WASHINGTON STATE LASER

Alignment of Washington 6-8 Science Standards by EALR/Domain for

STC/MS

Catastrophic Events

November 1, 2010

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Alignment of Washington 6-8 Science Standards by Lesson Number for

STC/MS

Catastrophic Events

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Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 01

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 1.2, SG pp 4-5	**Aligned as designed**	
INQH	Science advances through openness to new ideas, honesty, and legitimate skepticism. Asking thoughtful questions, querying other scientists' explanations, and evaluating one's own thinking in response to the ideas of others are abilities of scientific inquiry.	• Recognize flaws in scientific claims, such as uncontrolled variables, over generalizations from limited data, and experimenter bias. • Listen actively and respectfully to research reports by other students. Critique their presentations respectfully, using logical argument and evidence. • Engage in reflection and self-evaluation.	Inquiry 1.1, SG pp 4-5; Inquiry 1.2, SG pp 4-5	**Aligned with modifications (see comments)**	Teachers need to emphasize listening to and respecting other students' ideas.
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	• Describe how a technology has changed over time in response to societal challenges.	Reading: Views From Space, SG pp 8-11	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 01

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPB	Scientists and technological designers (including engineers) have different goals. Scientists answer questions about the natural world; technological designers solve problems that help people reach their goals.	• Investigate several professions in which an understanding of science and technology is required. Explain why that understanding is necessary for success in each profession.	Reading: How Scientists Study the Earth, SG pp 6-7	**Aligned as designed**	
APPC	Science and technology are interdependent. Science drives technology by demanding better instruments and suggesting ideas for new designs. Technology drives science by providing instruments and research methods.	• Give examples to illustrate how scientists have helped solve technological problems (e.g., how the science of biology has helped sustain fisheries) and how engineers have aided science (e.g., designing telescopes to discover distant planets).	Reading: Views From Space, SG pp 8-11	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 02

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 2.1, SG pp 14-16	**Aligned as designed**	
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Reading: That's a Fact: An Introduction to Thunderstorms, Tornadoes, and Hurricanes, SG pp 21-25; Student Sheet 2.1, TG p 26	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard that the sun is the major source of energy to heat air and water on earth. Students are asked to create a vortex in Inquiry 2.1. This lesson is a part of a conceptual sequence in the use of the term vortex.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 03

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data; Student Sheet 3.1a, TG p 42	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data; Student Sheet 3.1a, TG p 42	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data; Student Sheet 3.1a, TG p 42	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 03

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Student Sheet 3.1b: Interpreting a Data Table, TG p 43	**Aligned as designed**	
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data; Student Sheet 3.1a, TG p 42	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data; Student Sheet 3.1a, TG p 42	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 03

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data p 37; Student Sheet 3.1a, TG p 42	**Aligned as designed**	
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Inquiry 3.1, SG pp 28-30, Inquiry Master 3.1a: Plotting Soil and Water Data; Student Sheet 3.1a, TG p 42	**Aligned as designed**	
APPC	Science and technology are interdependent. Science drives technology by demanding better instruments and suggesting ideas for new designs. Technology drives science by providing instruments and research methods.	• Give examples to illustrate how scientists have helped solve technological problems (e.g., how the science of biology has helped sustain fisheries) and how engineers have aided science (e.g., designing telescopes to discover distant planets).	Reading: Joseph Henry: The Father of Weather Forecasting, SG pp 37-41	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
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Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPH	People in all cultures have made and continue to make contributions to society through science and technology.	• Describe scientific or technological contributions to society by people in various cultures.	Reading: Joseph Henry: The Father of Weather Forecasting, SG pp 37-41	**Aligned as designed**	
PS3A	Energy exists in many forms: heat, light, chemical, electrical, motion of objects, and sound. Energy can be transformed from one form to another and transferred from one place to another.	• List different forms of energy (e.g., thermal, light, chemical, electrical, kinetic, and sound energy). • Describe ways in which energy is transformed from one form to another and transferred from one place to another (e.g., chemical to electrical energy in a battery, electrical to light energy in a bulb).	Inquiry 3.1, SG pp 28-30; Reading: The Source of the Earth's Heat, SG pp 31-33	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms light energy, thermal energy, transformed, and transferred.
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Inquiry 3.1, SG pp 28-30; Reading: The Source of the Earth's Heat, SG pp 31-33	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard that heat flows from warmer to cooler objects.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 03

