

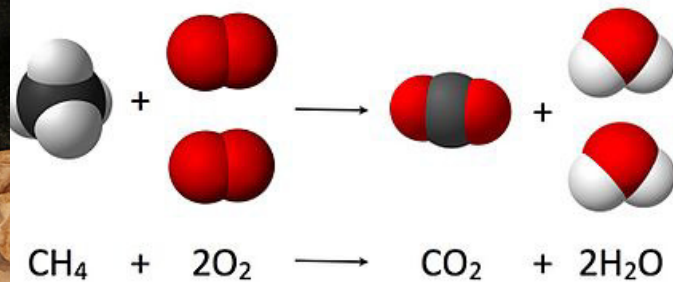
Investigation 4: Fizz Quiz

In this investigation we will discover....

- What happens when a solution is made with a solvent and two different solutes?
- What causes a chemical reaction of a solution?
- Can the products of a chemical reaction be separated?



https://www.youtube.com/watch?v=37pir0ej_SE



Vocabulary:

Reactants: Are the chemicals that actually engage in chemical transformation.

Chemical Reaction: Is the process that changes the relationships of the atoms in the reactants. A transformation occurs.

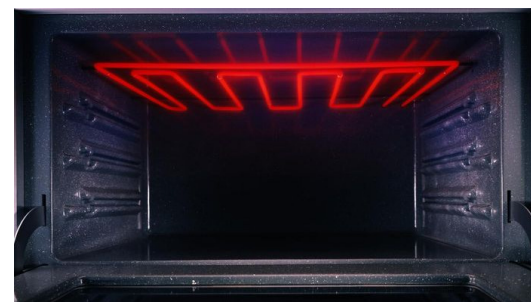
Products: The new chemicals that emerge from the process.

Precipitate: A solid material that forms as a product of a solution.



Reactants

2 boxes mix + 12 eggs
(limiting reactant)



Lab #1: Simple Chemical Reaction

- What happens when you drop an antacid into a cup of water?
- Is there a chemical reaction? How would you describe it?
- Will the temperature of the water effect the speed of the chemical reaction?



What is an antacid?

Medication is used to treat the symptoms of too much stomach acid such as stomach upset, heartburn, and acid indigestion. ... Aluminum and magnesium **antacids** work quickly to lower the acid in the stomach.

Why is there a chemical reaction?

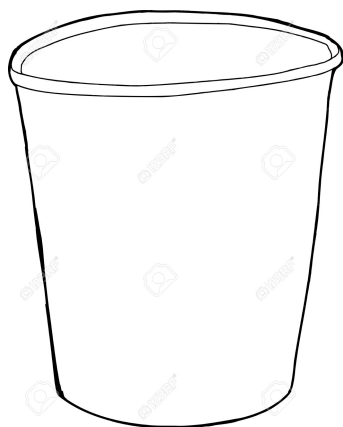
If you look at the ingredients for **Alka-Seltzer**, you will find that it contains **citric acid** and **sodium bicarbonate** (baking soda). When you drop the tablet in water, the acid and the baking soda react -- this produces the **fizz**.

Lab Partner Names: _____

Investigation 4: Fizz Quiz

Antacid in water / temperature of water

Cold water



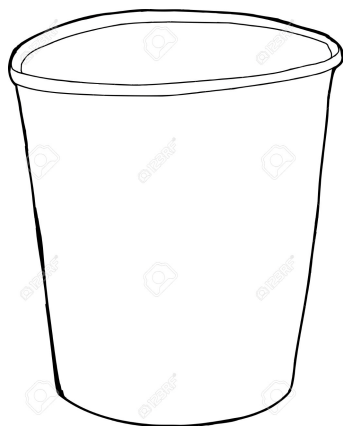
Minutes

Sec

		●
		●

Describe the chemical reaction when you drop an antacid into a cup of cold water:

Warm water



Minutes

Sec

		●
		●

Describe the chemical reaction when you drop an antacid into a cup of cold water:

Did the temperature of the water effect the speed of the chemical reaction?

Day 2: What is a chemical reaction?

When two or more chemicals combine and a **transformation** occurs.

The **original substance** of chemical reaction is called a **reactant**, while the **substance that is formed** is called the **product**.

Chemical reactions can happen **very slowly**.

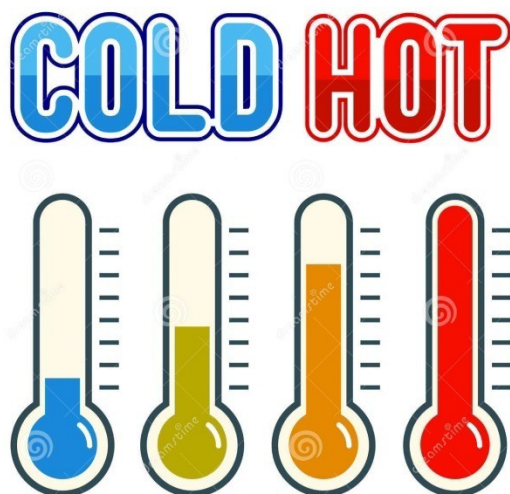


Chemical reactions can happen **very quickly**.



