

# Learnzy Academy

## Worksheet: Metals and Non-metals

1. Food cans are coated with tin and not with zinc because (a) zinc is costlier than tin. (b) zinc has a higher melting point than tin. (c) zinc is more reactive than tin. (d) zinc is less reactive than tin.
2. Why do ionic compounds have high melting points?
3. Name two metals which will displace hydrogen from dilute acids, and two metals which will not.
4. What would you observe when zinc is added to a solution of iron(II) sulphate? Write the chemical reaction that takes place.
5. A man went door to door posing as a goldsmith. He promised to bring back the glitter of old and dull gold ornaments. An unsuspecting lady gave a set of gold bangles to him which he dipped in a particular solution. The bangles sparkled like new but their weight was reduced drastically. The lady was upset but after a futile argument the man beat a hasty retreat. Can you play the detective to find out the nature of the solution he had used?
6. What chemical process is used for obtaining a metal from its oxide?
7. You are given a hammer, a battery, a bulb, wires and a switch. (a) How could you use them to distinguish between samples of metals and non-metals? (b) Assess the usefulness of these tests in distinguishing between metals and non-metals.
8. State two ways to prevent the rusting of iron.
9. Give reasons why copper is used to make hot water tanks and not steel (an alloy of iron).
10. Which of the following methods is suitable for preventing an iron frying pan from rusting?  
(a) Applying grease (b) Applying paint (c) Applying a coating of zinc (d) All of the above
11. Show the formation of  $\text{Na}_2\text{O}$  and  $\text{MgO}$  by the transfer of electrons.
12. Why is sodium kept immersed in kerosene oil?
13. An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be (a) calcium (b) carbon (c) silicon (d) iron.
14. Explain the meanings of malleable and ductile
15. Which of the following pairs will give displacement reactions? (a)  $\text{NaCl}$  solution and copper metal (b)  $\text{MgCl}_2$  solution and aluminium metal (c)  $\text{FeSO}_4$  solution and silver metal (d)  $\text{AgNO}_3$  solution and copper metal
16. Which gas is produced when dilute hydrochloric acid is added to a reactive metal? Write the chemical reaction when iron reacts with dilute  $\text{H}_2\text{SO}_4$ .

- 17.** What type of oxides are formed when non-metals combine with oxygen?
- 18.** Give an example of a metal which (i) is a liquid at room temperature. (ii) can be easily cut with a knife. (iii) is the best conductor of heat. (iv) is a poor conductor of heat.
- 19.** Write the electron-dot structures for sodium, oxygen and magnesium.
- 20.** Differentiate between metal and non-metal on the basis of their chemical properties.