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2A	The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.	• Describe the composition and properties of the troposphere and stratosphere.	Reading - The Atmosphere: A Blanket of Air, SG pp 34-36	**Aligned as designed**	
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Inquiry 3.1, SG pp 28-30; Reading: The Source of Earth's Heat, SG pp 31-33; Reading: The Atmosphere: A Blanket of Air, SG pp 34-36	**Aligned as designed**	
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Reading - The Atmosphere: A Blanket of Air, SG pp 34-36	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 04

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSC	The output of one system can become the input of another system.	• Give an example of how output of matter or energy from a system can become input for another system	Inquiry 4.2, SG pp 46-48; Student Sheet 4.1: Investigating the Temperature of Air, TG p 55	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms system, input and output.
SYSD	In an open system, matter flows into and out of the system. In a closed system, energy may flow into or out of the system, but matter stays within the system.	• Given a description of a system, analyze and defend whether it is open or closed.	Inquiry 4.2, SG pp 46-48; Student Sheet 4.1: Investigating the Temperature of Air, TG p 55	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 4.2, SG pp 46-48; Student Sheet 4.1: Investigating the Temperature of Air, TG p 55	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 04

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 4.2, SG pp 46-48; Student Sheet 4.1: Investigating the Temperature of Air, TG p 55	**Aligned as designed**	
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 4.2, SG pp 46-48; Student Sheet 4.1: Investigating the Temperature of Air, TG p 55	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 4.2, SG pp 46-48; Student Sheet 4.1: Investigating the Temperature of Air, TG p 55	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 04

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPB	Scientists and technological designers (including engineers) have different goals. Scientists answer questions about the natural world; technological designers solve problems that help people reach their goals.	• Investigate several professions in which an understanding of science and technology is required. Explain why that understanding is necessary for success in each profession.	Reading: What's the Forecast?, SG pp 50-53	**Aligned as designed**	
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Inquiry 4.1, SG pp 44-45; Reflection #1, SG p 45 and TG p 51; Inquiry 4.2, SG pp 46-47	**Aligned as designed**	The unit/lesson intentionally refers to heat flow from warmer to cooler objects when the reflection question is assigned and discussed as described in TG.
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Inquiry 4.2, SG pp 46-48; Reading: Air Masses, SG p 49	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
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Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSA	Any system may be thought of as containing subsystems and as being a subsystem of a larger system.	• Given a system, identify subsystems and a larger encompassing system	Inquiry 5.1, SG pp 56-58; Reading: Why Does the Wind Blow?, SG pp 59-62	**Aligned with modifications (see comments)**	The lesson contains many opportunities to discuss systems and subsystems. Teacher must be intentional about use of the terms subsystem when referring to the convection tube before they are put together and then system when the convection tubes are connected.
SYSC	The output of one system can become the input of another system.	• Give an example of how output of matter or energy from a system can become input for another system	Inquiry 5.1, SG pp 56-58	**Aligned with modifications (see comments)**	The unit/lesson contains many opportunities to discuss inputs and outputs when referring to the smoke entering the convection tube system.
SYSD	In an open system, matter flows into and out of the system. In a closed system, energy may flow into or out of the system, but matter stays within the system.	• Given a description of a system, analyze and defend whether it is open or closed.	Inquiry 5.1, SG pp 56-58; Reading: Why Does the Wind Blow?, SG pp 59-61	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms open system, closed system, and matter.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 05

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 5.1, SG pp 56-58; Reading: Why Does the Wind Blow?, SG pp 59-61	**Aligned as designed**	
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Inquiry 5.1, SG pp 56-58; Reading: Why Does the Wind Blow, SG pp 59-62; Reading: Weather Fronts, SG p 63	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard that the movement of heat will continue until the air in both convection tubes reach the same temperature.
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Reading: Why Does the Wind Blow?, SG pp 59-62; Reading: Weather Fronts, SG p 63	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 05

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Inquiry 5.1, SG pp 56-58; Reading: Why Does the Wind Blow?, SG pp 59 -62; Reading: Weather Fronts, SG p 63	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 06

