

**Objectives:**

Differentiate between a pure substance and a mixture.

Use the characteristics of different substances to separate them from a mixture.

Explain the difference between a mixture and a compound

**DO NOW:** What makes materials different from each other?

Jan 7-10:43 AM

**Substance:**

Is a type of matter with a specific chemical make-up

H<sub>2</sub>O \*specific characteristics

**Examples of characteristics:**

color

smell

taste

density

solubility

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### Mixtures

two or more substance physically mixed together  
 \* maintain properties of former substances  
 "varied composition" 50% H<sub>2</sub>O 50% Ethyl alcohol  
 ↓ change made of 10% H<sub>2</sub>O 90% Ethyl alcohol

homogeneous vs. heterogeneous

↓  
same

↓  
different

filtration vs. distillation

↓  
separation  
by size of  
particles

↓  
separation by  
boiling point

Jan 7-10:52 AM

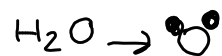
water - 1.0 g/mL  
 ethanol - 1.2 g/mL  
 50/50 mixture - 1.1 g/mL

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Element- one type of atom

Oxygen (O)  $\rightarrow$   $\bigcirc$     Hydrogen (H)  $\rightarrow$   $\bullet$

Compound- two or more atoms of elements bonded together

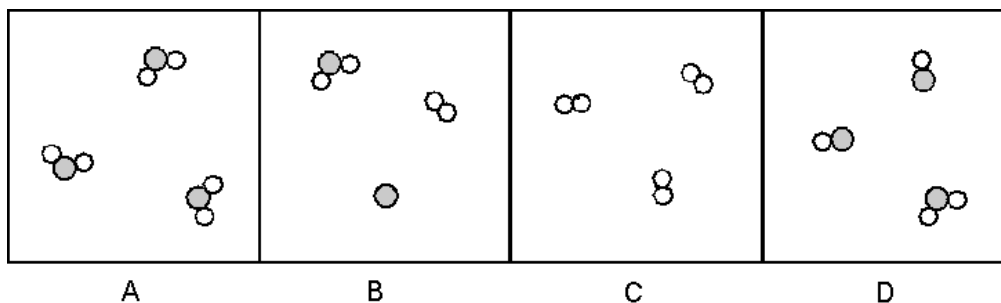


How is a compound different from a mixture?

- can't separate a compound physically
- substances are bonded together in a compound
- substances keep characteristics in a mixture

Jan 7-10:57 AM

5. Consider the four containers below.



- a. Which of these are mixtures? B, D pure substances? A, C
- b. Which contain only compounds? A, D only elements C

Jan 8-9:50 AM