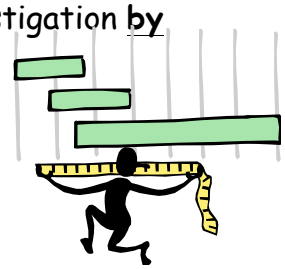
Scientific INQUIRY **Name:**_____

Cohesion of Water 2013 Pretest **Date:**_____ **Grade**____ **Period:**___



__1. Your **ASSIGNMENT** is to finish the following Scientific Inquiry Investigation **by yourself**. The first part (FORMING) is done for you.

__2. Your work will be scored according to the "Central Science Inquiry Scoring Guide". You may use it as a guide.

__3. Read Labels. Follow directions. DO NOT MIX the LIQUIDS OR the DROPPERS.

__4. Your completed papers will be due at the end of the class period on the second day. If we start on Wednesday, then it will be due at the end of the period on Thursday.

(F) FORMING an Investigation:

Question/Problem:

Measure and compare the cohesion property of plain water to the cohesion property of water that has other substance(s) dissolved in it. Measure by counting the number of drops of each that will fit on a penny.

Background Information:

Definition of cohesion:

Cohesion is the molecular force between particles within a body or substance that acts to unite the particles. It is the attraction of like molecules (particles) to one another.

Example:

In water drops, the **like particles** are the water (H_20) molecules. The hydrogen atoms of one molecule of water are attracted to the oxygen of another molecule.

Informal Observations:

Water molecules "bead" together in groups when on a smooth surface, such as glass. Those "beads" will combine to make larger beads or small puddles when they touch.

More Information:

Cohesion at the edge of the body of the substance can seem to form a "skin". This special cohesion is known as surface tension. Water striders are bugs that can walk on the "skin" of water due to the surface tension.

Sources:

Dictionary.com

stevespanglerscience.com And my informal observations (Mrs. Plyter)

Scientific INQUIRY	***Teacher Notes***
2013 Pretest Cohesion of Water	**Joyce Plyter**

TEACHER NOTES:

1. **I have droppers for you.**
   The water dropper and water container does need to be 'clean'..
   I considered alcohol and "windex" but they each would require goggles, so I left them out. If you want to let some try them, I do have goggles you can borrow.

2. I am going to give them the Scientific Inquiry handout that I normally use.
   Some of my thoughts:

   a) Scientific Inquiry requires "Background Information", so they have references available to them. This is one of them. And I do give them the scoring guide when they do the actual work samples.

   b) This is a pretest for the "Inquiry Work Sample"(which is background for OAKS). This is not a pretest for OAKS, so the scoring guide is not a secret.

   c) **They still have to work by themselves and without help**.

3. Some solutions to use in addition to plain water:
   a) salt water
   b) soapy water
   c) any regular soda
   d) any diet soda