Pushes and Pulls

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	Unit Assessment
6 Learning Cycles 12 Days 360 minutes	K-PS2-1 K-PS2-2	How can we use pushes and pulls to solve problems?	• Pushes and pulls can be big or small. • Pushes and pulls move objects. • When objects bump into each other their motion can change. • Evidence is needed to support thinking. • Engineering is a way to solve problems. • People work together to investigate ideas about science. • People investigate ideas in order to collect evidence. • People share ideas to solve problems.	• LC1 – tell if the image is showing a push or a pull • LC2 – identify what will be used for their ramp, item to roll, way to make it roll further, and unit of non-standard measurement • LC3 – recording data from test 1, 2, and 3 • LC4 – explain what happened as a result of their item to roll going down different height ramps • LC5 – identify what will be used for their roadblock • LC6 – recording data from test 1, 2, and 3 • LC7 – explain what happened as a result of their item to roll hitting the roadblock	Students design a windmill to lift weight. Students will tell how they could improve their design.

Weather Wonders

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	Unit Assessment
10 Learning Cycles 16 Days 480 minutes	K-PS3-1 K-PS3-2 K-ESS2-1 K-ESS3-2	How can we protect everyone from the sun while on the playground?	• There are many ways to solve a problem. • The sun provides the earth with heat and light. • Thermometers are used to measure how hot or cold something is. • Light can cause physical changes. • Light can be produced in different ways. • Sunlight can impact how warm or cold something feels. • The amount of heat a surface absorbs depends on what it is made of. • The color of a surface can change the amount of heat it absorbs. • The temperature of objects is measured with thermometers. • The sun warm surfaces differently • The light from the sun can hurt your skin. • Structures and materials can shield people from the sun. • Weather impacts everyone's lives. • Weather conditions have noticeable patterns over time. • Each of the four seasons has different weather characteristics. • Scientists called meteorologists forecast severe weather in order to prepare people.	• LC1 - Design a structure based on their prior knowledge and explain why it will work. • LC2 – Label temperatures. • LC3 - Make a claim about which surface was the warmest. Evaluate different materials for their shade structure. • LC4 - Draw a picture showing someone how to protect themselves from the sun. • LC7 - Review the data on the calendar and make a prediction. • LC8 – Create a cycle of the four seasons. • LC9 - View weather radar and declare a watch or a warning.	• Prototype of sun structure. • Severe weather alert for the principal based on weather data.

Checkerspot Challenge (Squirrel! Pilot)

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	Unit Assessment
8 Learning Cycles 12-14 Days 360-420 minutes	K-LS1-1 K-ESS2-2 K-ESS3-1 K-ESS3-3	Why do we need to help the Baltimore Checkerspot?	• Plants and animals have needs satisfied by their environment. • Plants and animals can change their environment to provide their needs. • Things that people do to satisfy their needs may impact the environment shared with other animals and plants. • Environments are systems with parts that work together. • Patterns in the natural world can be observed.	• LC1 - Sorting activity showing the needs of plants and animals. • LC2 - Identify the basic needs of animals and plants on a map. • LC3 - Describe the needs of plants and animals (including people). • LC4 - Explain why schoolyard does or does not support the butterfly in terms of basic needs. • LC5 - Analysis of "Oh' Butterfly" Data. • LC6 - Sort images based on whether they help or hurt the environment. • LC7 - Improve upon their original beaver dam design.	Students build a way to protect the white turtlehead from being eaten by deer or stepped on by people. The students present their design to the class and explain how it still allows the White Turtlehead to get what it needs (sunlight and water) and allows the Checkerspot in, but not the deer.