

Notes: May 4 – May 9, 2014

Mixtures, Pure Substances

# The Model so Far

1. What do we know about our particles? **They have mass & take up space (volume).**

2. What do we know about how our particles arrange themselves? What is this property called?

**These particles can "pack together" in different ways, giving different substances and different states of matter This property of packing together is called density.**

3. What do we know about conservation of mass?

**These particles are neither created or destroyed. They can rearrange themselves into different substances.**

4. What have we added to the model? **The particles are sticky. They attract each other, especially solids & liquids.**

# Some Physical Properties

<b><u>Property</u></b>	<b><u>water</u></b>	<b><u>ethanol</u></b>
appearance	colorless	colorless
odor	none	noticeable
flammability	non-flammable	flammable
density	1.0 g/mL	0.79 g/mL
melting point	0°C	-117°C
boiling point	100°C	80°C
solubility	dissolves in ethanol	dissolves in water

# Study Guide

- Substances aren't mixed uniformly and are not evenly distributed are heterogeneous mixtures.
- Substances are evenly distributed, and the mixture is uniform (the same throughout are homogeneous mixtures.
- Another term for a homogeneous mixture is a solution.

# Study Guide

## Atom, pure substance, elements , compounds

- A pure substance can be classified as an element or a compound.
- An atom is the smallest unit of matter that maintains its chemical properties and physical properties.
- Elements are the particles that make up compounds and are composed of only one kind of atom. Elements can not be broken in to simpler substances
- Compounds are composed of two or more different types of elements and can be broken down to elements

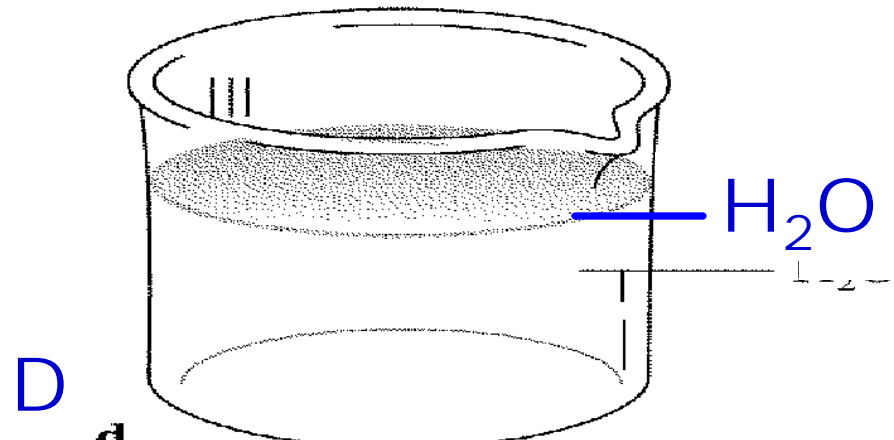
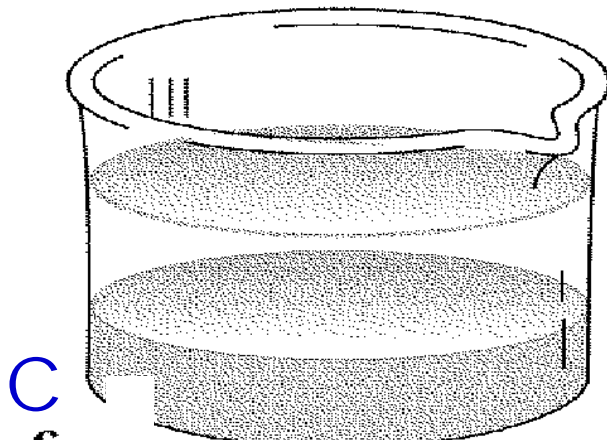
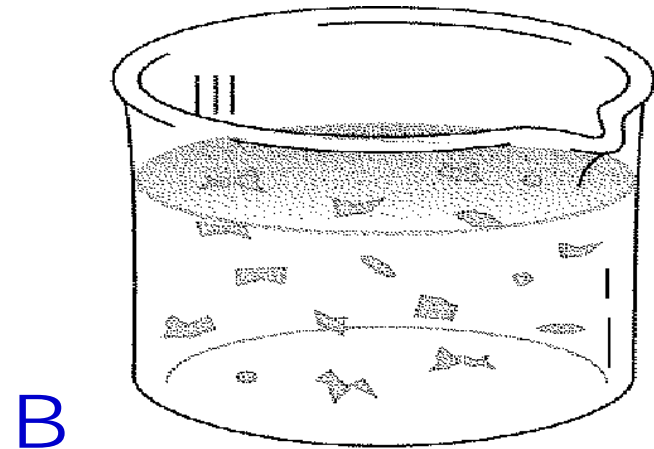
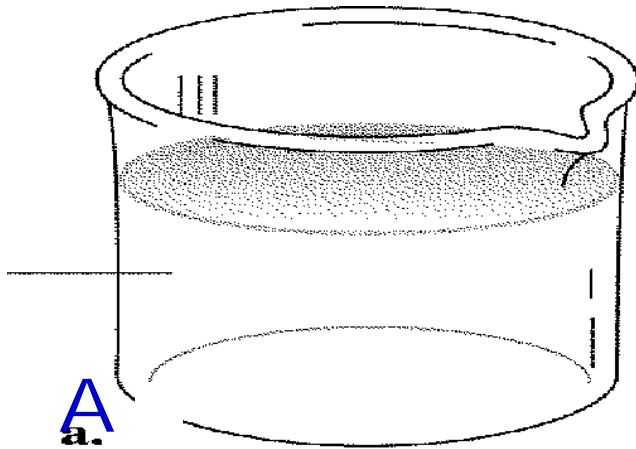
Draw the beakers.