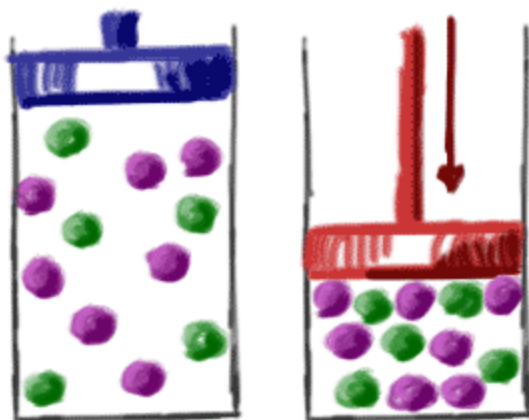
Day 2: What can affect the speed of a chemical reaction?

Temperature



<https://www.youtube.com/watch?v=-IHZgOtMdVU>

Concentration



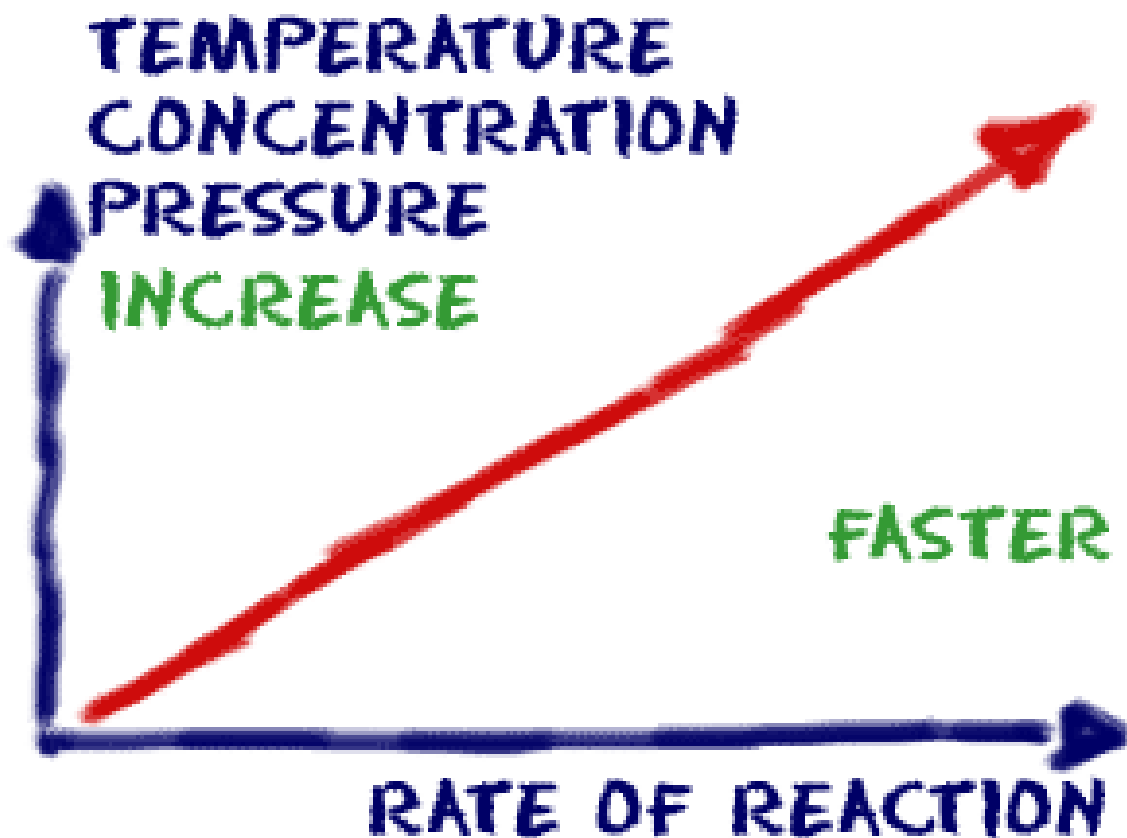
AS PRESSURE INCREASES,
THE GAS MOLECULES CAN
HAVE MORE COLLISIONS.



https://www.youtube.com/watch?v=Epa_2mCi4lw

Day 2: What can affect the speed of a chemical reaction?

Pressure



<https://www.youtube.com/watch?v=sinqcBoqkEE>

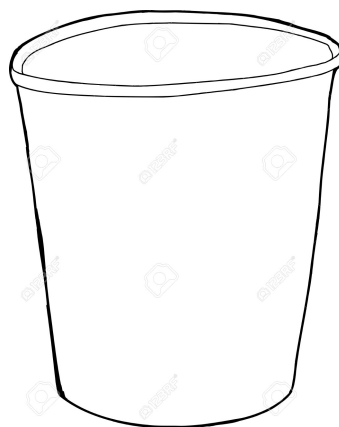


Lab #2: Fizz Quiz Observations



Cup 1

1 spoon of calcium chloride
1 spoon of baking soda
50 ml of water



Cup 2

1 spoon of calcium chloride
1 spoon of citric acid
50 ml of water



Cup 3

1 spoon of baking soda
1 spoon of citric acid
50 ml of water

Questions:

Did a chemical reaction take place in all of the cups? How do you know?

Were any new products formed?

Did the mixtures of chemicals form solutions when mixed with water? Why or why not?

What is fizzing?

Fizzing in a liquid, such as soda, is caused by gas escaping and coming to the surface. In soda the gas is **carbon dioxide** (CO_2) – the same gas formed with the baking soda and calcium chloride.



What was the white material formed by cup #2?

The white material formed in cup #2 is called a precipitate. That is a new chemical that formed when calcium chloride and baking soda mixed with water. The new material is called calcium carbonate..or chalk!

