Grade Level Expectations (Grade 6)
Landforms

DRAFT

FOSS Investigations	Essential Learning Indicators Targeted
Investigation 1: **Schoolyard Models** Part 1- Schoolyard Models Part 2- View from Above Part 3 –Mapmaking **Investigation 2:** **Stream Tables** Part 1 – Erosion Part 2 – Deposition **Investigation 3:** **Go With the Flow** Part 1 –Slope Part 2- Flood Part 3- Designing an Investigation **Investigation 4:** **Build a Mountain** Part 1 –Making a Topographic Map Part 2- Drawing a Profile Part 3- FOSS Creek Map **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	1.2.1 Analyze how the parts of a system interconnect and influence each other. W • Explain how the parts of a system interconnect and influence each other. • Describe the flow of matter and energy through a system (i.e. energy and matter inputs, outputs, transfers and transformations). 1.2.4 Understand the components and interconnections of Earth's systems. W (Investigations 2, 4 & 5) • Describe the components of the Earth's systems (i.e. *the core, the mantle, oceanic and crustal plates,* landforms, *the hydrosphere and atmosphere).* • Describe the interactions among the components of Earth's systems. 1.3.4 Understand the processes that continually change the surface of Earth. W (Investigations 2 & 3) • Describe the processes by which soils are formed (e.g. erosion and deposition in river systems). • *Describe how constructive processes change landforms (e.g. crustal deformation, volcanic eruption,* deposition of sediment*).* • Describe how destructive processes change landforms (e.g. rivers erode landforms) 2.1.1Understand how to generate a question that can be answered through scientific investigation. W (Investigations 2, 3 & 5) • Generate multiple questions based on observations. • Generate a question that can be investigated scientifically. • Generate a new question that can be investigated with the same materials and/or data as a given investigation. 2.1.2 Understand how to plan and conduct scientific investigations. W (Investigations 2 & 3) • Make predictions (hypothesize) and give reasons. • Generate a logical plan for, and conduct, a scientific controlled investigation with the following attributes: prediction (hypothesis); appropriate materials, tools, and available computer technology; controlled variables (kept the same); one manipulate (changed) variable ; responding(dependent) variable; gather, record, and organize data using appropriate units, charts, and/or graphs; multiple trials. • Identify and explain safety requirements that would be needed in the investigation. 2.1.3 Apply understanding of how to construct a scientific explanation using evidence and inferential logic. W • Generate a scientific conclusion including supporting data from an investigation using inferential logic. • Describe a reason for a given conclusion using evidence from an investigation. • Generate a scientific explanation of an observed phenomenon using given data. • Predict what logically might occur if an investigation lasted longer or changed. • Describe the difference between evidence (data) and conclusions. 2.1.4 Analyze how models are used to investigate objects, events, and processes. W • Compare models or computer simulations of phenomenon to the actual phenomena. • Explain how models or computer simulations are used to investigate and predict the behavior of objects, events, systems, or processes. • Create a model or computer simulation to investigate and predict the behavior of objects, events, systems, or processes. • Explain the advantages and limitations of investigating with a model. 2.1.5 Apply understanding of how to report investigations and explanations of objects, events, systems, and processes. W • Report observations scientific investigations without making inferences. • 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. 2.2.1 Apply curiosity, honesty, skepticism, and openness when considering explanations and conduction investigations. W • Explain why an honest response to questionable results, conclusions, or explanations is important to the scientific enterprise. • Describe a flaw in a claim or a conclusion (e.g. limited data, flawed procedure, or overgeneralization). • Describe how scientists accurately and honestly record, report, and share observations and measurements without bias. • Explain why honest acknowledgement of the contributions of others and information sources are necessary.