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 6.3, SG p 75; Student Sheet 6.2, TG pp 79-81; Student Sheet 6.3, TG p 82	**Aligned as designed**	
APPG	The benefits of science and technology are not available to all the people in the world.	• Contrast the benefits of science and technology enjoyed by people in industrialized and developing nations.	Reading: Hurricane Mitch, SG pp 78-79	**Aligned as designed**	
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Inquiry 6.1, SG p 71; Reading: Hurricane Formation and the Water Cycle, SG p 72; Inquiry 6.2, SG pp 73-74; Reading: The Truth About Air, SG pp 76-77	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 07

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Inquiry 7.2, SG pp 88-91	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard that mechanical mixing (by wind) is a means of heat transfer.
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Getting Started, SG pp 81-82; Inquiry 7.1, SG pp 83-87	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Student Sheet 8.1c: Storms Assessment (Part C), TG pp 120-121	**Aligned as designed**	
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Student Sheet 8.1a: Storms Assessment (Part A), TG p 124	**Aligned as designed**	
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Student Sheet 8.1b: Storms Assessment (Part B), TG pp 112-119, 125	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Student Sheet 8.1a: Storms Assessment (Part A), TG p 124	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. Students are asked to demonstrate conceptual understanding of standards in Lessons 1-7.
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Student Sheet 8.1b: Storms Assessment (Part B), TG pp 112-119, 125	**Aligned as designed**	
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Student Sheet 8.1b: Storms Assessment (Part B), TG pp 112-119, 125	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 09

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Getting Started, SG pp 103-104	**Aligned as designed**	
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Getting Started, SG pp 103-104	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 10

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2F	The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.	• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates. • Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.	Inquiry 10.1, SG pp 116-117	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Inquiry 1.2, SG p 5	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 11

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPF	Solutions must be tested to determine whether or not they will solve the problem. Results are used to modify the design, and the best solution must be communicated persuasively.	• Test the best solution by building a model or other representation and using it with the intended audience. Redesign as necessary. • Present the recommended design using models or drawings and an engaging presentation.	Inquiry 11.2, SG pp 128-129; Student Sheet 11.2, TG pp 160-162	**Aligned as designed**	
PS3F	Energy can be transferred from one place to another through waves. Waves include vibrations in materials. Sound and earthquake waves are examples. These and other waves move at different speeds in different materials.	• Contrast a light wave with a sound wave by identifying that both have characteristic wavelengths, but light waves can travel through a vacuum while sound waves cannot. • Explain that sound is caused by a vibrating object.	Getting Started, TG p 154; Inquiry 11.1, SG pp 122-127	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 12

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 12.1, SG pp 137-141	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 12.1, SG pp 137-141	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 12.1, SG pp 137-141	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 12

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 12.1, SG pp 137-141	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 12.1, SG pp 137-141, Inquiry 12.2, SG p 142	**Aligned with modifications (see comments)**	Teachers need to ask students to explain how the model seismogram is similar to the seismogram they interpret in Inquiry 12.2.
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 12.1, SG pp 137-141, Inquiry 12.2, SG p 142	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 12

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPH	People in all cultures have made and continue to make contributions to society through science and technology.	• Describe scientific or technological contributions to society by people in various cultures.	Reading: A Brief History of Earthquake Detection, SG p 136	**Aligned as designed**	
PS3F	Energy can be transferred from one place to another through waves. Waves include vibrations in materials. Sound and earthquake waves are examples. These and other waves move at different speeds in different materials.	• Contrast a light wave with a sound wave by identifying that both have characteristic wavelengths, but light waves can travel through a vacuum while sound waves cannot. • Explain that sound is caused by a vibrating object.	Inquiry 12.1, SG pp 137-141; Inquiry 12.2, SG pp 142-145; Inquiry 12.3, SG pp 146-151	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 13

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2F	The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.	• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates. • Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.	Inquiry 13.1, SG pp 156-158	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 14

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS3F	Energy can be transferred from one place to another through waves. Waves include vibrations in materials. Sound and earthquake waves are examples. These and other waves move at different speeds in different materials.	• Contrast a light wave with a sound wave by identifying that both have characteristic wavelengths, but light waves can travel through a vacuum while sound waves cannot. • Explain that sound is caused by a vibrating object.	Reading: Using Waves to Explore the Earth's Interior, SG pp 168-169	**Aligned as designed**	
ES2E	The solid Earth is composed of a relatively thin crust, a dense metallic core, and a layer called the mantle between the crust and core that is very hot and partially melted.	• Sketch and label the major layers of Earth, showing the approximate relative thickness and consistency of the crust, core, and mantle.	Getting Started, TG p 191; Inquiry 14.1, SG p 166; Reading: The Earth's Interior, SG p 167; Reading: Using Waves to Explore the Earth's Interior, SG pp 168-169	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 15

