

WORKSHEET ON CHEMICAL VS PHYSICAL PROPERTIES AND CHANGES

VOCABULARY WORD	DEFINITION
Physical Property	
Physical Change	Change in which the identity of the substance does NOT change
Chemical Property	
Chemical Change	

Physical or Chemical Property? Fill in the chart using the vocabulary words or phrases provided.

Each word is used once. Define the word when done!

Boiling point	Brittleness	Melting point	Flammability	Maleability	Viscosity
Ability to rust	Reactivity with vinegar	Elasticity	Transparency	Density	Conductivity
Chemical Property ↓		Definition			
		<input type="checkbox"/> The ability to burn			
		<input type="checkbox"/> Reacts with oxygen to produce rust			

Physical Property ↓	Definition
	<input type="checkbox"/> The property of letting light pass through something
	<input type="checkbox"/> Tendency to crack or break

Physical or Chemical Change? Indicate with a 'P' or a 'C' which type of change is taking place.

- | | |
|------------------------------------|---------------------------------|
| 1. _____ glass breaking | 10. _____ mixing salt and water |
| 2. _____ hammering wood together | 11. _____ mixing oil and water |
| 3. _____ a rusting bicycle | 12. _____ water evaporating |
| 4. _____ melting butter | 13. _____ cutting grass |
| 5. _____ separate sand from gravel | 14. _____ burning leaves |
| 6. _____ bleaching your hair | 15. _____ fireworks exploding |
| 7. _____ frying an egg | 16. _____ cutting your hair |
| 8. _____ squeeze oranges for juice | 17. _____ crushing a can |
| 9. _____ melting ice | 18. _____ boiling water |

1) What are the types of "evidence" for a chemical change? _____

2) To the right of each sentence, identify each of the following as a physical or a chemical change. Then, **explain why each is a chemical or physical change under the sentence.**

- a) _____ You leave your bicycle out in the rain and it rusts. _____
- b) _____ A sugar cube dissolves in water. _____
- c) _____ Pure potassium is normally stored in oil. When the oil is removed, a flame is produced because the potassium can now react with oxygen in the air. _____
- d) _____ Sand is mixed with water. _____
- e) _____ Scientists break up water up by separating it into O_2 and H_2 . _____
- f) _____ You are cleaning your bathroom and you accidentally mix bleach and ammonia, which produces a toxic gas, which makes you pass out. _____
- g) _____ Burning coal for a barbecue. _____
- h) _____ Chewing up a bite of hamburger. _____
- i) _____ You take a shower and your wet hair begins to dry. _____
- j) _____ Silver nitrate and sodium chloride mix to form a grey-violet precipitate. _____
- k) _____ Trimming a plant because it has grown too high. _____
- l) _____ Mashing up potatoes to make mashed potatoes. _____
- m) _____ Sodium polyacrylate and water mix in a bowl to form a gel. When the water evaporates, the sodium polyacrylate remains in the bowl. _____
- n) _____ Hydrogen peroxide is poured on some liver the liver begins to break down. _____

4) Identify each statement as being true or false to the right of the sentence.

- a. _____ A change in size or shape is a physical change.
- b. _____ A chemical change means a new substance with new properties was formed
- c. _____ An example of a chemical change is when water freezes.
- d. _____ When platinum is heated, then cooled to its original state, we say this is a physical change.
- e. _____ Milk turning sour is a physical change because a change in odor does not indicate a chemical change.
- f. _____ When magnesium is burned, ash forms. We say this is a physical change because the magnesium looks different.
- g. _____ When citric acid and baking soda mix, carbon dioxide is produced and the temperature decreases. This must be a chemical change.