**Lesson Plan – Severe Weather WebQuest Day 1**

**Introduction**

* **Lesson topic –** Severe weather
* **Length of Lesson –** 60:00
* **VA Standards of Learning –**

4.6 The student will investigate and understand how weather conditions and phenomena occur and can be predicted. Key concepts include

a) weather phenomena;

b) weather measurements and meteorological tools; and

c) use of weather measurements and weather phenomena to make weather predictions.

* **Context –** In second grade, students discovered severe weather and the importance of predicting it. In this lesson, students will research severe weather with a more technical approach by using weather instruments and data to measure atmospheric conditions that cause severe weather.
* **Global Themes –** This lesson will inform students of the dangers of severe weather and the importance of prediction for advanced warning (safety). It will lay the foundation for the fifth grade standard in which students investigate weathering and erosion. In sixth grade, students continue to investigate weather phenomena relating to the motion of the atmosphere and thermal energy.

**Content Objectives**

Students will:

* identify the causes of severe weather using meteorological tools and instruments.
* given specific weather conditions and data, predict the imminent severe weather event.
* research severe weather pre-conditions, results and potential danger in order to produce a severe warning alert video for sharing with classmates.

**Assessment Aligned to Objectives**

*Formative*

**Students will:**

* Use a Google Form *(What’s My Weather?)* to:
	+ Demonstrate that they have determined which severe weather event will form based upon weather conditions given to them by the teacher; and,
	+ Demonstrate their prior knowledge of severe weather as well as articulate additional information they want to know (KWL).
* Begin a graphic organizer (Popplet).
* Answer teacher questions during lesson closure.

**The teacher will look and listen for:**

* Using the Google Form, correct identification of the team’s severe weather event given the current weather conditions; and
* Prior knowledge of severe weather.
* How much the students know after completing preliminary research during lesson closure questioning.

*Summative*

See Day 7 Lesson Plan

**Materials/Technology and Advanced Preparation**

* WebQuest prepared on SMART Board
* Laptops (16); one for each student

**Teaching and Learning Sequence**

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| Time | Teacher Actions | Student Actions |
| *Introduction/Anticipatory Set – Whole Group Instruction* |
| 10:00 | * The teacher will prepare the WebQuest on the interactive whiteboard (Introduction page; play video #1(recording) of thunderstorm.
* Turn volume up to get their attention.
* Ask if anyone recognizes that sound.
* Bring students to the front of the white board one table at a time.
* Play severe weather warning (video #2).
* Ask if anyone has heard this sound before; do they know what it means?
* Play air raid siren video #3.
* Ask if anyone has heard that sound before and what does it mean?
* Ask if students can guess what we are going to learn about by using the sound clues.
* Show them the title page (Introduction) and ask them to read the introduction.
* Ask them if they’ve ever heard of a WebQuest.
* Ask: what do you think a WebQuest is.
* Listen to answers then offer this definition for them: a WebQuest is an internet-based research activity; or, we are going to deepen our knowledge and stretch our brains by using the internet to research severe weather.
* Next, explain that you will put each student into one of four groups (predetermined to account for learning needs and student relationships).
* Tell them that it is expected they work together cooperatively and share the workload equally.
* Ask if someone can tell you what cooperatively means.
* Explain to students that each of them will need a computer to complete this task.
* When you begin, you will go to the WebQuest and follow the directions on the web page.
* Tell them to begin with the introduction.
* Assign students to teams 1, 2, 3, and 4.
* Ask; are you ready to start your quest?
* Dismiss students by team to go to computers or desk tops.
 | * Prepare for science block (clean up from previous lesson; sit at seats, etc.)
* Answer teacher questions; come to the floor.
* Read intro.
* Answer teacher questions.
* Answer teacher questions.
* Move to computers with teams.
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| *Lesson Development* |
| 40:00 | * See Process Day 1
* Teacher will move around the room to assist students throughout the lesson.
* Assist students in predicting severe weather threat if they are having trouble. (This needs to be discovered today.)
* Start stopwatch using online-stopwatch.com