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 15

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 15

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	
PS1B	Friction is a force that that can help objects start moving, stop moving, slow down or can change the direction of the object's motion.	• Demonstrate and explain the frictional force acting on an object with the use of a physical model.	Inquiry 15.3, SG pp 179-181; Student Sheet 15.3a, TG pp 214-216	**Aligned as designed**	
ES2F	The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.	• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates. • Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.	Getting Started, TG p 203, Inquiry 15.1, SG pp 172-175; Inquiry 15.2, SG pp 176-178; Inquiry 15.3, SG pp 179-185; Reading: Earth's Moving Plates: A Look Back, SG pp 186-189	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 15

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Getting Started, TG p 203, Inquiry 15.1, SG pp 172-175; Inquiry 15.2, SG pp 176-178; Inquiry 15.3, SG pp 179-185; Reading: Earth's Moving Plates: A Look Back, SG pp 186-189	**Aligned as designed**	
ES3A	Our understanding of Earth history is based on the assumption that processes we see today are similar to those that occurred in the past.	• Describe Earth processes that we can observe and measure today (e.g., rate of sedimentation, movement of crustal plates, and changes in composition of the atmosphere) that provide clues to Earth's past.	Reading: Earth's Moving Plates: A Look Back, SG pp 186-189	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 16

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Inquiry 16.1, SG pp 192-193	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard that heat flows from warmer to cooler objects, which is magma in this lesson. In this case, convection is the means of heat transfer. Tie this concept back to part 1 lesson involving convection currents in the air.
ES2F	The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.	• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates. • Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.	Inquiry 16.1, SG pp 192-193	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 17

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. Students are asked to demonstrate conceptual understanding of standards in Lessons 10 -16.
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 17

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 17

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Inquiry Master 17.1a: Earthquakes Performance-Based Assessment (Part A) Earthquakes and Human Risk, TG p 239 and pp 249-251	**Aligned as designed**	
PS3F	Energy can be transferred from one place to another through waves. Waves include vibrations in materials. Sound and earthquake waves are examples. These and other waves move at different speeds in different materials.	• Contrast a light wave with a sound wave by identifying that both have characteristic wavelengths, but light waves can travel through a vacuum while sound waves cannot. • Explain that sound is caused by a vibrating object.	Inquiry Master 17.1b: Earthquakes Written Assessment (Part B), TG pp 240-244	**Aligned as designed**	
ES2E	The solid Earth is composed of a relatively thin crust, a dense metallic core, and a layer called the mantle between the crust and core that is very hot and partially melted.	• Sketch and label the major layers of Earth, showing the approximate relative thickness and consistency of the crust, core, and mantle.	Inquiry Master 17.1b: Earthquakes Written Assessment (Part B), TG pp 240-244	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 17

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2F	The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.	• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates. • Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.	Inquiry Master 17.1b: Earthquakes Written Assessment (Part B), TG pp 240-244	**Aligned as designed**	
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Inquiry Master 17.1b: Earthquakes Written Assessment (Part B), TG pp 240-244	**Aligned as designed**	
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Inquiry Master 17.1b: Earthquakes Written Assessment (Part B), TG pp 240-244	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 18

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	• Describe how a technology has changed over time in response to societal challenges.	Inquiry 18.1, SG pp 202-203	**Aligned as designed**	
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Reading: Volcanoes: Help or Hindrance?, SG pp 206-209	**Aligned as designed**	
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Inquiry 18.1, SG pp 202-205; Reading: Volcanoes: Help or Hindrance?, SG pp 206-209	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 19

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPB	Scientists and technological designers (including engineers) have different goals. Scientists answer questions about the natural world; technological designers solve problems that help people reach their goals.	• Investigate several professions in which an understanding of science and technology is required. Explain why that understanding is necessary for success in each profession.	Reading: Volcanologists Talk About Their Work, SG pp 222-223	**Aligned as designed**	
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Inquiry 19.1, SG pp 211-216; Inquiry 19.2, SG pp 217-220; Reading: An Island Is Born, SG p 221	**Aligned as designed**	
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Inquiry 19.1, SG pp 211-216; Inquiry 19.2, SG pp 217-220; Reading: An Island Is Born, SG p 221	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 20

