

4. Classifying Matter

A. Pure Substances

- one type of particle, a particle may be an atom or a molecule

1. Elements

- simplest form of matter
- made up of only 1 type of atom
- the periodic table lists all the different kinds of elements in the Universe
- Most elements are unstable

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2. Compounds

- made up of 2 or more types of atoms connected together to form molecules
- There are millions of different compounds in the Universe
- Most compounds are stable

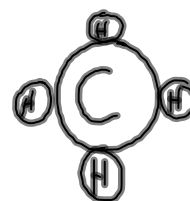
Water (H_2O)



Ammonia (NH_3)



Methane (CH_4)



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B. Mixtures

-made up of more than one type of particle

-the type of mixture is based on how the particles are mixed

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If you can see the different types of particles it is called a mechanical mixture

if the mixture looks the same but settles out (Ketchup) the mixture is called a suspension

If the mixture looks the same and stays the same it is called a solution

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(Insert pictures of different types of mixtures)

Homogenous mixture - Solution

Heterogenous - mechanical mixture

Heterogenous - suspension

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5. Particle Theory of Matter

- 1. All matter is made up of tiny particles.**
- 2. The particles of matter are always moving.**
- 3. The particles have spaces between them.**
- 4. Adding heat to matter makes the particles move faster.**

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6. States of matter

- used to describe pure substances, mixtures may have different states of matter mixed together
- used to describe how particles of a substance are arranged

(go onto Internet, copy and paste an image of a solid liquid and gas)

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7. Changing the States of matter

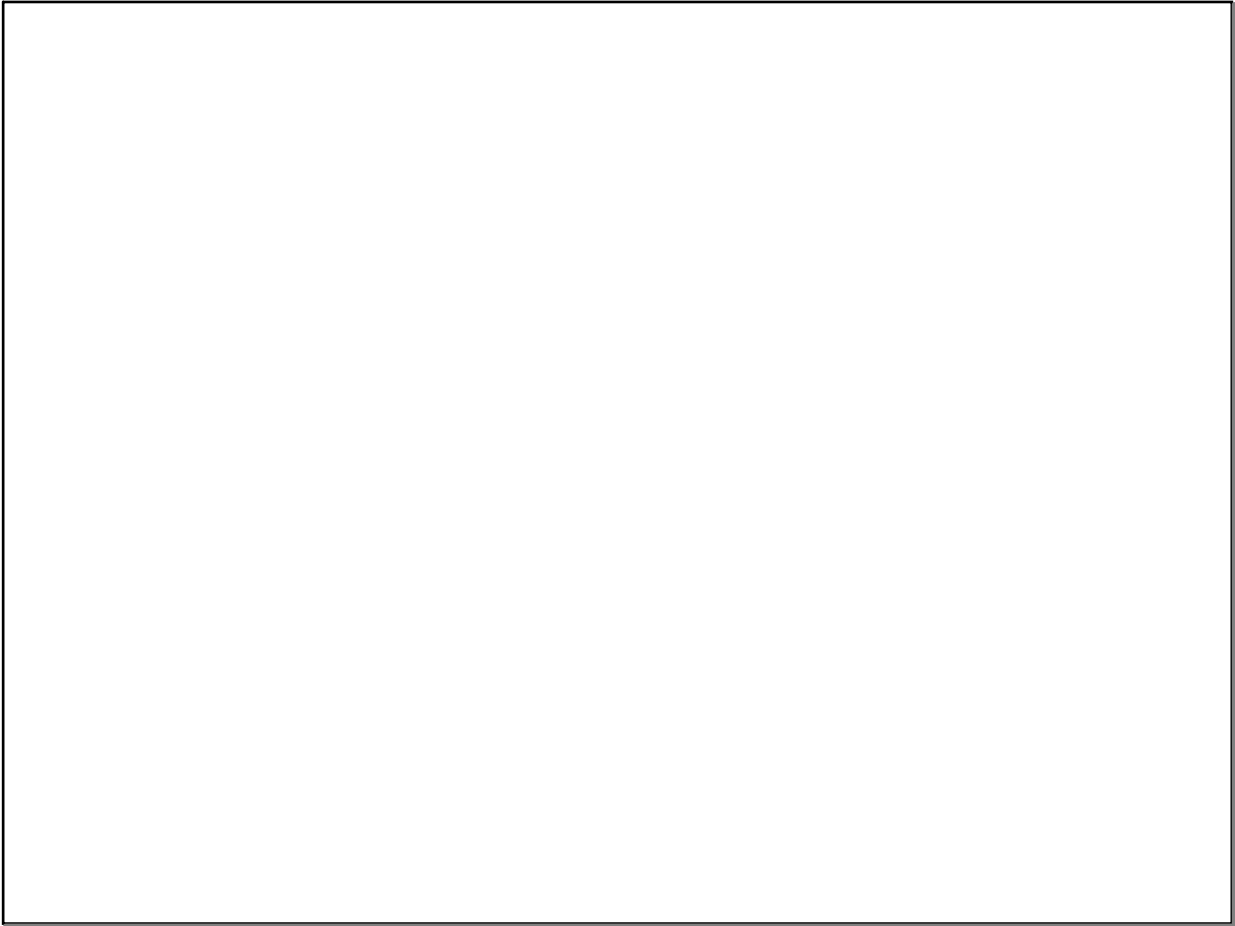
insert an image "changes of state"

- The only difference between the states of matter is the energy of the particles causing them to move and increase the space between the particles
- when there is a change of state the temperature does not change

most of the time solids are the most dense and gases are the least dense

ONLY water the solid is less dense than the liquid

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