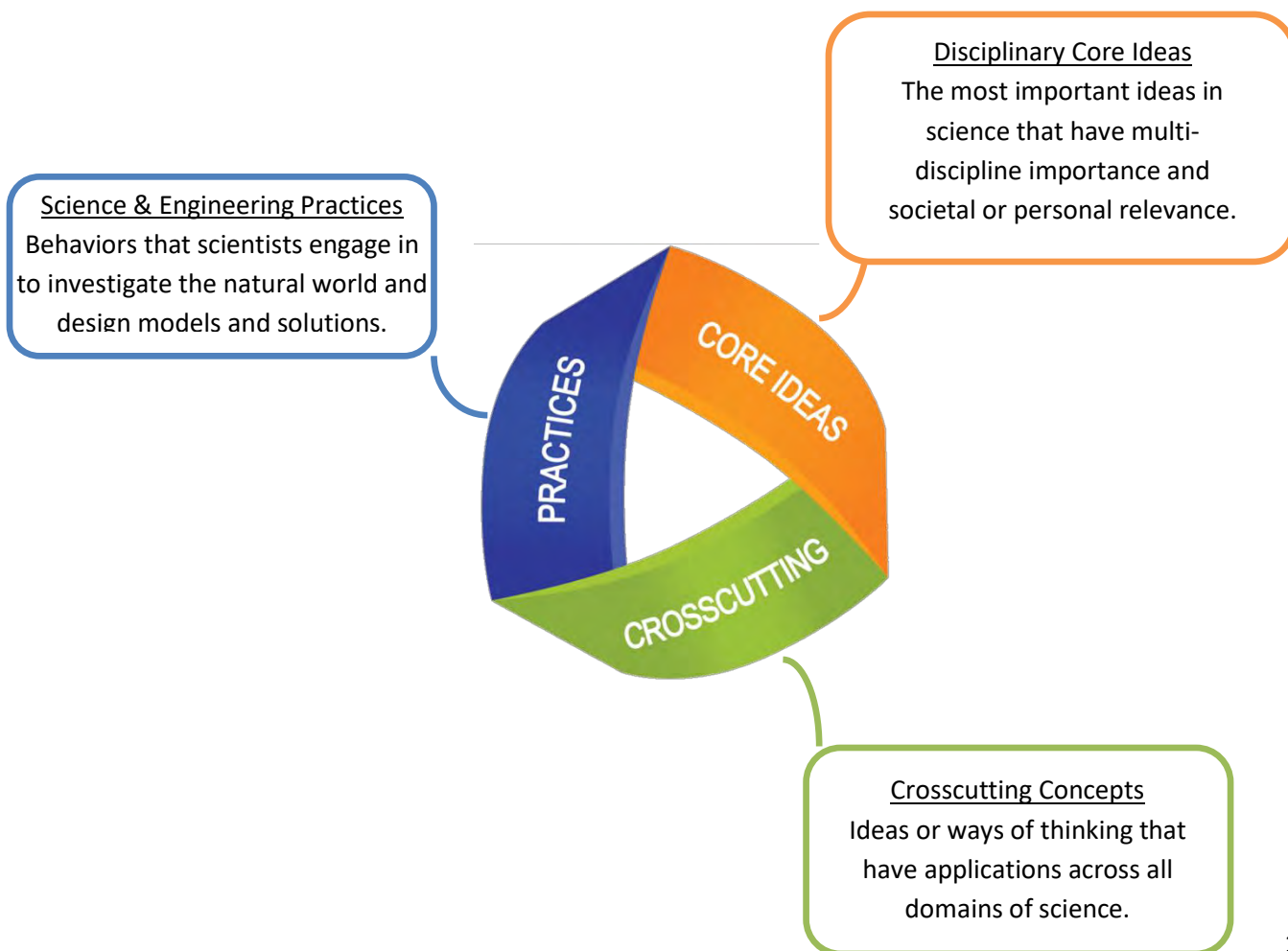




***Next Generation Science Standards and Common Core alignment with
King County Level Two Energy Conservation Best Practices Guide
Elementary School***

Next Generation Science Standards (NGSS) Categories



Level Two – Energy Conservation

Elementary School

The connections between the **Next Generation Science Standards** (NGSS) and **King County Level Two Best Practices Guide** uses the matrices created by the National Science Teachers Association (NSTA) available at <http://ngss.nsta.org/ngss-tools.aspx>.

