 Chimacum Middle School

Mr. Al González, Science

**6th grade Science Standards**

Here are some of the Next Generation Science Standards that 6th graders will be learning through our study of Mt Saint Helens, Energy, Machines, and Motion and our study of ecology through our stewardship project (we may focus on different standards depending on student input).

**Mt Saint Helens and Volcanoes:**

**MS-ESS2-2**. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

**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.

* Students will be able to distinguish between different volcano types including how they differ and how they are similar and how they are formed.
* Students will be able to distinguish between four different types of lava and match lava types to the five different volcano types.
* Students will be able to match the five volcano types to the four lava types and to the four different eruption types.
* Students will use Mt Saint Helens to describe how its eruption changed the Earth’s surface.
* Students will analyze Mt Saint Helens data as a natural hazard to learn how scientists can forecast future catastrophic events.

**Energy and Forces:**

**PS3.A**: Definitions of Energy

**PS3.B**: Conservation of Energy and Energy Transfer

**PS3.C**: Relationship Between Energy and Forces - When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object.

**PS2.A**: Forces and Motion - For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton’s third law).

**PS2.B**: Types of Interactions - Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass—e.g., Earth and the sun.

* Describe what it takes to build a battery and explain how a rechargeable battery system uses electrical energy to power a light bulb and an electric motor.
* Define energy and give examples.
* Describe force and be able to explain how forces and energy work together.
* Explain what Work and Power are and how they are calculated.

**Environmental Stewardship:**

**MS-ESS3-3**: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

**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.

**MS-LS2-1**. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

**MS-LS2-4**. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

* Explain how water can become polluted, different types and causes, and ways we can treat polluted water or better yet prevent water pollution.
* Describe the water cycle.
* Explain how we can be environmental stewards of our creek including actions we can take to maintain our creek.
* Explain how we can help salmon in our creek.
* Explain how benthic macros help us monitor our creek’s biological integrity.
* Use water quality to assess our creek’s heath and report it including ways our community can keep our creek healthy.