1. Identify the homogeneous mixture(s)

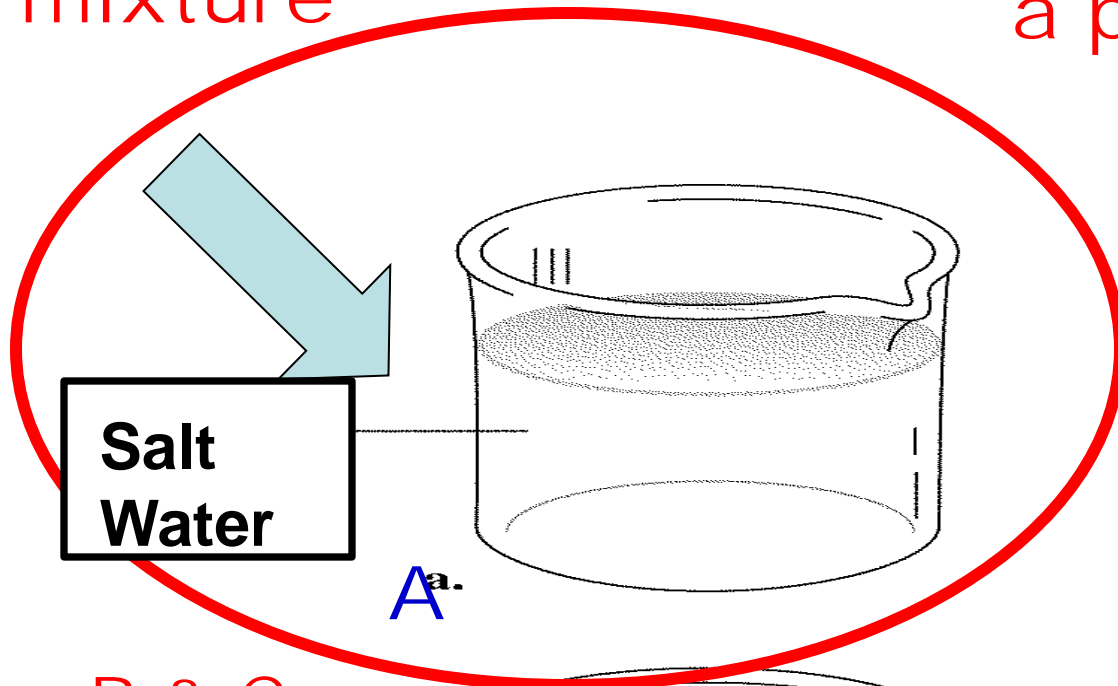
2. Identify the heterogeneous mixture(s)

