What Dissolves In Water?

Questions and Observations to Consider:

- Which substances dissolve in water? Which do not?
- What happens to the water when you mix in the substances?
- Are the substances still in the water? What steps could you take to figure this out?
- If you used hot water and the same substances, would you get the same results?
- How many teaspoons of a substance does it take to saturate a given amount of water?

Materials:

- Several clear cups
- Water
- Teaspoon to measure
- Several different substances to test: salt, pepper, sugar, flour, sand, coffee, oatmeal, sprinkles, oil, spices, Kool-Aid, etc.
- Mixing spoons

Directions:

- Measure an equal amount of water into each cup. Use a post-it or piece of tape to mark the water level.
- Add 1 teaspoon of one substance to one cup, another teaspoon of a different substance to another cup, and so on.
- Use mixing spoons to stir each solution.
- Observe and record what happens in each cup.
- Continue adding one teaspoon at a time of each substance to its respective cup until the solution is saturated. Record your observations and how many teaspoons it takes to saturate each solution.

Sink or Float?

Questions and Observations to Consider:

- Does an egg sink or float?
- In which liquids does the egg sink?
- In which liquids does the eggs float?
- Explain a reason why the egg would sink or float.
- If you used hot water, would you get the same results?
- If you added enough solute to super-saturate the solution, what would happen to the egg? Why?

Materials:

- 6 cups
- Cold water
- Vegetable oil
- Measuring cups and spoons
- Salt, Baking soda, Cornstarch, Flour
- 6 eggs

Directions:

- Number your cups 1-6
- Add 1 cup of water to cups #1-5 (cup #1 will be plain water)
- Add 1 cup of vegetable oil to cup #6
- Cup #2→ Add 3 tablespoons of salt. Stir.
- Cup #3→ Add 3 tablespoons of baking soda. Stir.
- Cup #4→ Add 3 tablespoons of cornstarch. Stir.
- Cup #5→ Add 3 tablespoons of flour. Stir.
- Place 1 egg in each cup #1-6.
- Record your observations.
- Repeat steps using hot water and super-saturate solutions in cups #2-5. Are your results the same?
- Record your observations.

What's In Your Water?

Questions and Observations to Consider:

- How can you discover what's in your water samples?
- Where is your water sample from? (sink, hose, stream, fish tank, plant water, dirty dish water, puddle, etc)
- What color is the water?
- Does the water have a smell?
- Describe any material or items you observe floating or suspended in the water or settled on the bottle.
- Are there any observable organisms living in the water?

Materials:

- Water samples collected from several different sources
- Clear cups
- A piece of white paper
- Small plates or bowls to act as evaporation dishes

Directions:

- Use clear cups to gather water samples from several different sources
- Label your cups with the source of the water sample (ex: #1- kitchen sink)
- Make observations about each water sample (color, smell, clarity, particles). Place a piece of white paper behind each cup when making observations to help you see more clearly.
- Record observations.
- Make a label for each sample that you can place on a plate or small bowl. Place a small amount of water from each sample onto the plate/bowl to evaporate.
- After the water has evaporated (1-3 days), describe and record any observable material that may remain (dirt, particles, etc.)