

# Station 1-Heat Capacity

Materials: two glass beakers (label A and B), two thermometers, water, hot plate, stopwatch or clock with a seconds hand

Procedures:

1. Add 50 mL of tap water to beaker "A" and nothing to "B".
2. Heat both beakers to 30° C. Hold a thermometer in the middle of each beaker and do not allow it to touch the bottom. You may gently stir the water and the air.
3. Take the beakers off as they reach 30° and then time how long it takes them to cool to 25° C. One student in the group needs to be responsible to time each beaker as it cools.
4. Write down your data on your student sheet.

# Station 2-pH

Materials: pH paper, weak acid, weak base, beaker, water, stirring rod

Procedures:

1. Fill the beaker  $\frac{1}{2}$  full of water. Use the pH paper to test the pH of water from the tap. Record your data.
2. Add 4 drops of the acid and test again. Record your data.
3. Carefully add drops of base to get the pH back to where you started. Record how many drops of base were necessary. If you go too far, you may have to add acid again. Record those drops and continue.

# Station 3: Capillary action

Materials: capillary tubes, different liquids, ruler

Procedures:

1. Place a capillary tube in each of the liquids provided.
2. Use a ruler to measure the height the liquid rises in the tube.

# Station 4: Cohesion, adhesion, surface tension

Materials: penny, dropper or pipette, water, pepper or paper holes from paper cutter

Procedures:

1. Add a single drop of water to the dry penny. Tilt the penny and see how long the drop will stick. Draw the penny at the maximum angle.
2. Place the penny on the table and add as many drops as you can until it forms a mound but doesn't overflow. Draw this in your data.
3. Add something small like pepper or a paper hole from a paper punch. Observe and draw in your data.

# Station 5: Surface area and Evaporation

Materials: paper towel, drinking straws, 3 graduated cylinders

Procedures:

1. Observe the model leaves that have been prepared. Each graduated cylinder started with the same amount of water several hours ago.
2. Record the data.

# Station 6: Water as a Solvent

Materials: small beakers or dilution trays, various chemical substances rubbing alcohol, water, toothpicks, pipettes

Procedures:

1. Add water to several of the small beakers or depressions in the dilution trays.
2. Use the toothpick to add a small quantity of each substance to one of the beakers or depressions. Stir and record whether or not it dissolved.
3. Repeat using the alcohol as the liquid.