3. Which is not a mixture?

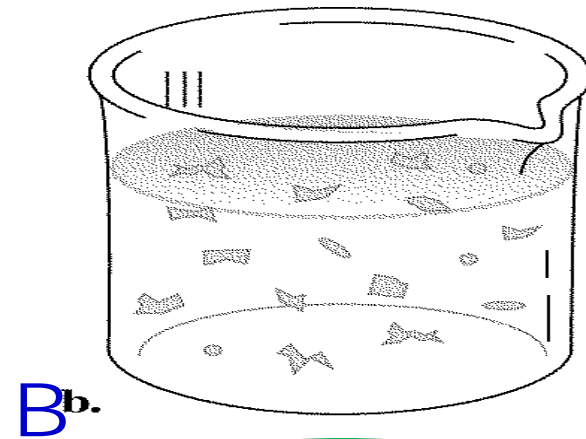
Salt  
water  
solution



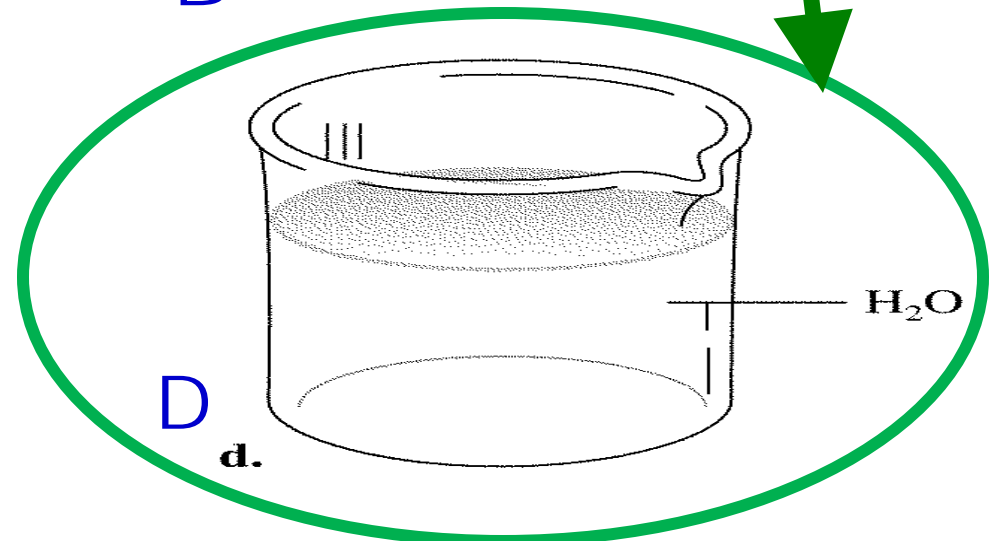
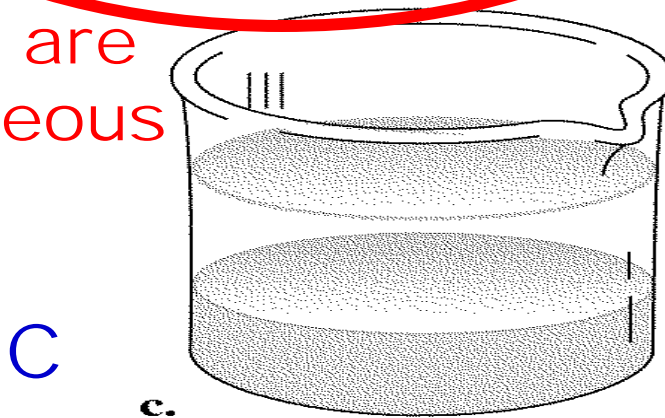
1. A is Homogeneous mixture



3. D: Not a mixture (it is a pure substance)



2. B & C are heterogeneous



# Quiz

homogeneous  
heterogeneous

pure substance  
mixture

Solution

1. Matter that is not mixed uniformly and is not evenly distributed is heterogeneous matter.
2. Matter that is evenly distributed, and is the same throughout is homogeneous matter.
3. Homogeneous matter can be classified as  
a mixture (a) or pure substance (b).
4. A mixture is made of two or more substances.
5. Mixtures can be heterogeneous (a) or homogeneous (b).



# Classification of Matter

1. Fill in the concept map below to show the relationship between the following: compound, element, matter, mixture, pure substance.

