

Name \_\_\_\_\_ Date \_\_\_\_\_



## ELEMENTS, COMPOUNDS, & MIXTURES QUIZ

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1. Use the word bank below to fill in blank spaces

**Elements**

**Mixtures**

**Compounds**

**Fixed**

**Chemical**

**Variable**

**Release**

**Physical**

**Absorb**

**Retain**

- a. A mixture consists of either two or more \_\_\_\_\_ or \_\_\_\_\_ not chemically combined.
- b. Mixtures can be separated by \_\_\_\_\_ or \_\_\_\_\_ means.
- c. Compounds have a \_\_\_\_\_ composition with elements combined in a specific ratio, while mixtures have a \_\_\_\_\_ composition with their components varying in proportion.
- d. Compounds often \_\_\_\_\_ heat during formation or reaction due to strong chemical bonds, whereas mixtures typically show minimal heat changes as their components \_\_\_\_\_ their individual properties.

2. Here are a few descriptions related to mixtures and compounds:

**A: A pure element**

**B: A mixture of elements**

**C: A pure compound**

**D: A mixture of compounds**

**E: A mixture of elements and compounds**

Which of the above descriptions best describes each of the following substances:

Copper _____	Sodium _____
Stainless steel _____	Bronze _____
Air _____	Salty water _____
Petroleum (crude oil) _____	Helium _____
Sodium chloride _____	Water _____
Glucose _____	Carbon _____

3. Classify each of the materials below. In the center column, state whether the material is a pure substance or a mixture. If the material is a pure substance, further classify it as either an element or compound in the right column. Write one entire word in each space.

<b>substance</b>	<b>Pure substance or Mixture</b>	<b>Element or compound</b>
Iron		
Sugar + pure water		
Limestone		

Orange juice		
Pacific ocean		
Air inside a balloon		
Aluminum		
Pure water		

**4. Indicate whether each of the following statements is True or False**

- a. Compounds can only exist as molecules: \_\_\_\_\_
- b. Mixtures can include atoms and molecules: \_\_\_\_\_
- c. Compounds can be broken down into new substances physically:  
\_\_\_\_\_
- d. Mixtures can be separated into their component substances by chemical reactions: \_\_\_\_\_
- e. In compounds, the properties of new substances are different from those of constituent elements: \_\_\_\_\_
- f. Mixtures can be represented by chemical formulae:  
\_\_\_\_\_

5. A solution is always a mixture but not every mixture is a solution

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6. Explain why water is a compound and not a mixture

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7. Explain why air is a mixture and not a compound

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8. When oil and water are combined, they separate into two layers. Is this a mixture? If so, what type?

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9. With regards to composition, what is the difference between a compound and a solution?

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**10. Complete the table below by giving the differences between mixtures and compounds**

	Mixture	Compounds
Composition		
Separation		
Chemical properties		