Water Exercises

1. **Water Molecules Bond Together**
    a. Fill a narrow-mouth glass, such as a bud vase, half full with water.
    b. Observe the edge of the water surface where it touches the side of the glass. Record your observations.
    c. Fill the glass almost to the top. Using an eye dropper, continue adding water one drop at a time until it overflows. Record your observations. What did you notice about the level of the water at the center of the vase just before it overflowed? What about at the edge of the rim just before it overflowed? This experiment shows you strength of the bonds between water molecules that result in water's surface tension.

2. **How Much Water Is In You?**
    a. Use a scale to determine your body weight.
    b. The human body is about 80 percent water. How many pounds of your body weight is water?

3. **Melting Rates of Ice**
    a. Make some ice cubes that have the same amount of water in them.
    b. Give each person an ice cube to hold. You can use your hand or a cup, but everyone has to use the same thing.
    c. Record how long it takes for each person's ice cube to melt. Why do the cubes melt at different rates?

4. **How Fast Does Water Freeze?**
    a. Boil some water and pour it into a heat-proof cup. Steam is very hot, so be careful not burn yourself!
    b. Put the same amount of room-temperature tap water in another cup.
    c. Put the same amount of cold tap water in another cup.
    d. Place all the cups in the freezer. Check them after an hour. Which freezes faster? Why?

5. **Make It Rain!**
    a. Boil some water in a kettle.
    b. Turn the heat off. Wearing oven mitts, and being very careful not to get burned by the hot steam, hold a large glass or bowl upside down over the rising steam. What happens? Why? How is this like rain forming and falling?

6. **Temperature and Rainfall**
    a. Keep a daily record of the weather. Include the high and low temperature, the amount of rain (or snow) and the temperature when it was raining (or snowing).
    b. What was the total amount of rain (or snow) each month?
    c. Can you find any relationship between temperature and rainfall (or snowfall)? What is that relationship? Why?

7. **Acid Precipitation**
Rain, snow, sleet or fog that contains certain pollutants is called acid precipitation.
    a. Collect samples of rain at the beginning, in the middle and at the end of a storm.
    b. Measure the acidity of the water using paper that is sensitive to pH. Your science teacher or Extension educator can help you find out where to get this.
    c. Record your observations. During what part of the rain storm is the water most acidic (lowest pH number)? Why?
    d. What do you think causes acid precipitation? Do some research into sources of pollutants that cause acid precipitation, and the effects of acid precipitation on plants and animals.