

Unit E, Ch.1 - Matter and its Properties  
Notes

I. Physical Properties

A. Examples-

1. color
2. hardness
3. taste
4. ability to conduct heat
5. ability to conduct sound
6. ability to conduct electricity or to become a magnet
7. mass (ex. horse vs. dog)-mass of an object is always the same no matter where you are (on the earth or moon)

gravity (a  
about 450

- a. measured on a balance
8. weight-the weight of an object varies depending on the pull of car that weighs about 2,698 pounds on Earth weighs pounds on the moon)
- a. measured on a scale

9. density

change its

- a. density = mass divided by volume
- b. Pure substances always have the same density when measured under the same conditions.
- c. Changing the size or shape of a substance does not density.

10. solubility

matter in  
properties ex. rice,  
separate them; pepper and

- a. Mixture-a combination of 2 or more different kinds of which each keeps its own physical sugar and iron filings-you can water
- b. Solution-a type of mixture where particles of the 2 are evenly mixed; can't be easily water; salt and water; skim to separate the

substances  
separated ex. sugar and  
milk-use the physical properties  
particles

11. volume

## II. Changes in State

### A. 3 States of Matter

1. Solid-particles are packed tightly together
2. Liquid-particles are move more freely and slide past each other
3. Gas-particles are the farthest apart and move the fastest

### B. Changes Between States

1. Freezing-changes from liquid to a solid
2. Melting - change from solid to a liquid
3. Boiling - change from liquid to a gas
4. Evaporation - liquid becomes gas
5. Condensation - gas becomes a liquid; ex. water appears on

outside of a glass of cold water on a hot day because  
water vapor in the air is cooled on the surface of the glass, it  
condenses, forming water droplet.

## III. Changes in Matter

### A. Physical changes-ex. cutting paper, shaping clay

1. melting
2. boiling
3. freezing

### B. Chemical Changes (chemical reactions)-a new substance is formed

ex. iron that has rusted

1. burning/heat- a flame test to see different color of flames can  
identify a chemical change
2. bubbling/production of a gas
3. change in color