Archimedes' Principle Activity #3

Objective: To determine how the volume of floating objects compares to the volume of water displaced by those objects.

Procedure:

1. Obtain 20 pennies. Measure their volume using water displacement with a small graduated cylinder. Divide the volume by 20 to obtain the volume of the individual pennies.
2. Obtain a large graduated cylinder.
3. Fill the about ¾ full of water. Float a dixie cup in the water and record the volume. This will be your reference volume.
4. Add two pennies to the cup. Record the new volume measurement from the graduated cylinder.
5. Repeat step four until the cup sinks.
6. Record the mass of 2 dry pennies.

Data:

Volume of 20 Pennies: _____ Volume of 1 Penny: _____

Mass of 2 Pennies: _____

For the floating Dixie Cup and Pennies

Initial Volume of Water	Final Volume of Water	Change in Volume of Water	# of Pennies	Volume of Pennies
			0	
			2	
			4	
			6	
			8	
			10	
			12	
			14	
			16	
			18	

Questions:

1. Is the volume of water displaced the same as the volume of pennies added for each trial? Should it be? Explain your answer.

2. Explain why the pennies are able to float in the cup, but not by themselves. Use the concepts discussed in this unit.

3. Is the change in water volume consistent as you keep adding two pennies at a time? Should it be? Explain your answer.