-------------------------------------------------------------* Give students five minute warning; wrap up research; finish thoughts.
* Remind them that they should have predicted what type of severe weather is forming by doing research on their team’s weather conditions.
* Remind them that they also need to complete the Google Form, *What’s My Weather?* and send it to the teacher before time is up.
* When time is up; ask teams (one by one) to return to the front of the room with their research.
 | * Students begin WebQuest.
* Research and predict severe weather using internet.
* Students will complete the Google Form, *What’s My Weather?* and send it to the teacher before time is up.
* Return to the front of the room by teams.
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| *Closure* |
| 10:00 | * After the teams have been seated on the floor, ask each team what severe weather their current conditions predicted.
* Ask Hurricane Team: what is one thing you learned about hurricanes today that you did not know?
* Ask Hurricane Team, what is something that you want to learn about hurricanes?
* Ask everyone: why is it important to know what happens during a hurricane?
* Stop and let them think.
* Does Richmond experience hurricanes?
* Ask Tornado Team: what is one thing you learned about tornadoes today that you did not know?
* Ask Tornado Team, what is something that you want to learn about tornadoes?
* Ask everyone: why is it important to know what happens during a tornado?
* Stop and let them think.
* Does Richmond experience tornadoes?
* Ask Blizzard Team: what is one thing you learned about blizzards today that you did not know?
* Ask Blizzard Team, what is something that you want to learn about blizzards?
* Ask everyone: why is it important to know what happens during a blizzard?
* Stop and let them think.
* Does Richmond experience blizzards?
* Ask Thunderstorm Team: what is one thing you learned about thunderstorms today that you did not know?
* Ask Thunderstorm Team, what is something that you want to learn about thunderstorms?
* Ask everyone: why is it important to know what happens during a thunderstorm?
* Stop and let them think.
* Does Richmond experience thunderstorms?
* Ask, so why is it important that we learn about these things? (So we can prepare and be safe.)
* Ask teams if they need more research time. (Hopefully, yes!)
* Tell them that tomorrow we will continue our WebQuest with another day of research.
* Next we will prepare for lunch (or whatever).
* Dismiss students by teams.
 | * Answer teacher questions.
* Answer teacher questions. (Use sticks here if necessary to hear from everyone.)
* Students will move from floor to prepare for next item on the schedule.
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**Lesson Organizer**

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| **Prior Knowledge and NEW Instructional Content** |
| **Prior Knowledge**In order to meet the standard in second grade, students were expected to:* identify common types of storms. Examples include hurricanes, tornadoes, blizzards, and thunderstorms.
* describe how tracking weather data over time helps scientists make future weather predictions.
* measure and record weather data, using weather instruments, including a thermometer, rain gauge, and weather vane (standard English and metric measures).
* observe and describe precipitation in terms of evaporation and condensation of water.
* observe and describe types of precipitation, including rain, snow, and ice (sleet and hail).

**New Instructional Content*** Different types of weather are associated with high and low pressure air masses.
* Specific weather conditions are necessary to create severe weather (e.g., thunderstorms, hurricanes, and tornadoes).
* Students will measure wind speed, using an anemometer; relative humidity using a hygrometer; temperature using a thermometer; and, barometric pressure using a barometer.

**Vocabulary**Air pressureTemperatureHigh PressureLow PressureFrontBarometer Anemometer |
| **Instructional Modifications to** **ASSIST Students** | **Main Events of Instruction** | **Instructional Modifications to** **CHALLENGE Students** |
| * Students will have choices of internet resources.
* Students will be placed in teams that will facilitate learning and encourage cooperation.
* Students will be closely monitored by the teacher.
 | * Whole group instruction.
* WebQuest (research)
* Closure
 | * Students will be given choices of internet resources.
* Students will be placed in teams with peers of similar abilities.
* Students will be expected to make some decisions without teacher intervention.
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