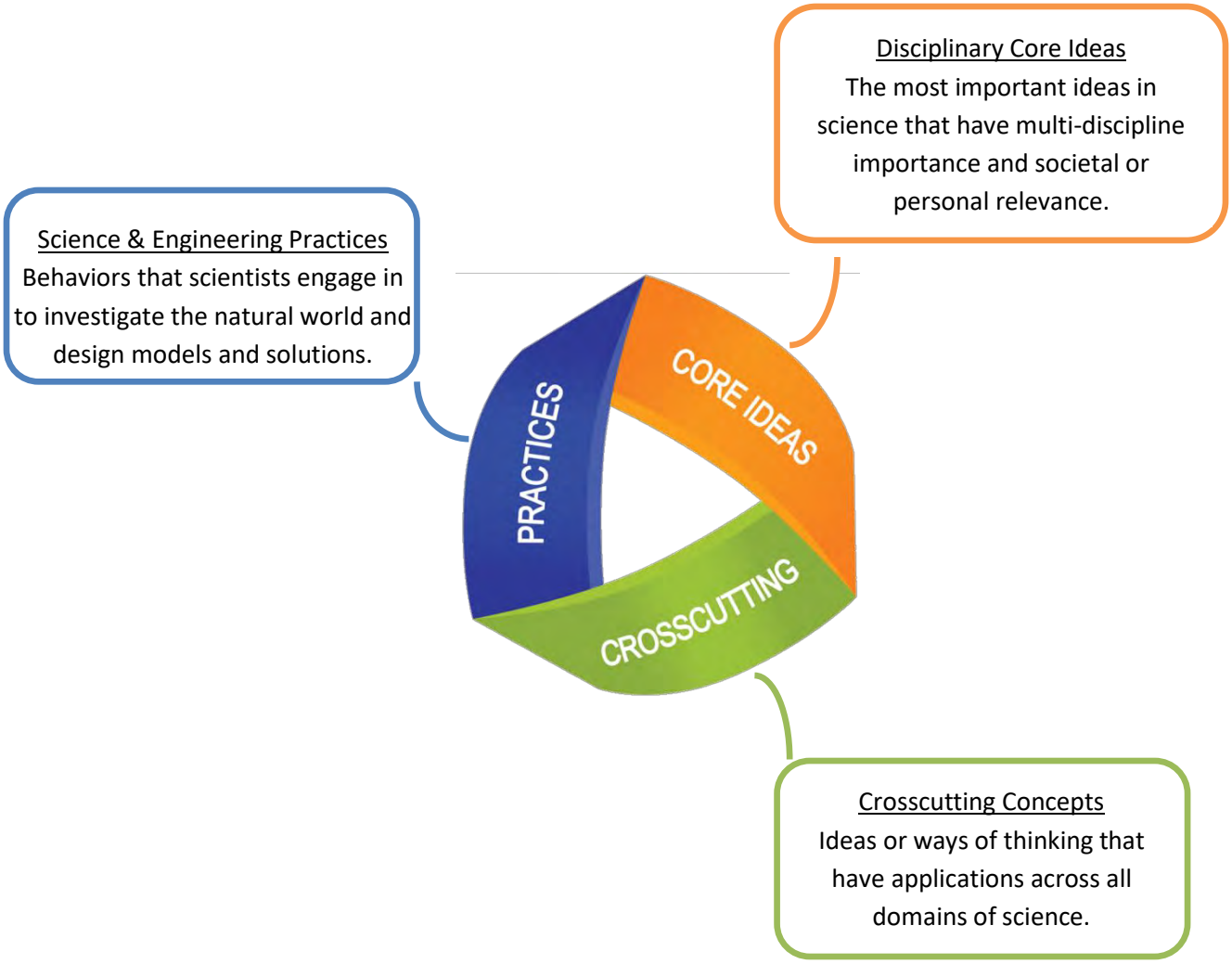
***Next Generation Science Standards* and *Common Core* alignment with King County Level Three Water Conservation and Pollution Prevention**

Best Practices Guide

Elementary School

Next Generation Science Standards (NGSS) Categories



Level Three - Water Conservation and Pollution Prevention

Elementary School

The connections between the **Next Generation Science Standards** (NGSS) and **King County Level Three 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, *"8., 11. Learn about local and world water sources"* on page 3 is for schools that choose #8 or #11 in the Education and Outreach section of the Best Practices Guide as one of their Level Three actions.

Assess and Monitor section of Level Three 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 Level Three Best Practices Guide

1., 12., 19-22. Train others - Communicate scientific and/or technical information orally and/or in written formats, including various forms of media.

3. Start a schoolyard habitat - Define a simple design problem that can be solved through the development of an object, tool, or process.

10. Test local water – Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence.

8.,11. Learn about local and world water sources – 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.

15., 16., 17. Stormwater protection design - • Make a claim about the merit of a solution to a problem by citing relevant evidence.
• Collaboratively develop a model that shows the relationships among variables for regular occurring events.

1., 12., 19-22. Train others - At whatever stage, communicating with peers about proposed solutions is an important part of the design process.

2. Local watershed protection project –Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere.

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.

15., 16., 17. Stormwater protection design - Possible solutions to a problem are limited constraints. Success of a designed solution is determined by criteria. Different proposals can be compared on the basis of how well each one meets the criteria for success or how well each takes the constraints into account.

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.

Indoor Water Conservation section of Level Three 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. *2. Measure faucet flow and 5. Reduce water used in toilet flushing* - • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence. • Use data to evaluate and refine design solutions.	*2. Measure faucet flow and 5. Reduce water used in toilet flushing* - • 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. • Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints.	The following Crosscutting Concepts can easily be worked into these actions. Contact your King County Green Schools Program representative for assistance. • Some systems appear stable, but over long periods of time will eventually change.

Outdoor Water Conservation section of Level Three 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. *2. Adjust watering schedule using historical index* - • Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem.	*1. Inspect irrigation systems* • Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. • Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints.	The following Crosscutting Concepts can easily be worked into these actions. Contact your King County Green Schools Program representative for assistance. • Natural objects and/or observable phenomena exist from the very small to the immensely large or from very short to very long time periods.

Common Core alignment

Level Three, Water Conservation and Pollution Prevention

Elementary School – Primary Grades

English Language Arts - Speaking and Listening

Education and Outreach – Share water conservation or pollution prevention facts, Teach others about stormwater and/or wastewater

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 water conservation messages.
- Calculate how much less water each student would use if he or she always turned off the water while washing hands and brushing teeth.
- Compare how many students signed a water conservation pledge in each class. Determine the most pledges in the school.
- Keep track of how much water is needed for a healthy school garden.

Common Core alignment

Level Three, Water Conservation and Pollution Prevention

Elementary School – Intermediate Grades

English Language Arts - Speaking and Listening

Education and Outreach – Share water conservation or pollution prevention facts, Teach others about stormwater and/or wastewater

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 n in order to provide requested detail or clarification.

Mathematics

Education and Outreach – extension ideas

- Include age appropriate mathematics in water conservation messages.
- Calculate the total ratio of impervious to pervious surface area on the school campus.
- Calculate how much less water each student would use if he or she always turned off the water while washing hands and brushing teeth.
- Plan a pledge drive and record numerical data on each grade level.
- Keep track of how much water is needed for a healthy school garden.