Note: In this reference sheet an italicized number and title refers to a specific action choice in the Best Practices Guide. For example, “*17. Connect to salmon* –” on page 3 is for schools that choose #17 in the Education and Outreach section of the Best Practices Guide as one of their Level Two actions.

Assess and Monitor section of the Level Two Best Practices Guide

- Plan and conduct an investigation collaboratively.
- Define a simple design problem that can be solved through a process or system.
- Use counting and numbers to identify and describe patterns in the natural and designed world(s).

- Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions.

- Cause and effect relationships are routinely identified, tested, and used to explain change.
- Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.
- Change is measured in terms of differences over time and may occur at different rates.

Education and Outreach section of the Level Two Best Practices Guide

3. Energy conservation Patrol - Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.

6. Share facts – Construct and/or support an argument with evidence.

9. Math or science lessons –

- Represent data in tables and/or various graphical displays to reveal patterns.
- Analyze and interpret data to make sense of phenomena.

17. Connect to salmon - Read and comprehend grade-appropriate complex texts and/or other reliable media to summarize and obtain scientific and technical ideas and describe how they are supported by evidence.

6. Share energy conservation facts - At whatever stage, communicating with peers about proposed solutions is an important part of the design process.

11. Climate change connections - Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments.

17. Connect to salmon - When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.

The following Crosscutting Concepts can easily be worked into outreach. Contact your King County Green Schools Program representative for assistance.

- A system is a group of related parts that make up a whole and can carry out functions its individual parts cannot.
- Change is measured in terms of differences over time and may occur at different rates.

Lighting, Plug Load, Heating, and Cooling sections of the

Level Two Best Practices Guide

- Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design solution.

9. Science lessons could include

- Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not.
- Energy can also be transferred from place to place by electric currents, which can then be used locally to produce motion, sound, heat, or light.

The following Crosscutting Concepts can easily be worked into these actions. Contact your King County Green Schools Program representative for assistance.

- Energy can be transferred in various ways and between objects.

Common Core alignment
Level Two – Energy Conservation
Elementary School – Primary Grades



**English Language Arts -
Speaking and Listening**

Education and Outreach – Share energy conservation facts; Create an instructional video; Educate staff and students.

CCSS.ELA-LITERACY.SL.K-1.4

Describe people, places, things, and events with relevant details.

CCSS.ELA-LITERACY.SL.K-1.5

Add drawings or other visual displays to descriptions as desired to provide additional detail.

CCSS.ELA-LITERACY.SL.K-2.6

Speak audibly and express thoughts, feelings, and ideas clearly (1-2 Use complete sentences).

CCSS.ELA-LITERACY.SL.1-2.6

Produce complete sentences when appropriate to task and situation.

Mathematics

Education and Outreach – extension ideas

- Include age appropriate mathematics in energy conservation messages.
- Calculate how much less energy your class would use if you used task lighting.
- Compare classes that leave lights and electronics on before and after an energy conservation pledge.
- Calculate student carbon footprint using links provided in the Level Two Best Practices Guide. Compare your results with other classrooms.
- Explore how turning off the lights saves energy and eventually benefits salmon. Display your findings in graph form.

Common Core alignment

Level Two – Energy Conservation

Elementary School - Intermediate



English Language Arts - Speaking and Listening

Education and Outreach – Share energy conservation facts; Create an instructional video; Educate staff and students

CCSS.ELA-LITERACY.SL.3-5.4

Report on a topic or text, tell a story, or recount an experience.

CCSS.ELA-LITERACY.SL.3-4.5

Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.5.5

Include multimedia components and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.3.6

Speak in complete sentences in order to provide requested detail or clarification.

Mathematics

Education and Outreach – extension ideas

- Calculate how much less energy your class would use if you used task lighting.
- Compare classes that leave lights and electronics on before and after an energy conservation pledge.
- Calculate student carbon footprint using links provided in the Level Two Best Practices Guide. Compare your results with other classrooms.
- Explore how turning off the lights saves energy and eventually benefits salmon. Display your findings in graph form.