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 20

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 20

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1 a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned as designed**	
INQH	Science advances through openness to new ideas, honesty, and legitimate skepticism. Asking thoughtful questions, querying other scientists' explanations, and evaluating one's own thinking in response to the ideas of others are abilities of scientific inquiry.	• Recognize flaws in scientific claims, such as uncontrolled variables, over generalizations from limited data, and experimenter bias. • Listen actively and respectfully to research reports by other students. Critique their presentations respectfully, using logical argument and evidence. • Engage in reflection and self-evaluation.	Inquiry 20.1, SG pp 226-228; Inquiry Master Student Sheet 20.1a and 20.1b, TG pp 290-291; Inquiry Master 20.1, TG p 289	**Aligned with modifications (see comments)**	The teacher needs to be intentional about discussing the standard listen actively and respectfully to research reports by other students. Critique their presentations respectfully, using logical argument and evidence.
PS2A	Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Inquiry 20.1, SG pp 226-228	**Aligned as designed**	Viscosity is not specifically mentioned in the standard but is an intrinsic property of matter.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 20

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Getting Started, TG p 283; Inquiry 20.1, SG pp 226-228; Reading: Volcano Types, SG pp 229-231	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 21

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS2A	Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Inquiry 21.1, SG pp 234-235; Student Sheet 21.1, TG p 301	**Aligned as designed**	The unit/lesson intentionally refers to the intrinsic properties of color, crystal size, and texture.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 22

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Inquiry 22.1, SG pp 242-245; Student Sheet 22.1a, TG p 314	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 22.1, SG pp 242-245; Student Sheet 22.1a, TG p 314	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 22.1, SG pp 242-245; Student Sheet 22.1a, TG p 314	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 22

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 22.1, SG pp 242-245; Student Sheet 22.1a, TG p 314	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 22.1, SG pp 242-245; Student Sheet 22.1a, TG p 314	**Aligned as designed**	
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Inquiry 22.1, SG pp 242-245; Student Sheet 22.1a, TG p 314	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 22

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS2A	Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Getting Started, TG pp 307-308; Inquiry 22.1, SG pp 242-245; Student Sheet 22.1b, TG p 315	**Aligned as designed**	
PS2B	Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.	• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture. • Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.	Inquiry 22.1, SG pp 242-245	**Aligned as designed**	
ES2D	Water is a solvent. As it passes through the water cycle, it dissolves minerals and gases and carries them to the oceans.	• Distinguish between bodies of saltwater and fresh water and explain how saltwater became salty.	Inquiry 22.1, SG pp 242-245; Reading: Earth's Waterworks, SG pp 246-249	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 22

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2H	The rock cycle describes the formation of igneous rock from magma or lava, sedimentary rock from compaction of eroded particles, and metamorphic rock by heating and pressure.	• Identify samples of igneous, sedimentary, and metamorphic rock from their properties and describe how their properties provide evidence of how they were formed. • Explain how one kind of rock could eventually become a different kind of rock.	Inquiry 22.1, SG pp 242-245; Reading: The Rock Cycle, SG pp 250-251; Inquiry Master 22.1, TG p 313	**Aligned as designed**	
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Reflection #9, SG p 245	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 23

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS2A	Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Getting Started, TG p 322; Inquiry 23.1, SG pp 254-257; Inquiry Master 23.1, TG p 327	**Aligned as designed**	
PS2B	Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.	• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture. • Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.	Inquiry 23.1, SG pp 254-257	**Aligned as designed**	
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Reading: Mt. St. Helen's Erupts, SG pp 258-263	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 23

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2H	The rock cycle describes the formation of igneous rock from magma or lava, sedimentary rock from compaction of eroded particles, and metamorphic rock by heating and pressure.	• Identify samples of igneous, sedimentary, and metamorphic rock from their properties and describe how their properties provide evidence of how they were formed. • Explain how one kind of rock could eventually become a different kind of rock.	Inquiry 23.1, SG pp 254-257	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 24

