Name _____ Date _____

Student Worksheet
Activity 3.1.3, Making Simple Weather Instruments
Thermometer

OBJECTIVES
To build simple weather instruments relying on the same principles found in professional meteorologists' instruments.
To observe how weather instruments work.
To relate how and why these instruments work to fundamental scientific principles, i.e. a liquid expands when it warms, and contracts when it cools.
To compare the accuracy of hand-made instruments with actual weather instruments

MATERIALS (for each student or team of students)
- flask, small glass bottle or jar
- rubber stopper or lid with a hole large enough for a straw
- clear straw (tubing may be substituted if using a flask and a rubber stopper)
- ice water
- room temperature water
- warm water
- food coloring (optional)
- clay to block the opening around the straw
- grease pencil
- thermometer
- goggles
- WEATHERLog

PROCEDURE
1. Place the straw through the opening in the jar lid or through the hole in the rubber stopper. Using the clay close up any gaps in the opening.
2. Fill the flask or jar with room temperature water. You can add a drop or two of food coloring to make it easier to read the measurement
3. Place the lid on the jar or the stopper in the flask.
4. Place the jar or flask in warm water and record your observations in your WEATHERLog.
5. Take the jar or flask out of the warm water and let it sit for five minutes. Observe what happens to the level of the liquid.
6. Place the jar or flask in ice water and record your observations.

OBSERVATIONS
Make a drawing of your "thermometer" in your WEATHERLog

Record your observations.

CONCLUSIONS
Write a summary paragraph explaining what you observed. Use scientific terms to explain why a thermometer works.

http://www.howstuffworks.com/therm.htm
How Stuff Works

http://www.allstar.fiu.edu/aero/Experiment9.htm
Aeronautics