

Physical and Chemical Changes



<https://www.slideshare.net/neenaharidas1/physical-chemical-change>

OBJECTIVE:

- ▢ *To study the difference between a physical and chemical change.*



MATTER

- ▣ **Matter is everywhere.**
- ▣ **Matter is anything that takes up space and has mass.**
- ▣ **Matter is constantly experiencing both chemical and physical changes.**



PHYSICAL CHANGE

- A physical change alters the form of a substance, but does not change it to another substance.
- It changes shape or size
- It dissolves.
- It changes phase (freezes, boils, evaporates, condenses)
- Example:
Making Orange Juice



- Physical changes occur when matter changes its property but not its chemical nature.
- Physical property changes could include a change in: texture, shape, size, color, odor, volume, mass, weight, and density.





**Physical
Change**



▫ A Boiled egg



▫ Crushing an aspirin



Physical Change

□ Cutting paper?



Ice melting?



Physical Change





Sawing wood?

- **Physical Change**

□ **Disappearing
puddle?**

□ **Physical
Change**



A hand is shown holding a white, shallow cup filled with a white, powdery substance. A stream of dark, granular material is falling from the side of the cup. The background is black.

Dry ice?

Physical Change

CHEMICAL CHANGE

- ▢ Chemical changes are changes matter undergoes when it becomes new or different matter.
- ▢ It burns
- ▢ Temperature changes without heating/cooling
- ▢ It bubbles (makes a gas)
- ▢ It changes color
- ▢ It forms a precipitate

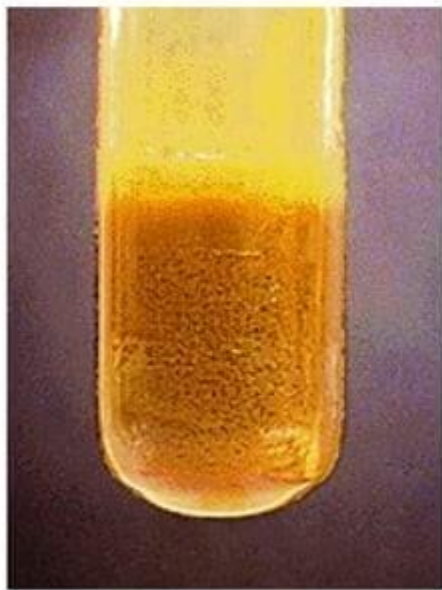
- When a substance undergoes a chemical change, it is changed into a different substance with different properties.
- To identify a chemical change look for signs such as color change, bubbling and fizzing, light production, smoke, and presence of heat.
- Example:

Baking a Cake



SIGNS OF A CHEMICAL CHANGE

1. Precipitation



2. Color Change



3. Gas Production

4. Temperature Change



□ **A chemical change occurs when fireworks are used. Fireworks are made of metals such as magnesium and copper. These change chemically as they light up the sky.**



□ **Toast
burning?**

❖ **Chemical
Change**



□ Rocket fuel burning?



❖ **Chemical
Change**

□ Metal rusting?



Chemical Change

□ **Candle
burning?**

□ **Chemical
Change**





IDENTIFY THE CHANGE

Tearing up paper?



Tearing up paper?
PHYSICAL CHANGE



Burning paper?



Burning paper?

CHEMICAL CHANGE



Mixing baking soda and vinegar?



Mixing baking soda and vinegar?

CHEMICAL CHANGE



Dissolving sugar into water?



Dissolving sugar into the
water?

PHYSICAL CHANGE



NETFLIX



The Chemistry of Cooking

What is a chemical reaction?



Do we see chemical reactions when we cook?

Physical & Chemical Changes

Physical and Chemical Changes: Chemistry for Kids - FreeSchool

<https://www.youtube.com/watch?v=x49BtB5dOwg>

PHYSICAL CHANGES – 0' 52''

CHEMICAL CHANGES – 3' 09''

DIFFERENCES – 4' 15''

EXTRA Chemical Reactions in Spanish

<https://www.youtube.com/watch?v=OU1KswXaJhA>

Definition

Chemical reaction: a process during which the molecular structure of a substance changes.

Reacción química: un proceso en el cual una sustancia se transforma, cambiando su estructura molecular.

(3°) Chemical Reactions on Netflix

Street Food: Buenos Aires, Argentina

Street Food (TV series) is an American documentary that premiered on Netflix on April 26, 2019. It explores street food around the world.



With a partner,
talk about where
you see chemical
reactions.

(00:00-04:44)



Ask your partner how many chemical processes they think the pizza passes through.

(6:56-9:22)



Do you and your partner think that chemical reactions helped Rubén create his business?

(15:50-18:18)



RUBÉN BATALLA
EL PUESTO DE RUBEN

What typical,
delicious
Spanish
foods DO
NOT not
require a
chemical
reaction?



