Name: _____ Class: _____ Date: _____

MAKE YOUR OWN THERMOMETER

Learner Outcomes:

- Explain the operation of technological devices and systems that respond to temperature change (i.e. thermometers)

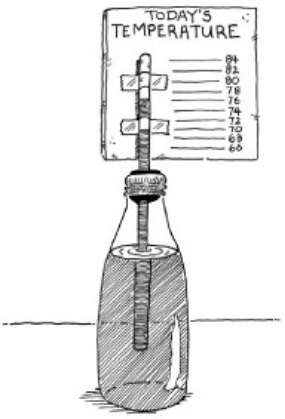
Problem: How can we make a homemade thermometer?

Materials:

Water	Plastic juice bottle	Clear drinking straw
Rubbing Alcohol	Food coloring	Modeling clay

Procedure:

1. Add equal parts of tap water and rubbing alcohol to the bottle, filling about 1/4 to a 1/2 of the bottle.
2. Add a couple drops of red food coloring and mix by shaking the bottle.
3. Put the straw in the bottle, but don't let the straw touch the bottom.
4. Use the modeling clay to seal the straw in place. Leave a portion of the straw sticking out from the bottle, making sure the clay forms a tight seal around the straw and over the bottle mouth, but don't close off the straw's opening.
5. To test if the homemade thermometer works have place your hands around the bottle and observe what happens to the mixture in the bottle.



This investigation / activity has been adapted from:
Bullard J, Krupa G, Krupa M, et al. *Science Focus 7*. Toronto, ON: McGraw-Hill Ryerson.

Observations:

Analysis:

1. Which part of your thermometer responds to changes in temperature?

2. Why did you add alcohol to the water

3. What would happen if you used only alcohol? What if you used only water?

4. Why might you add marks and numbers to your thermometer? Where would you put them?

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5. How was your thermometer different than a real one?

Extension:

Investigate at least three different fluids that have been used in thermometers and identify the advantages and disadvantages of each.

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