

Grade 7 Physical and Chemical Changes Worksheets

A. Classify the changes involved in the following processes as physical or chemical changes:

1. Photosynthesis
2. Dissolving sugar in water
3. Burning of coal
4. Melting of wax
5. Beating aluminium to make aluminium foil
6. Digestion of food

B. State 'True' or 'False':

1. Cutting a log of wood into pieces is a chemical change
2. Formation of manure from leaves is a physical change
3. Iron pipes coated with zinc do not get rusted easily
4. Iron and rust are the same substances.
5. Condensation of steam is not a chemical change.

C. Fill in the blanks:

1. When carbon dioxide is passed through lime water, it turns milky due to the formation of
2. The chemical name of baking soda is
3. Two methods by which rusting of iron can be prevented are and
4. Changes in which only properties of a substance change are called physical changes.
5. Changes in which new substances are formed are called changes.
6. Formation of crystals of sugar from a sugary syrup is a chemical change.

D. Answer the following questions in short:

1. When baking soda is mixed with lemon juice, bubbles are formed with the evolution of a gas. What type of change is it? Explain.
2. When a candle burns, both physical and chemical changes take place. Identify these changes. Give another example of a familiar process in which both the chemical and physical changes take place.
3. How would you show that setting of curd is a chemical change?
4. Explain why burning of wood and cutting it into small pieces are considered as two different types of changes.
5. Describe how crystals of copper sulphate are prepared.

6. Explain how painting of an iron gate prevents it from rusting.
7. Explain why rusting of iron objects is faster in coastal areas than in deserts.
8. What kind of change is shown by tearing of paper?
9. Define chemical reaction.
10. What is the purpose of galvanising?
11. What is the use of crystallization process?
12. Why are physical changes generally reversible?
13. Can we call the breaking down of ozone a chemical change?

E. Tick (✓) the correct option:

1. The gas we use in the kitchen is called liquified petroleum gas (LPG). In the cylinder it exist as a liquid. When it comes out from the cylinder it becomes a gas (Change—A) then it burns (Change—B). The following statements pertain to these changes. Choose the correct one:

- (a) Process—A is a chemical change.
- (b) Process—B is a chemical change.
- (c) Both processes A and B are chemical changes.
- (d) None of these processes is a chemical change.

2. Anaerobic bacteria digest animal waste and produce biogas (Change—A). The biogas is then burnt as fuel (Change—B). The following statements pertain to these changes. Choose the correct one:

- (a) Process—A is a chemical change.
- (b) Process—B is a chemical change.
- (c) Both processes A and B are chemical changes.
- (d) None of these processes is a chemical change.

3. Rusting results in:

- (a) gain of iron
- (b) no loss of metal
- (c) loss of metal
- (d) none of these

4. Chemical changes are:

- (a) reversible
- (b) irreversible
- (c) changes involving formation of one or more new substances
- (d) both (b) and (c)

5. In making of alloys:

- (a) more than two metals are mixed
- (b) only two metals are mixed

- (c) two or more metals are mixed in a fixed ratio
(d) none of the above

F. Match the following:

'A'	'B'
1. Formation of curd from milk	a. rusting
2. Melting of glaciers	b. reactants and products
3. Chemical reactions	c. acid + base $\rightarrow$ salt + water
4. Neutralization	d. chemical change
5. Decaying of layers of metal	e. physical change

G. Complete the following reactidns:

1. MgO (Magnesium oxide) + H_2O (Water) $\rightarrow$
2. CO_2 (Carbon dioxide) + $[\text{Ca}(\text{OH})_2]$ (Lime water) $\rightarrow$

H. Describe two changes that are harmful. Explain why you consider them harmful. How can you prevent them?

I. Take three glass bottles with wide mouths. Label them A, B and C. Fill about half of bottle A with ordinary tap water. Fill bottle B with water which has been boiled for several minutes, to the same level as in A. In bottle C, take the same boiled water and of the same amount as in other bottles. In each bottle put a few similar iron nails so that they are completely under water. Add a teaspoonful of cooking oil to the water in bottle C so that it forms a film on its surface. Put the bottles away for a few days. Take out nails from each bottle and observe them. Explain your observations.

J. Prepare crystals of alum.

K. Collect information about the types of fuels used for cooking in your area. Discuss with your teachers/parents/others which fuels are less polluting and why.

L. Science Puzzle:

Solve the following crossword puzzle:

Across ($\rightarrow$):

1. A substance that goes into solution.
3. A composition of two or more metals.
4. Reaction in which heat is absorbed.
6. A hydrated oxide of iron, when iron is exposed to H_2O and air.

Down ($\downarrow$):

2. A substanch which dissolves other substance in water.
5. A substance which has solidified in a definite geometrical form.

7. It represents the combining power of an atom with another atom.

