

Grade Level Expectations (Grade 5) Landforms

DRAFT

FOSS Investigations	Essential Learning Indicators Targeted
<p>Investigation 1: Schoolyard Models Part 1- Schoolyard Models Part 2- View from Above Part 3 –Mapmaking</p> <p>Investigation 2: Stream Tables Part 1 – Erosion Part 2 – Deposition</p> <p>Investigation 3: Go With the Flow Part 1 –Slope Part 2- Flood Part 3- Designing an Investigation</p> <p>Investigation 4: Build a Mountain Part 1 –Making a Topographic Map Part 2- Drawing a Profile Part 3- FOSS Creek Map</p> <p>Investigation 5: Bird’s-Eye-View Part 1 –Mt Shasta Topographic Map Part 2- Mt Shasta Aerial Photos Part 3- Death Valley & Grand Canyon Maps Part 4- Choosing your own Investigation</p>	<p>*1.2.1 Analyze how the parts of a system go together and how these parts depend on each other. W d Explain how one part of a system depends upon other parts of the same system. f Describe what goes into (input) and out of (output) a system. g Describe the effect on a system when an input in the system is changed.</p> <p>1.2.2 Understand that energy can be transferred from one object to another and can be transformed from one form of energy to another. W a Identify where or when a part of a simple system has the greatest or least energy. b Describe transfers of energy. c Identify sources of energy in systems.</p> <p>*1.2.4 Understand that Earth’s system includes a mostly solid interior, landforms, bodies of water, and an atmosphere. W (Investigations 2, 4 & 5) a Identify and describe various landmasses, bodies of water, and landforms. b Describe how one part of Earth’s system depends on or connects to another part of Earth’s system. c Identify and describe various landmasses, bodies of water, and landforms. d Construct a model that demonstrates understanding of Earth’s structure as a system made of parts</p> <p>*1.3.4 Know processes that change the surface of Earth. W (Investigations 2 & 3) a Describe how weathering and erosion change the surface of the Earth. b Describe how earthquakes, landslides, and volcanic eruptions change the Earth’s surface.</p> <p>*2.1.1 Understand how to ask a question about objects, organisms, and events in the environment. W (Investigations 2, 3 & 5) a Identify the question being answered in an investigation. b Ask questions about events based on observations of the natural world. c Develop a new question that can be investigated with the same materials and/or data as a given investigation.</p> <p>*2.1.2 Understand how to plan and conduct simple investigations following all safety rules. W (Investigations 2 & 3) a Make predictions of the results of an investigation. b Generate a logical plan for, and conduct, a simple controlled investigation with the following attributes: prediction; appropriate materials, tools, and available computer technology; variables kept the same (controlled); one changed variable (manipulated); measured (responding) variable; gather, record, and organize data using appropriate units, charts, and/or graphs; multiple trials. d Identify and use simple equipment and tools to gather data and extend the senses. e Follow all safety rules during investigations.</p> <p>*2.1.3 Understand how to construct a reasonable explanation using evidence. W a Generate a scientific conclusion including supporting data from an investigation. b Describe a reason for a given conclusion using evidence from an investigation. c Generate a scientific explanation of observed phenomena using given data. d Predict what logically might occur if an investigation lasted longer or was changed.</p> <p>*2.1.4 Understand how to use simple models to represent object, events, or processes. W a List similarities and differences between a model and what the model represents. b Create a simple model to represent common objects, events, systems, or processes (e.g. diagram or map and/or physical model). c Investigate phenomena using a simple physical or computer model or simulation. d Describe reasons for using a model to investigate phenomena (e.g. processes that happen very slowly or quickly, things that are too small or too large for direct observation; phenomena that cannot be controlled or are potentially dangerous).</p> <p>*2.1.5 Understand how to report investigations and explanations of objects, events, systems, and processes. W a Report observations or data of simple investigations without making inferences. b Summarize an investigation by describing: reasons for selecting the investigation plan; materials used in the investigation; observations, data, results; explanations and conclusions in written, mathematical, oral, and information technology presentation formats; safety procedures used.</p>

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	<p>2.2.1 Understand that all scientific observations should be reported accurately and honestly even when the observations contradict expectations. <i>W</i></p> <ul style="list-style-type: none"> a Explain why scientific observations are recorded accurately and honestly. b Explain why scientific records of observations are not changed even when the records do not match initial expectations. c Explain why honest acknowledgement of the contributions of others and information sources are necessary. <p>2.2.2 Understand that scientific facts are measurement and observations of phenomena in the natural world that are repeatable and/or verified by expert scientists. <i>W</i></p> <ul style="list-style-type: none"> a Describe how new scientific facts are established every day. b Describe whether measurements and/or observations of phenomena are scientific facts. c Describe whether a report of an observation is a scientific fact or an interpretation. <p>2.2.3 Understand why similar investigation may not produce similar results. <i>W</i></p> <ul style="list-style-type: none"> a Describe reasons why two similar investigations can produce different results (e.g. identify possible sources of error). b Explain whether sufficient information has been obtained to make a conclusion. <p>*3.1.3 Analyze how well a design or a product solves a problem. <i>W</i></p> <ul style="list-style-type: none"> a Identify the criteria for an acceptable solution to a problem or challenge. b Describe the reason(s) for the effectiveness of a solution to a problem or challenge using scientific concepts and principles. d Describe how to change a system to solve a problem or improve a solution to a problem. e Test how well a solution works based on criteria, and recommend and justify, with scientific concepts or principles and data, how to make it better. <p>*3.2.2 Understand that people have invented tools for everyday life and for scientific investigations. <i>W</i></p> <ul style="list-style-type: none"> a Describe tools (technology) invented to advance scientific investigations (e.g. thermometers, rulers, microscope, telescopes). b Describe how scientific tools help people design solutions to human problems. c Describe how common tools help people design ways to adapt to different environments d Describe how scientific ideas and discoveries are used to design solutions to human problems, extend human ability, or help humans adapt to different environments.

*GLEs assessed in formative assessments found in WA Assessment Folio.

Statements in italics indicate that the GLE or evidence of learning are not currently addressed in the kit but could be included through intentional activities such as extension activities, FOSS science stories, and other resources