



Scope and Sequence

Grade: 7 Month: September

Content Area: Science

Sub Content/Unit: Salmon/Watershed Ecology

<i>What our students will know and be able to do</i>	<i>Learning Activities</i>	<i>Materials</i>	<i>Assessment tools</i>	<i>Notes</i>
<ul style="list-style-type: none"> ● Understand that salmon are a keystone species on which many other species depend for survival. ● Be able to explain the salmon life cycle and how salmon find their natal streams. ● Understand water quality conditions that help salmon and macroinvertebrates thrive. ● Learn about the importance of healthy riparian areas for salmon survival. ● Know the impacts of stormwater pollution on water quality and salmon health. 	<ul style="list-style-type: none"> ● Field trip to Carmen Smith Spawning Channel to assess water quality, the health of macroinvertebrates, learn about salmon biology, and what makes for a healthy riparian area. ● Raising and releasing salmon with 2nd grade buddies. 	<ul style="list-style-type: none"> ● Splash watershed curriculum ● Tank for salmon ● Stormwater pollution game cards. 	<ul style="list-style-type: none"> ● Quizzes ● Written reflections ● Analysis of data collection in the field 	



Scope and Sequence

Grade: 7 Month: October-December

Content Area: Science

Sub Content/Unit: Life Science

<i>What our students will know and be able to do</i>	<i>Learning Activities</i>	<i>Materials</i>	<i>Assessment tools</i>	<i>Notes</i>
<ul style="list-style-type: none"> ● Understand that all living things are made of cells which is the smallest unit of what can be said to be alive, and understand that some organisms are single celled and some are multicellular. ● Understand that cells organize into tissues, organs, and systems that perform certain functions. ● Know that food must be broken down into molecules and transported to cells for the body to use for energy and building materials. ● Understand that there is a chemical 	<ul style="list-style-type: none"> ● Labs ● Readings ● Inquiry discussions 	<ul style="list-style-type: none"> ● Microscopes, slides, cover slips ● Amoebas ● Glucose, pepsin, hydrochloric acid, Benedict's solution, iodine ● Retractable pens ● Filter paper ● Test tubes, 100mL graduated cylinders ● Hot plates ● Safety goggles ● Crackers, boiled egg, red onion, salt, cross section of an animal bone 	<ul style="list-style-type: none"> ● Lab reflections ● Quizzes ● Constructed response questions ● Written assessments 	

reaction between oxygen and glucose that releases energy.

- Know that body systems provide cells with basic needs such as food, oxygen, and waste removal.
- Understand that cells carry out functions like growing, reproducing, getting energy from food, and responding to stimuli. Also, understand that cells are living things.
- Know that the nervous system coordinates all other systems.



Scope and Sequence

Grade: 7 Month: January-March

Content Area: Science

Sub Content/Unit: Genetics/Evolution

<i>What our students will know and be able to do</i>	<i>Learning Activities</i>	<i>Materials</i>	<i>Assessment tools</i>	<i>Notes</i>
<ul style="list-style-type: none"> ● Understand that genetics is the study of heredity, the process of passing on traits to offspring ● Know basic genetic terms, and rules of inheritance including: Mendelian, codominance, blended traits and traits with multiple alleles. ● Be able to give probabilities of inherited traits using a Punnett square. ● Be able to explain how physical characteristics of organisms change over generations ● Understand how mutations and 	<ul style="list-style-type: none"> ● Inventory of Traits activity ● Bird beak lab ● Evolution documentary ● Monkey Island Evolution Game ● Chameleon camouflage activity ● Building Beast project to show understanding of adaptations ● March Mammal Madness research/participation 	<ul style="list-style-type: none"> ● Harry Potter Genetics ● Evolution Unit Bundle ● Dice ● Clothespins, tweezers, plastic spoons, chopsticks, cups, dried beans, rice, toothpicks, rubber bands ● Evolution documentary 	<ul style="list-style-type: none"> ● Lab Reflections ● Quizzes ● Final project ● Essay ● Final Exam 	

