LESSON PLAN

Earth

Teacher Notes:

SC State Standards:

2-3.2-- Recall weather terminology (including temperature, wind direction, wind speed, and precipitation as rain, snow, sleet, and hail).
2-3.6-- Identify safety precautions that one should take during severe weather conditions.

4-4.3-- Compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature) and patterns.
4-4.4-- Summarize the conditions and effects of severe weather phenomena (including thunderstorms, hurricanes, and tornadoes) and related safety concerns.

6-4.4-- Summarize the relationship of the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions.
6-4.6-- Predict weather conditions and patterns based on weather data collection from direct observations and measurements, weather maps, satellites, and radar.

8-3.6-- Explain how the theory of plate tectonics accounts for the motion of the lithospheric plates, the geologic activities at the plate boundaries, and the changes in landform areas over geologic time.
8-3.7-- Illustrate the creation and changing of landforms that have occurred through geologic processes (including volcanic eruptions and mountain-building forces).

ES-3.2-- Explain the differentiation of the structure of Earth's layers into a core, mantle, and crust based on the production of internal heat from the decay of isotopes and the role of gravitational energy.
ES-3.4-- Explain how forces due to plate tectonics cause crustal changes as evidenced in earthquake activity, volcanic eruptions, and mountain building.
ES-4.8-- Predict weather conditions and storms (including thunderstorms, hurricanes, and tornadoes) on the basis of the relationship among the movement of air masses, high and low pressure systems, and frontal boundaries.

Common Core Literacy Standards:

CCSS.ELA-Literacy.RST.6-8.1-- Cite specific textual evidence to support analysis of science and technical texts.
CCSS.ELA-Literacy.RST.6-8.2-- Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
CCSS.ELA-Literacy.RST.6-8.3-- Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

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CCSS.ELA-Literacy.RST.6-8.4-- Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6–8 texts and topics*.
CCSS.ELA-Literacy.RST.6-8.7-- Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
CCSS.ELA-Literacy.RST.6-8.8-- Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
CCSS.ELA-Literacy.RST.6-8.9-- Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

CCSS.ELA-Literacy.RST.9-10.1-- Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
CCSS.ELA-Literacy.RST.9-10.3-- Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
CCSS.ELA-Literacy.RST.9-10.4-- Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 9–10 texts and topics*.
CCSS.ELA-Literacy.RST.9-10.8-- Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

CCSS.ELA-Literacy.RST.11-12.3-- Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
CCSS.ELA-Literacy.RST.11-12.4-- Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*.
CCSS.ELA-Literacy.RST.11-12.7-- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
CCSS.ELA-Literacy.RST.11-12.8-- Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
CCSS.ELA-Literacy.RST.11-12.9-- Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

Common Core Mathematics Standards:

CCSS.Math.Content.HSS-IC.B.6-- Evaluate reports based on data.

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Target Classes:

- Elementary School Earth Systems & Patterns
- Middle School Earth Systems & Patterns 6th grade & Earth Structures 7th grade
- High School Earth and Space Science

Summary of the Activity:

The following activity introduces students to the concept of natural disasters. Students will learn important facts about earthquakes, hurricanes, twisters and tsunami's to name a few. The worksheet has students to visit the ***Hurricane Wind Shack and Natural Disasters Trivia*** exhibits.

Timing:

Approximately 30-45 minutes of data collection at ***WonderWorks***.

Pre-Field Trip Activities:

Spend 1-2 days covering the Earth on which we plan to focus

- Pre-assessment (formal or informal) to gauge students' knowledge
- Give an overview of relevant vocabulary
- Discuss the Saffir-Simpson and Richter scales.
    - What are they used for?
- Discuss natural disasters.
    - Write some examples?
    - Write some examples of natural disasters in Florida?
    - Discuss if anyone has experienced any natural disasters?
- Identify on a map the location of specific natural disasters based on the discussion and writing you just had.

Variations of the lesson include:

- For ESE/ESOL students:
    - Deliberate grouping of ESE/ESOL students with standard students/chaperones
    - Go over directions of each exhibit before field trip with ESE/ESOL students

WonderWorks Activity: Please print the Earth Lesson Scavenger Hunt file.

Earth

Post-Field Trip Activities:

Writing Component

- What would your family's preparedness plan be?
  - Why is it important?
- Where would you go during a natural disaster (be specific)?
- How has natural disasters affected human life in Florida?

Discussion

- What are the evacuation routes for your city (zone)?
- What is your school drill for a natural disaster (be specific)?