

LESSON 12 | How is a mixture different from a compound?

Sometimes two or more substances are just mixed together. They do not combine chemically. They do not make a compound. They make a **mixture**. The substances are physically combined. None of the substances in the mixture have been changed chemically. No chemical reaction has taken place. No new substances are formed.

Vegetable soup is an example of a mixture. So is salt and sand mixed together. You can still tell one part from the other.

What are the differences between a compound and a mixture? The chart below lists some of the differences.

MIXTURE	COMPOUND
The parts of a mixture do not change their properties.	The elements that make up a compound lose their chemical properties. The new compound has its own chemical properties.
The ratio between the parts of a mixture may be any amount.	The ratio between the parts of a mixture is a fixed amount.
Energy is not taken in or given off when a mixture is made or separated.	Energy is always taken in or given off when a compound is broken up or put together.
A mixture can be separated by physical means. For example, a strainer can separate some mixtures.	A compound can be separated only with a chemical reaction. For example, electrolysis changes water (H_2O) into hydrogen and oxygen.

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- _____ 1. A ratio of the parts of a mixture are exact.
- _____ 2. A ratio of the parts of a compound are exact.
- _____ 3. The parts of a mixture keep their properties.
- _____ 4. The elements of a compound keep their properties.
- _____ 5. We need energy to make or break up a compound.
- _____ 6. Hydrogen is a compound.
- _____ 7. Water is a compound.
- _____ 8. We need a chemical reaction to separate a compound.
- _____ 9. Electricity can separate some compounds.
- _____ 10. A magnet can separate water into oxygen and hydrogen.

MIXTURE OR COMPOUND

The chart below lists some terms and phrases that describe mixtures and compounds. Which ones describe mixtures? Which describe compounds? Put a check (✓) in the space to show your choice.

		Mixture	Compound
1.	properties change		
2.	properties do not change		
3.	exact ratios of elements		
4.	no exact ratios of elements		
5.	energy always taken in or given off		
6.	energy not taken in or given off		
7.	separated by chemical means		
8.	separated by physical means		
9.	a pile of iron filings and sulfur		
10.	iron sulfide		