Why not get involved and try some fun experiments at home?

While conducting your experiment, please think about the following:

Have you got all your equipment?

Are you conducting a fair test?

Are you taking time to observe you experiment?

Can you record this in any way?

Do you think your results were accurate? Why?

How are you recording your results?

Did anything unexpected happen?

Have you got a conclusion?

Don't forget to have fun! ☺

Clean pennies with vinegar!

YOU WILL NEED:
- A few old (not shiny) pennies
- 1/4 cup white vinegar
- 1 teaspoon salt
- Non-metal bowl
- Paper towels

WHAT TO DO

1. Pour the vinegar into the bowl and add the salt – stir it up.

2. Put about 5 pennies into the bowl and count to 10 slowly.

3. Take out the pennies and rinse them out in some water. Admire their shininess!

HOW DOES IT WORK?

There is some pretty fancy chemistry going on in that little bowl of yours. It turns out that vinegar is an acid, and the acid in the vinegar reacts with the salt to remove what chemists call copper oxide which was making your pennies dull. You're not done yet, though, lets try another experiment:

Add more pennies to the bowl for 10 seconds, but this time , don't rinse them off. Place them on a paper towel to dry off. In time the pennies will turn green-ish-blue as a chemical called malachite forms on your pennies. But wait, you're still not done yet.

Place one or two nuts and bolts in the vinegar and watch – they may become COPPER in color! The vinegar removed some of the copper from the pennies, if there is enough copper in the vinegar, the copper will become attracted by to the metal in the nuts and bolts and they will take on a new copper color – cool.

MAKE IT AN EXPERIMENT:

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Will other acids (like lemon juice or orange juice) work as well?

2. Does this cleaning chemistry work on other coins?

3. Do other amounts of salt make a difference in the chemistry of the experiment?

A colour symphony!

YOU WILL NEED:
- A flat tray (like a cookie baking tray)
- Food coloring (at least 3 different colors)
- Whole milk - low fat milk will not work for this experiment
- Liquid soap used for washing dishes.

WHAT TO DO

1. Carefully pour the milk into the tray so that it just covers the bottom

2. Add about 6-8 drops of different colored food coloring onto the milk in different spots

3. Add about 5 drops of the liquid soap onto the drops of food coloring and watch the show!

4. To clean up, simply pour the colored milk down the drain. (don't drink it!)

HOW DOES IT WORK?

So you know where the color comes from, but why milk and liquid soap? The main job of dish soap it to go after fat and break it down. Usually the fat is on dishes from the food we eat, but fat is also in whole milk. When you drop the liquid soap onto the tray, it tried to break down the fat in the milk. While it was doing that, it caused the colors to scatter and mix creating a very colorful display. Have fun!

MAKE IT AN EXPERIMENT:

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. What liquid dish soap works the best?

2. Does the shape of the tray affect the reaction?

How to make slime!

YOU WILL NEED:
- 1/4 cup of water
- 1/4 cup of white craft glue (like Elmer's glue)
- 1/4 cup of liquid starch (used for clothes)
- Food coloring (optional)
- Mixing bowl
- Mixing spoon

WHAT TO DO

1. Pour all of the the glue into the mixing bowl.

2. Pour all of the water to the mixing bowl with the glue.

3. Stir the glue and water together.

4. Add your food color now – about 6 drops should do it.

5. Now add the liquid starch and stir it in.
It should be nice and blobby by now. As you play with your slimy concoction, it will become more stretchy and easier to hold.
Explore your slimy creation and store it in a zip bag when you are not using it.

HOW DOES IT WORK?
The glue is a liquid polymer. This means that the tiny molecules in the glue are in strands like a chain. When you add the liquid starch, the strands of the polymer glue hold together, giving it its slimy feel. The starch acts as a cross-linker that links all the polymer strands together.

MAKE IT AN EXPERIMENT:
The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does changing the amount of water or glue change the feel of the slime?

2. Do different glues make better slime?

3. How does changing the amount of each ingredient change how the slime turns out?

4. What happens to slime if it is stored out of a bag compared to in a bag?

Build a fizz inflator!

YOU WILL NEED:
- One small empty plastic soda or water bottle
- 1/2 cup of vinegar
- Small balloon
- Baking soda
- Funnel or piece of paper

WHAT TO DO

1. Carefully pour the vinegar into the bottle

2. This is the tricky part: Loosen up the balloon by stretching it a few times and then use the funnel to fill it a bit more than halfway with baking soda. If you don't have a funnel you can make one using the paper and some tape.

3. Now carefully put the neck of the balloon all the way over the neck of the bottle without letting any baking soda into the bottle.

4. Ready? Lift the balloon up so that the baking soda falls from the balloon into the bottle and mixes with the vinegar. Watch the fizz inflator at work!

HOW DOES IT WORK?

The baking soda and the vinegar create an ACID-BASE reaction and the two chemicals work together to create a gas (carbon dioxide.) Gasses need a lot of room to spread out and the carbon dioxide starts to fill the bottle, and then moves into the balloon to inflate it.

MAKE IT AN EXPERIMENT:

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does water temperature affect how fast the balloon fills up?

2. Does the size of the bottle affect how much the balloon fills?

3. Can the amount the balloon fills up be controlled by the amount of baking soda?