

Name: _____

Hour: _____ Date: _____

Unit 8.6

Lesson 1 - Unit Challenge Scenario:

State governors around the country request your help. They have heard about five types of natural hazards that can occur suddenly and cause a disaster. The governors fear that they don't know enough about natural hazards. They want to protect lives and property. You and your classmates are scientists who work for the U.S. Geological Survey. You will be divided into teams to help each governor. The governors request you:

- identify which natural hazard is likely to most threaten people and property in their state.
- identify technologies that can help protect people and property from the most threatening natural hazard.
- create a Public Service Announcement (PSA) to inform the public about what you learn.

You will present your PSA to a panel from the Federal Emergency Management Agency (FEMA). The teams that support their forecasts with evidence will receive \$1 million from FEMA to help their assigned state.

STATE: _____ ; **GOVERNOR:** _____

Name:

Names of Team Members:

Lesson 1: Prediction

Make a Prediction:

Circle the natural hazards that you are sure occur in your assigned state. Cross out the ones you are sure don't occur. Put a question mark ("?") next to any that you are not sure about.

FLOOD VOLCANIC ERUPTION EARTHQUAKE HURRICANE TORNADO

Rate the natural hazards from 0 - 10 in terms of how much you think they will harm people and property in your state over the next 50 years. (0 is "not at all" and 10 is "catastrophe") If you are not sure about a hazard, put a question mark ("?").

FLOOD ____ VOLCANIC ERUPTION ____ EARTHQUAKE ____ HURRICANE ____ TORNADO ____

What evidence supports your prediction?

Name: _____

Hour: _____ Date: _____

Unit 8.6

Lessons 2-5: Hazard Forecast

Lesson 2: How can we predict which natural hazards will threaten our state?

How could what you learned in this lesson about patterns of past events help you with the Unit Challenge?

Does what you learned give you any ideas for investigations or data that might help you solve the Unit Challenge?

Lesson 3: Which natural hazards have occurred most often in your state?

Lesson 3 Evidence: Record the # of events that occurred in your state and the period of time over which these events occurred. Calculate events per year (frequency) for all five types of natural hazards.

<u>Natural Hazard:</u>	Number of events:	Period of time (years):	Events per year:
Earthquake			
Hurricane			
Flood			
Tornado			
Volcanic eruption			

Circle the three natural hazards above that have occurred most frequently in the state.

Lesson 3 Forecast: Make a claim that forecasts which three natural hazards are most likely to occur in your state.

Name: _____

Hour: _____ Date: _____

Unit 8.6

Support the claim with evidence and reasoning.

Claim:

Of the five natural hazards we are studying, _____, _____, and _____ are **most likely** to occur in my state.

Evidence:

The evidence that supports my claim is:

Reasoning:

This evidence supports my claim because:

Name: _____

Hour: _____

Date: _____

Unit 8.6

Lesson 4: Which natural hazards have had the greatest impacts on your state?

List the three hazards you identified in Lesson 3:			
	Natural Hazard 1: _____	Natural Hazard 2: _____	Natural Hazard 3: _____
Lesson 4 Evidence			
For each hazard, what is the date of the most costly event that has affected your state?			
What was the cost of the event?	\$	\$	\$
How many deaths resulted?			
What was the magnitude / intensity of the event?			

Lesson 4: Watch a video of a natural hazard event of this magnitude or intensity and make observations about the impacts on people.

Observations: What do you see?			
What kinds of problems or difficulties is this hazard causing for people?			

Lesson 4 Forecast: Make a claim that forecasts which type of natural hazard is **most likely** to have the greatest impacts on your state. Remember that your governor wants to protect lives and property. Support the claim with evidence and reasoning.

Claim: The natural hazard _____ is most likely to have the greatest impacts on the state of _____ in the future. These impacts may include _____, _____, and _____.

Evidence: The evidence that supports my claim is:

Reasoning: This evidence supports my claim because:

Lesson 5: What causes the natural hazard that affects your state?

Natural hazard that your team forecasts is most likely to have the worst effects on the state : _____

Cause of hazard:

Write an explanation to describe what causes the hazard event.

Draw a diagram to support your explanation. Be sure to include geographic features in your diagram.

Name: _____

Hour: _____ Date: _____

Unit 8.6

<p>Lesson 5: <i>Where in your state is the natural hazard most likely to occur?</i></p>	
<p>Lesson 5 Forecast: Use evidence from maps and your knowledge of natural hazards to make a claim that forecasts the locations in the state where the hazard is most likely to occur. Support the claim with evidence and reasoning.</p>	
<p>Claim: Sketch or paste in an outline of your state below. Using one color for "MOST LIKELY" and a second color for "LEAST LIKELY", make a claim about where the natural hazard is MOST LIKELY and LEAST LIKELY to occur.</p>	<p>Evidence: The evidence that supports my claim is:</p>
	<p>Reasoning: This evidence supports my claim because:</p>

Name: _____

Hour: _____ Date: _____

Unit 8.6

Lesson 6: *To what extent can we reliably predict when the natural hazard will occur in your state?*

Natural hazard that your team forecasts is most likely to have the worst effects on the state : _____

Describe whether the natural hazard can be predicted.

Be sure to include in your description:

- Whether there are any events that precede the natural hazard (precursors)
- How precursors help predict the natural hazard
- How far in advance you can predict the natural hazard

Technology Recommendation

Lesson 7: How can technology reduce the effects of the natural hazard on your state?

Natural hazard that your team forecasts is most likely to have the worst impacts on the state: _____

Your governor wants to do whatever she can to reduce the impacts that this natural hazard has on your state. List below at least two technologies that she can use to reduce these impacts. Your governor will not be willing to pay for these technologies unless you provide an explanation of how the technology will reduce impacts.

	Technology 1:	Technology 2:
<p>Explain how the technology works.</p> <p>Draw a model to support your explanation.</p>		