Wet Pennies

Materials

plastic cups	water	vegetable oil	pennies
disposable pipettes	rubbing alcohol	paper towels	

Directions

1. Assemble the materials your group will need. Your group will need three plastic cups: one containing about a half-inch of water, one containing about a half-inch of rubbing alcohol, and one containing about a half-inch of vegetable oil. Also obtain one penny, two paper towels, and one disposable pipette for each person in the group.

Each member of the group should do the following steps:

2. Take one of the pennies and place it head side up on a paper towel on the lab table in front of you.
3. Slowly and gently, use the pipette to place drops of water on the penny until one drop makes the water overflow the edges of the penny. Be sure to count the number of drops as you add them. Record the number of drops you added *minus* the one that made the water overflow.
4. Dry the penny thoroughly with the other paper towel, and squeeze all the water out of the pipette.
5. Repeat steps 2, 3, and 4, using rubbing alcohol instead of water. It is important to use the alcohol *second*.
6. Repeat steps 2, 3, and 4, using vegetable oil instead of water or alcohol. It is important to use the vegetable oil *last*.

Class discussion

1. At your table, compare each person's results. Designate one person as recorder. Calculate the average number of drops of water, alcohol, and oil that a penny can hold, using the data of each person in the group.
2. Did you get different averages for the three liquids? If so, which liquid allowed you to put more drops on the penny?
3. In your group, discuss why you think the averages were different. Try to form a hypothesis to explain the differences that everyone in the group agrees on. If this is not possible, be sure to record all the hypotheses that the group comes up with.
4. Come up with a way to test your hypothesis. You do not have to actually do this test, so it can include materials you do not have immediately on hand.
5. Designate one person in the group to report to the rest of the class.