

**Activity #3:**

**“Let’s Stick Together”**

Surface tension is another property of water that is very important to us. Water molecules are capable of maintaining a bond between each other. This bond can be quite strong and allows water molecules to stay close together. This property of water is the highest of all liquids we know about and is partly responsible for the formation and structure of water droplets.



Language Arts  
**Lesson #2**

**Objective:** Upon completion of this activity, students will demonstrate an understanding of the surface tension property of water.

NEVADA SCIENCE STANDARD 16:8.1

**Time:** One class period

**Materials:** plastic produce baskets (4” X 4” obtained at supermarket), clay, 3” x 5” index cards, bowl or container for water, triple beam balance

**Procedure:**

A. Teacher: Briefly review some of the unique characteristics of water. Place materials at each student work station.

B. Students:

1. Determine the mass of a plastic produce basket using the balances. Record the value in the Data Table.
2. Make a ball using modeling clay so that its mass is equal to that of the plastic basket.
3. Predict what will happen when each one is placed on the surface of the water in the bowl.

clay  
ball \_\_\_\_\_  
basket \_\_\_\_\_

4. Place each on the surface of the water and record your results.

clay ball

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basket

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5. Determine the average mass of a 3" x 5" index card. Record the value in the Data Table.
6. Position the plastic basket so that it is resting on the surface of the water.
7. Carefully place one index card across the top of the basket.
8. Repeat this step by laying one card at a time on the basket. Observe what is happening to the water surface in between the holes on the bottom of the basket.
9. Stop when the basket sinks below the water surface.
10. Remove one card from the pile and count the total number of cards remaining. Calculate the total mass of the cards and basket that was supported by the water and record the information in the Data Table.
11. Repeat the investigation using both cold and warm water. Make a prediction about what might happen.

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**Data Table: Surface Tension**

A. Mass of plastic produce basket: \_\_\_\_\_ grams

B. Mass of one 3" x 5" index card: \_\_\_\_\_ grams

<b><u>Solution</u></b>	<b><u>Total mass supported (g)</u></b>
Water ( °C)	_____ grams
Water ( °C)	_____ grams
Water ( °C)	_____ grams
Salt solution	_____ grams
Sugar solution	_____ grams

# SURFACE TENSION

Cohesion



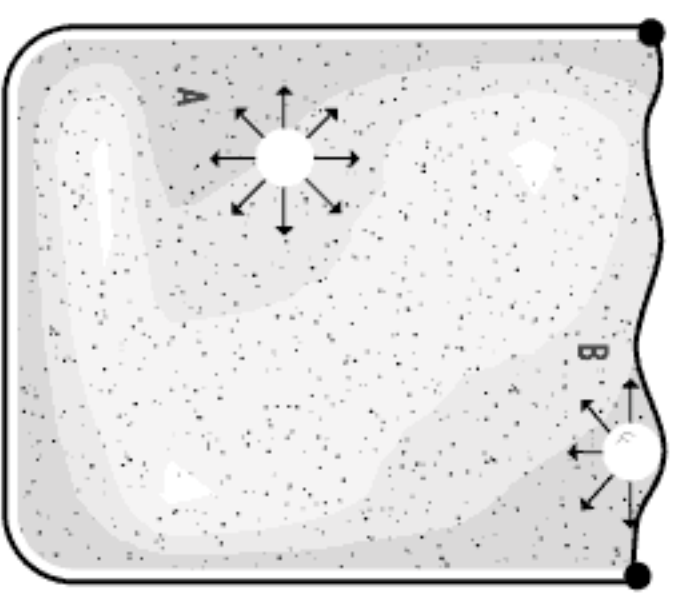
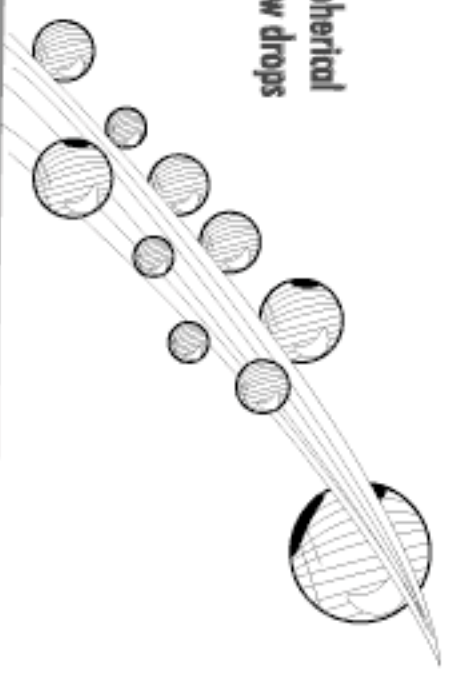
Surface Tension



Adhesion



Spherical dew drops



A - net force = zero  
surrounded by molecules

B - net force downward  
not surrounded