

Inquiry

Question

- ◊ Scientific investigations involve asking and answering questions and comparing the answers with evidence from the real world.

Investigate

- ◊ Scientists plan and conduct different kinds of investigations, depending on the questions they are trying to answer. Types of investigations include systematic observations and descriptions, field studies, models, and open-ended explorations as well as experiments.
- ◊ An experiment involves a comparison. For an experiment to be valid and fair, all of the things that can possibly change the outcome of the experiment should be kept the same, if possible. (Variables)
- ◊ Investigations involve systematic collection and recording of relevant observations and data.
- ◊ Repeated trials are necessary for reliability.

Models

- ◊ A scientific model is a simplified representation of an object, event, system, or process created to understand some aspect of the natural world. When learning from a model, it is important to realize that the model is not exactly the same thing being modeled.

Explain

- ◊ Scientific explanations emphasize evidence, have logically consistent arguments, and use known scientific principles, models, and theories.

Communicate

- ◊ Scientists communicate the results of their investigations verbally and in writing. They review and ask questions about the results of other scientists' work.

Intellectual Honesty

- ◊ Scientists report the results of their investigations honestly, even when those results show their predictions were wrong, or when they cannot explain the results.

Science Vocabulary

- Bacteria
- Circuit
- Camouflage
- Carnivore
- Chemical
- Compare
- Consumer
- crystal
- Describe
- Decomposers
- Dissolving
- Drought
- Ecosystem
- Energy
- Environment
- Erosion
- Evaporate
- Evidence
- Food Web
- Function
- Gas
- Gram
- Graph
- Gravity
- Habitats
- Herbivore
- Inference
- insoluble
- Inputs
- Invertebrate
- Liquid
- Mass
- Mixture
- Model
- Motion
- Observation
- Omnivore
- Organisms
- Outputs
- Oxygen
- Pendulum
- Precipitation
- Predict
- Producers
- Properties
- Saturate
- Solid
- Solution
- Solvent
- Solubility
- Speed
- Standard
- Structure
- Subsystem
- System
- Temperature
- Thrive
- Tools
- Transfer
- Transformation
- Variable
- Velocity
- Volume
- Weight

Tacoma Priority Science Standards 2011-2012 for Fifth Grade



Supporting Science at Home

- 1. Keep a science notebook at home for your child to write questions, make observations and record notes.**
- 2. Talk to your child about science that is happening at school.**
- 3. Take advantage of local resources around Tacoma.**

BIG Picture

The *Tacoma Priority Science Standards* are adapted from The *Washington State Science Standards*.

“The standards are not the curriculum. The standards describe what all students at this grade level are expected to know and be able to do in the area of science.”*

The purpose of this document is to clarify standards taught at each grade level and to provide strong support for students, parents, teachers, and the broader community by guiding the alignment of the school curriculum, instruction and assessment.”

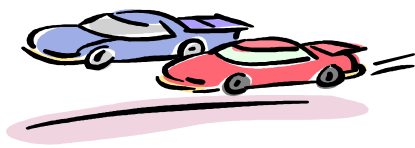
**Revised Washington State K-12 Science Standards. Page 1*

Systems & Application

- ◇ Systems contain subsystems
- ◇ A system can do things that none of its subsystems can do by themselves.
- ◇ Systems have inputs and outputs. Changes in inputs may change the outputs of a system.
- ◇ One defective part can cause a subsystem to malfunction, which in turn will affect the system as a whole.
- ◇ Technology involves changing the natural world to meet human needs or wants.
- ◇ Problems of moderate complexity can be solved using the technological design process. This process begins by defining and researching the problem to be solved.
- ◇ Scientists and engineers often work in teams with other individuals to generate different ideas for solving a problem.
- ◇ Possible solutions should be tested to see if they solve the problem. Building a model or prototype is one way to test a possible solution.
- ◇ Solutions to problems must be communicated, if the problem is to be solved.
- ◇ Science and technology have greatly improved food quality and quantity, transportation, health, sanitation, and communication.

Physical Science

- ◇ Substances can exist in different physical states—solid, liquid, and gas. Many substances can be changed from one state to another by heating or cooling. (Mixtures and Solutions)
- ◇ Total amount of matter stays the same when it undergoes a physical change such as when an object is broken into tiny pieces, when a solid is dissolved in a liquid, or when matter changes state. (Mixtures and Solutions)
- ◇ The weight of an object is a measure of how strongly it is pulled down toward the ground by gravity. (Variables)
- ◇ The relative speed of two objects can be determined in two ways: (1) If two objects travel for the same amount of time, the object that has traveled the greatest distance is the fastest. (2) If two objects travel the same distance, the object that takes the least time to travel the distance is the fastest. (Variables)
- ◇ Air is a gas. Air fills a closed container completely. Wind is moving air. (Variables)
- ◇ Energy has many forms, such as heat, light, sound, motion, and electricity. (Variables, Mixtures & Solutions.)



Life Science

- ◇ Certain structures and behaviors enable plants and animals to respond to changes in their environment. (Environments)
- ◇ Plants and animals have structures and behaviors that respond to internal needs. (Environments)
- ◇ Plants and animals are related in food webs with producers (plants that make their own food), consumers (animals that eat producers and/or other animals), and decomposers (primarily bacteria and fungi) that break down wastes and dead organisms, and return nutrients to the soil. (Environments)
- ◇ Plants and animals inherit many characteristics from their parents. Some inherited characteristics allow organisms to better survive and reproduce in a given ecosystem.



Space Science

- ◇ The Sun is a star that is the central and largest body in our Solar System. The Sun appears much brighter and larger in the sky than other stars because it is many thousands of times closer to Earth.

Ecosystems

- ◇ An ecosystem includes all of the populations of living organisms and nonliving physical factors in a given area. Living organisms depend on one another and the nonliving physical factors in their ecosystem to help them survive. (Environments)
- ◇ Ecosystems can change slowly or rapidly. Big changes over a short period of time can have a major impact on the ecosystem and the populations of plant and animals living there. (Environments)
- ◇ All plants and animals change the ecosystem where they live. If this change reduces another organism's access to resources, that organism may move to another location or die. (Environments)
- ◇ People affect ecosystems both positively and negatively. (Environments)
- ◇ In any ecosystem, some populations of organisms thrive and grow, some decline, and others do not survive at all. (Environments)
- ◇ Some characteristic and behaviors result from an individual plant's or animal's interactions with the environment and not passed from one generation to the next by heredity. (Environments)
- ◇ Plants and animals are related in food webs with producers, consumers, and decomposers that break down wastes and dead organisms, and return nutrients to the soil.