Weather

Virtual Instruction Lesson Plan

Episode 3: (0:00-14:18)
bit.ly/steamcamp-weather-dams

Explore how National Weather Service meteorologists predict and measure the weather to keep you safe.

Related Nevada Academic Content Standards/ Next Generation Science Standards:

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.

K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Materials

- Wind Speed Data Collection Chart (bit.ly/steamcamp-windspeed)
- 5 small paper cups
- 2 straws
- Pencil with an eraser
- Push pin
- Marker
- Hole punch (if not available, use the tip of a sharp pencil to make holes in the cups)

Tip:

This lesson plan is easily adaptable for face-to-face instruction. Simply conduct the "Explore" portion of the lesson as a hands-on activity in the classroom.

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Engage:

Share the beginning of the program with students. After Zinnia asks, "I was wondering how we predict the weather?," pause the program and ask your students the same question. Write this essential question down and record student responses to reveal students' current knowledge, connections to the topic, and further questions they have.

Explain:

Introduce the words, **meteorologist**, **weather instrument** and **anemometer**.

- Have students guess their meaning and record their ideas.
- Ask students to listen for the words as they watch the video clip, featuring Trevor Boucher, a meteorologist (1:26 – 6:17).
- When they hear one of words, encourage students to make a gesture, such as wiggling their fingers.

Pause the video at key spots to ask questions that strengthen comprehension and help children make connections.

- Pause after Trevor discusses severe weather in Las Vegas (2:31). Ask students, "What severe weather happens in Las Vegas? Why do we get thunderstorms in the dry desert?"
- Pause after Trevor introduces all the weather instruments (4:19). Ask, "How do meteorologists observe and measure the weather down on the ground?" Review the tools used to measure wind, rain, and temperature.
- Pause after Trevor talks about the weather balloon (5:47). Ask students, "Why do meteorologists use weather balloons? How to they get information from the weather balloon?"
- Watch the "What did we learn?" segment to reinforce the concepts.

Reflect on the new knowledge students have acquired.

- Revisit the essential question and have children answer it by incorporating the vocabulary words; ask children to share any new information they acquired or additional questions they have.
- Have students fold a piece of paper in half. On one side, they will draw a weather scene. On the other half, they will draw and label the weather instrument(s) that best measures the weather in their illustration. Rewatch the video to help students create their illustrations, as necessary. Allow students to share and describe their picture to the group, using the new the vocabulary words.

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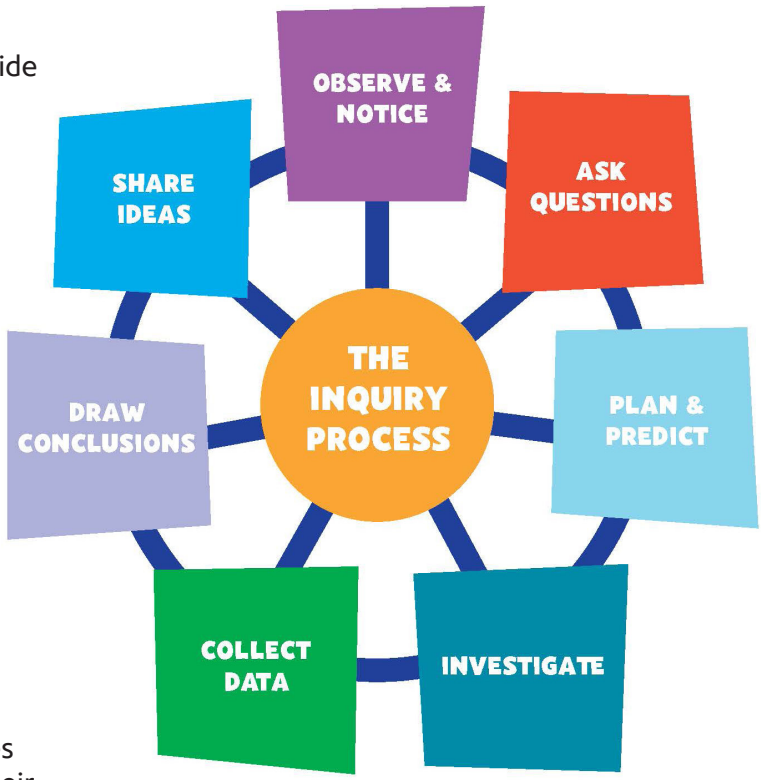
Explore:

Use the at-home activity segment (6:30 – 11:33) to guide students through the scientific inquiry process:



Observe and notice: Share the video segment in which Jessica outlines directions for measuring the wind by creating an anemometer out of cups, straws, a pencil, and a pushpin. Have students point out anything interesting they noticed about Zinnia and Luis' anemometers or the data they collected.

Ask questions: Brainstorm questions about measuring the wind this investigation might help students answer, such as, what will be the windiest day this week?

Plan*: Have students gather materials and create their anemometers. Then, have them plan which outdoor locations they will place their anemometer to gather data.

Predict Investigate/collect data: Have students conduct the experiment by counting how many times their anemometer spins in 15 seconds and logging their observations on their Wind Speed Data Collection Chart. Measure the wind in different outdoor locations on the same day and time, over the course of a week.

Draw conclusions/share ideas: After a week, have students' compare and analyze their data. What patterns did students notice? How did the weather change from day to day? Which day was the windiest/calmest? Was one location better at measuring the wind than another? Why? Help students make connections between anything they learned in the video and this activity. What new questions do students have? Encourage students to share photos and videos of their at-home challenges with Vegas PBS at bit.ly/steamcamp-share.

**If students don't have materials to create an anemometer at home, the teacher can create one for whole-group demonstration and data collection.*

Extend:

View the book talk with Shana, a local Young People's Librarian (12:20 – 14:18). If possible, read the story Shana previewed to students, **The Weather Girls** by Aki, or share an activity to extend the lesson from **Maker Lab Outdoors: 25 Super Cool Project: Build, Invent, Create, Discover** by Jack Challoner. Encourage students to continue exploring water filtration by accessing the following PBS KIDS resources:

- **Nature Cat: Windy Weather (Grade 3) –** bit.ly/naturecat-windyweather
- **Nature Cat: What's With Wind (Grades 1-2) –** bit.ly/naturecat-whatswithwind
- **Cyberchase: Reading a Thermometer –** bit.ly/cyberchase-thermometer