Bill Nye the Science Guy:

The Sun

Running Time: 26 Minutes

Nifty questions in this episode:

- What is the closest star to planet Earth?
- How many Earths would fit into the sun?
- How hot are solar flares on our sun?
- What is a solar eclipse?

Awesome answers:

- The sun is the closest star to Earth.
- You would have to place 109 Earths end to end to equal the sun's diameter. 1.3 million Earths will fit inside the Sun.
- Solar flares reach a temperature of 10,000 degrees Celsius (C).
- Asolar eclipse occurs when the moon is between the sun and Earth, which casts the moon's shadow on the Earth.

Experiments shown on the video:

RISING TO THE TOP

Objective: To construct a thermometer with colored water.

- Poke a hole, large enough for a straw to fit through, in the top of an empty film container.
- Put a straw through the hole. Use a little clay to hold straw in place.
- Fill the container a little more than half full with water.
- Add a few drops of food coloring.
- Put the lid back on the film container and place it in a bowl of hot water.
- Colored water will rise up through straw as the water inside the container heats up.

More interesting stuff to do:

I'M SEEING SPOTS

Objective: To trace the movement of sunspots.

- Put a telescope on a tripod in front of a window with the eyepiece facing away from the sun (not pointed at the sun).
- Place a clipboard, with drawing paper attached, three centimeters behind the eyepiece.
- Cut a hole in the cardboard large enough to fit over the end of the telescope facing the sun. The remaining cardboard around the hole will deflect any unwanted sunlight.
- Trace the sun and any sunspots that appear on the drawing paper.
- Make journal entries to record sunspots that appear over several days.

TIME TO DIAL

Objective: To make a sundial.

- Observe the direction of the shadow that the school flagpole casts (points) in the morning (west), at noon (north), and in the afternoon (east).
- Straighten twelve metal hangers or use wooden stakes.
- Attach a small flag or pennant to each hanger or stake.
- Number the flags or pennants 1 through 12 for the hours on a clock.
- Tie a 10- to 15-meter-long rope to the bottom of the flagpole.
- At 8:00 A.M., place the rope along the shadow cast and stick the #8 hanger or stake in the ground at the end of the rope.
- Do this every hour, until all hangers or stakes are in place.
- Have students tell the time using the newly constructed sundial.

Way Cool Scientist: Karen Harvey

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