

NGSS AND CCSS FROM VIGNETTE

K-2-ETS1 Engineering Design		
2. Earth's Surface Systems: Processes that shape the Earth		
2-PS1 Matter and its Interactions		
Students who demonstrate understanding can:		
<p>2-ESS2-1. Compare multiple solutions designed to slow or prevent wind and water from changing the shape of the land.</p> <p>2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.</p> <p>2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p> <p>K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p>		
The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i> :		
SCIENCE AND ENGINEERING PRACTICES	DISCIPLINARY CORE IDEAS	CROSSCUTTING CONCEPTS
<p>Developing and Using Models</p> <p>Modeling in K-2 builds on prior experiences and progresses to include using, and developing models that represent concrete objects or design solutions.</p> <ul style="list-style-type: none"> Develop a model to represent patterns in the natural world. <p>Constructing Explanations and designing Solutions.</p> <p>Constructing explanations and designing solutions in K-2 builds on prior experiences and progresses to the use of evidence or ideas in constructing explanations and designing solutions.</p> <ul style="list-style-type: none"> Compare multiple solutions to a problem. <p>Planning and Carrying Out Investigations</p> <p>Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <ul style="list-style-type: none"> Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. 	<p>ESS2.A: Earth Materials and Systems</p> <ul style="list-style-type: none"> Wind and water can change the shape of the land. <p>ESS2.B: Plate Tectonics and Large-Scale System Interactions</p> <ul style="list-style-type: none"> Maps show where things are located. One can map the shapes and kinds of land and water in any area. <p>ETS1.C Optimizing the Design Solution</p> <ul style="list-style-type: none"> Because there is always more than one solution to a problem, it is useful to compare designs, test them, and discuss their strengths and weaknesses. <p>PS1.A: Structure and Properties of Matter</p> <ul style="list-style-type: none"> Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. 	<p>Patterns</p> <ul style="list-style-type: none"> Patterns in the natural world can be observed. <p>Stability and Change</p> <ul style="list-style-type: none"> Some things stay the same while other things change. <p>Energy and Matter</p> <ul style="list-style-type: none"> Objects may break into smaller pieces and be put together into larger pieces, or change shapes. <p>Structure and Function</p> <ul style="list-style-type: none"> The shape and stability of structures of natural and designed objects are related to their function(s).

CCSS Connections for ELA and Mathematics

SL.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and large groups.

2MD.1 Measure and estimate lengths in standard units: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.