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 24

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 24

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Inquiry 24.1, SG pp 266-269; Inquiry Master 24.1, TG p 339; Student Sheet 24.1a, TG p 340, Student Sheet 24.1b, TG p 341	**Aligned as designed**	
PS2A	Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Student Sheet 24.1c, TG pp 342-346	**Aligned with modifications (see comments)**	The unit/lesson is an integral part of a learning progression.
PS2B	Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.	• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture. • Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.	Inquiry 24.1, SG pp 266-269, Student Sheet 24.1c, TG pp 342-346	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 24

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.	Student Sheet 24.1c, TG pp 342-346	**Aligned with modifications (see comments)**	The unit/lesson is an integral part of a learning progression.
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Video: The Eruption of Mount St. Helen's; Reflection #4, SG p 269; Reading: Volcano in a Cornfield, SG pp 270-273, Student Sheet 24.1c, TG pp 342-346	**Aligned as designed**	
ES2H	The rock cycle describes the formation of igneous rock from magma or lava, sedimentary rock from compaction of eroded particles, and metamorphic rock by heating and pressure.	• Identify samples of igneous, sedimentary, and metamorphic rock from their properties and describe how their properties provide evidence of how they were formed. • Explain how one kind of rock could eventually become a different kind of rock.	Student Sheet 24.1c, TG pp 342-346	**Aligned as designed**	The unit/lesson is an integral part of a learning progression.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 24

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Student Sheet 24.1c, TG pp 342-346	**Aligned with modifications (see comments)**	The unit/lesson is an integral part of a learning progression.

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 25

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	The unit/lesson is an integral part of a learning progression. Students are asked to demonstrate conceptual understanding of standards in Lessons 18-24.
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked. • Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis. • Work collaboratively with other students to carry out the investigations.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	• Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative. • Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words. • Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 25

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.	• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	
INQE	Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.	• Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	• Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation). • Describe the differences between an objective summary of the findings and an inference made from the findings.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 25

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.	Volcanoes Performance-Based Assessment (Part A), TG pp 348-350; Inquiry Master 25.1a, TG pp 366-368	**Aligned as designed**	
PS2A	Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Inquiry Master 25.1b, TG pp 356-359, Inquiry Master 25.1a Rock Identification Sheet (Part B), TG p 355	**Aligned as designed**	
PS2B	Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.	• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture. • Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.	Inquiry Master 25.1b, TG pp 356-359, Inquiry Master 25.1a Rock Identification Sheet (Part B), TG p 355	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 25

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2F	The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.	• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates. • Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.	Inquiry Master 25.1b, TG pp 356-359, Inquiry Master 25.1a Rock Identification Sheet (Part B), TG p 355	**Aligned as designed**	
ES2G	Land forms are created by processes that build up structures and processes that break down and carry away material through erosion and weathering.	• Explain how a given land form (e.g., mountain) has been shaped by processes that build up structures (e.g., uplift) and by processes that break down and carry away material (e.g., weathering and erosion).	Inquiry Master 25.1b, TG pp 356-359, Inquiry Master 25.1a Rock Identification Sheet (Part B), TG p 355	**Aligned as designed**	
ES2H	The rock cycle describes the formation of igneous rock from magma or lava, sedimentary rock from compaction of eroded particles, and metamorphic rock by heating and pressure.	• Identify samples of igneous, sedimentary, and metamorphic rock from their properties and describe how their properties provide evidence of how they were formed. • Explain how one kind of rock could eventually become a different kind of rock.	Inquiry Master 25.1b, TG pp 356-359, Inquiry Master 25.1a Rock Identification Sheet (Part B), TG p 355	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
STC/MS Catastrophic Events ~ Lesson 25

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Inquiry Master 25.1b, TG pp 356-359, Inquiry Master 25.1a Rock Identification Sheet (Part B), TG p 355	**Aligned as designed**	
ES3D	Earth has been shaped by many natural catastrophes, including earthquakes, volcanic eruptions, glaciers, floods, storms, tsunami, and the impacts of asteroids.	• Interpret current land forms of the Pacific Northwest as evidence of past geologic events (e.g., Mount St. Helen's and Crater Lake provide evidence of volcanism, the Channeled Scablands provides evidence of floods that resulted from melting of glaciers).	Student Sheet 25.1c, TG pp 270-271	**Aligned as designed**	