adaptations drive evolution

- Understand how the shape of a bird's beak determines what it eats, i.e. beaks adapt to the available food source.
- Understand how camouflage can help an organism to survive in its environment
- Understand factors affecting natural selection: overproduction, variation, competition, and environmental changes.
- Be able to demonstrate the process of evolution through natural selection
- Understand the process of determining the age of fossils using radioactive dating
- Be able to provide evidence of evolution through tracing the history of whales
- Show understanding of adaptations and how they drive evolution



Scope and Sequence

Grade: 7 Month: March-May

Content Area: Science

Sub Content/Unit: Chemistry

<i>What our students will know and be able to do</i>	<i>Learning Activities</i>	<i>Materials</i>	<i>Assessment tools</i>	<i>Notes</i>
<ul style="list-style-type: none"> ● Understand that properties are unique characteristics that help identify a substance and distinguish it from other substances, that substances are made of the same atom or molecule all the way through, and that mixtures are made of more than one substance ● Be able to use solubility, density, hardness, and color to distinguish between substances ● Understand that properties of a given substance are the same regardless of the amount of the 	<ul style="list-style-type: none"> ● Labs ● Readings ● Modeling ● Soap making 	<ul style="list-style-type: none"> ● So many... ● Aluminum foil ● copper chloride ● Test tubes/racks ● Vegetable shortening and bar soap (Ivory) ● Baking soda, butter, vegetable oil, road salt, beakers, scales ● Hot plates, temp sensors, ring stand, 500mL beaker ● Short and long strips of aluminum, zinc, iron, and copper ● Chalk, rubbing alcohol ● Plastic baggies, baking soda, road salt, film 	<ul style="list-style-type: none"> ● Lab reflections ● Quizzes ● Constructed response questions ● Essay ● Modeling 	

substance

- Know that a chemical reaction occurs when substances interact and their atoms combine in new ways to form new substances. The new substances and the old substances are made of the same atoms, but those atoms are arranged in new ways. As a result, the new substances have different properties from the original materials
- Understand that phase changes and mixing do not make new substances, and that atoms do not combine in new ways during phase changes or mixing
- Understand that atoms cannot be created or destroyed. In a chemical reaction, the number of atoms stays the same, therefore matter and mass are always conserved

canisters

- Magnesium strips
- Copper pennies (before 1982), playdoh, vinegar
- Colored marshmallows and toothpicks for modeling chemical reactions
- electrodes , alligator clips, 9v batteries
- Koolaid, Erlenmeyer flasks, coffee filters
- Cups, sodium hydroxide, rubbing alcohol, fat, salt



Scope and Sequence

Grade: 7 Month: May-June

Content Area: Science

Sub Content/Unit: Physical/Engineering

<i>What our students will know and be able to do</i>	<i>Learning Activities</i>	<i>Materials</i>	<i>Assessment tools</i>	<i>Notes</i>
<ul style="list-style-type: none"> • Understand the importance of design and precision when constructing an electric vehicle • Be able to collaborate, working as a team to determine conditions that provide optimal performance through trial and error • Understand the effects of friction, drag, inertia, speed, momentum, and gravity on car performance • Learn that science is really FUN! 	<ul style="list-style-type: none"> • Designing, building, and testing electric vehicles • Electric vehicle race • Art concept judging • Science concept judging • Winners compete in the EWEB EV Challenge with students from Bethel, Springfield and 4J school districts 	<ul style="list-style-type: none"> • All provided by EWEB: Wheels, axles, battery packs, alligator clips, gears, motors, balsa wood, tools, glue guns, glue sticks, velcro, washers • Art supplies (varies) • Science concept supplies (varies) 	<ul style="list-style-type: none"> • Gear ratio worksheet • Written response • Working vehicle is the main assessment :) 	