

# Physical and Chemical Changes



# Physical Changes

- Physical changes are changes that alter the size, shape, location or physical state of a substance but not its chemical state.



# Don't Use 'Dem Big Words

- **Physical State-**

- Solid
- Liquid
- Gas

- **Substance-**

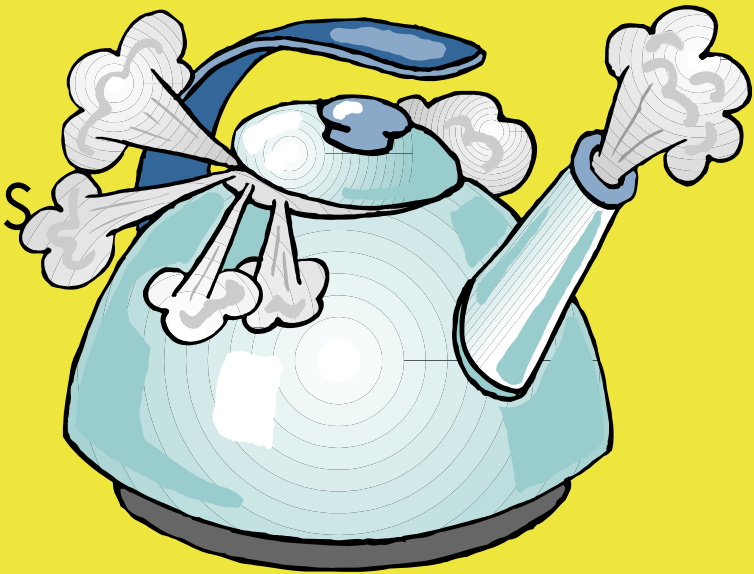
- Stuff... something...  
the item you are  
working with



# So What Does That All Mean?

- Ok... here's the deal...
  - If the thing is still the same thing after it has been changed...
  - It's a Physical Change.
  - Example... Boiling water

Boiling Water becomes  
Water vapor  
Water = water





# Here's An Example...

- A physical change in a substance doesn't change what the substance is.
- cutting paper –
  - physical change in the shape and size of the paper.

• **It is still paper!!!!!!**





# What Other Kinds of Changes Are Physical?

- Cutting
- Tearing
- Shredding
- Grinding
- Shrinking
- Enlarging
- Change in Phase
- Relocating
- Dissolving
- Rotating
- Molding (shaping)

# Chemical Changes

- Chemical changes are changes that alter the chemical make up of the substance being changed.



# Basically What You're Telling Me Is...

- If you end up with a chemical or chemicals that you did not start with,

It is a  
chemical  
change!!!!!!





# Here's An Example...

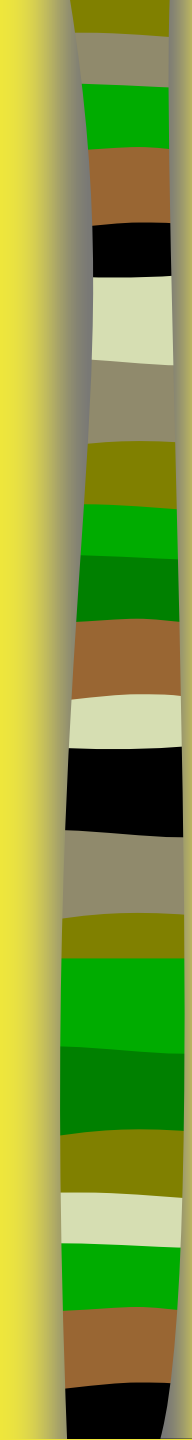
- Burning anything...
  - Once something burns, it can not burn again...
  - Burn a piece of wood and what do you have?
  - Ash... not wood. Ash cannot be burned again. It is a new substance!!!



# Another Example Is...



- Eating...
- Now eating can change food both physically and chemically.
- Chewing is Physical but...
- Once your spit touches the food chemicals in the saliva begin to change the food chemically.



# Signs That a Chemical Change has occurred

- Creation of a gas (bubbles)
- Creation or loss of heat
- Fire
- Rotting
- Breaking down (decomposition)
- Precipitation (Sour milk clumps)
- Cooking
- Rusting (oxidation)



# Physical and Chemical Changes

## Quiz ..... True or False??

1. With a physical change, no new substance is formed.
2. With a chemical change, a chemical reaction occurs.
3. With a physical change, energy is either given off or absorbed.
4. A chemical change can be easily reversed.
5. Eating food can be considered both physical and chemical changes.



# Physical and Chemical Changes

## Quiz..... Answers!

1. With a physical change, no new substance is formed. **TRUE**
2. With a chemical change, a chemical reaction occurs. **TRUE**
3. With a physical change, energy is either given off or absorbed. **FALSE**
4. A chemical change can be easily reversed. **FALSE**
5. Eating food can be considered both physical and chemical changes. **TRUE**



# ONLINE QUIZ

- [http://www.fordhamprep.org/gcurr  
an/sho/sho/review/rev15b.htm](http://www.fordhamprep.org/gcurr<br/>an/sho/sho/review/rev15b.htm)