INDIAN SCHOOL AL WADI AL KABIR

CLASS: VI	**DEPARTMENT:** **SCIENCE - 2020 -2021**	**Date of completion : 02.07.2020**
WORKSHEET NO.: 5 **With answers**	**TOPIC: SORTING MATERIALS INTO GROUPS**	**Note: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE TYPE QUESTIONS:

1. Which pair of substances among the following would float in a tumbler half filled with water?

   a] Cotton thread, thermocol
   b] Feather, plastic ball
   c] Metal pin, oil drop
   d] Rubber band, coin

2. The space between particles is maximum in –

   a] Solids
   b] Liquids
   c] Gases
   d] Both solids and liquids

3. Boojho found a bag containing the following materials.

   a) Mirror
   b) Paper stained with oil
   c) Magnet
   d) Glass spectacles

   Help Boojho in finding out material(s) which is/are opaque.

   a] (i) only
   b] (iv) only
   c] (ii) and (iv)
   d] (i) and (iii)

4. Read the following statements and choose the incorrect statement –

   a] Butter paper is transparent. Things can be clearly seen through it.
   b] Cotton is soft. It can be compressed easily.
   c] An iron nail is hard and it sinks in water.
   d] All are correct.

5. What makes the basis of sorting materials into groups?

   a] Similarities in their properties
   b] Differences in their properties
   c] Both similarities and differences in their properties
   d] None of these

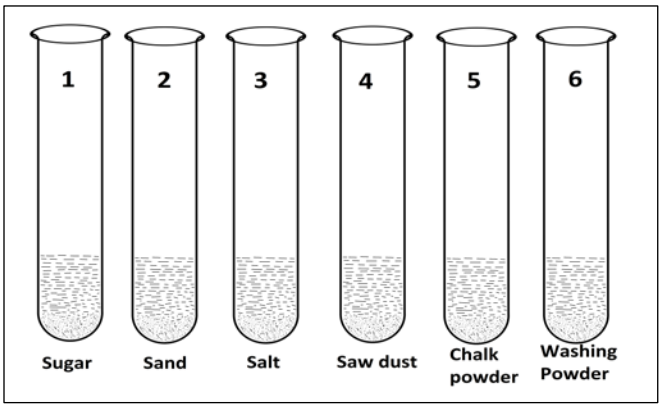
6. Take 10ml of water in 6 test tubes each and add different samples of substances to each test tube as shown in the given figure. Shake the test tubes vigorously for a couple of seconds and leave them undisturbed. In which of these test tubes, sample substances will remain insoluble in water?

a] 1, 2 and 3

b] 2, 4 and 5

c] 2, 3 and 4

d] 4, 5 and 6



7. While doing an activity in class, the teacher asked Paheli to handover a translucent material. Which among the following materials will Paheli pick and give her teacher?

a] Glass tumbler

b] Mirror

c] Muslin cloth

d] Aluminium foil

8. For question numbers 8 to 10, two statements are given- one labelled Assertion (A) and the other labelled Reason (R).

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

i) Both A and R are true and R is correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

9. **Assertion (A):** Copper metal have lower density than water.

Reason (R): The materials which sink in the water have higher density than water.

[iv] A is false but R is true.

10. **Assertion (A):** Diamond is a hard material.

Reason (R): The material which can be compressed or scratched easily are called hard materials

[iii] A is true but R is false.

11. **Assertion (A):** Shopkeepers usually keep biscuits, sweets etc. in transparent containers of glass or plastic.

    Reason (R): Buyers could see through the transparent containers.

    [i] Both A and R are true and R is correct explanation of the assertion.

II. BASIC CONCEPTS LEVEL:

1. Define – a] Classification - [The systematic arrangement of things on the basis of certain similarities and differences is called **sorting** or **classification**.]

   b] Material – [The substance which is used in making different objects is known as **Material**.]
2. Name the two gases used by aquatic plants and animals, that are soluble in water.

   [Oxygen and Carbon dioxide]
3. What is the basis of grouping materials? [Materials are grouped together on the basis of similarities and differences in their properties]
4. List five physical properties of materials. [Lustrous, hard or soft, solubility in water, physical state, density]
5. What do you understand by the word 'matter'? [Anything that occupies space and has mass is called matter. It exists in different shapes, sizes, colours and forms.]
6. What do you mean by lustre of a substance? [Those materials which have shiny appearance are said to be lustrous. Metals are generally lustrous in nature. E.g.: Gold and Silver.]
7. Give reasons for the following -

   a) When blue ink is dropped in water, the water turns blue.

   [Water and ink are miscible liquids (liquids that mix well with each other)]

   b) A leaf floats in water while a stone sink.

   [Leaf has less density hence it floats in water stone has high density hence it sinks.]

   c) Mercury used in thermometers [Mercury is lustrous so it is easy to read the temperature.]

d) we keep our money and valuables in metallic or wooden almirah and not in glass cupboard? [metallic or wooden almirah are opaque so no one can see what is kept inside it. Glass is transparent so everyone can see what is kept inside glass cupboard]

III. INTERMEDIATE LEVEL:

1. Differentiate among transparent, translucent and opaque objects.

TRANSPARENT	TRANSLUCENT	OPAQUE
Objects that allow light to pass through them completely are called **transparent** materials. **E.g.**: Glass, air, clear water etc.	Objects that allow only a small amount of light to pass through them are called **translucent** objects. **E.g**.: Butter paper, thin plastic, tissue paper etc.	Objects that do not allow any light to pass through them are called **opaque** objects. **E.g**.: Wood, metals, brick wall etc.

2. Is grouping of materials necessary? Give one reason. [Yes. By grouping, we can find the required items whenever required, easily and can also compare with similar items]
3. Why don't we use papers to prepare tables and chairs? [Paper is not hard and can get easily wet with water, hence not used to make furniture]
4. How is density of an object related to its floating or sinking? [An object will float if its density is lesser than liquid. It will sink if its density is greater than that of the surrounding liquid]
5. What is the need for classifying materials into different groups?
   [Importance of classification – i] Classification helps in systematic study of objects.
   ii] Classification helps in identifying and locating things.
   iii] It helps to study the properties of objects of one kind
   iv] It helps to understand similarities and dissimilarities among objects

6.What are miscible and immiscible liquids? Give one example for each.
[Liquids that get completely mixed with each other are called miscible liquids.

E.g.: Honey, milk, vinegar etc.
Liquids that do not mix with each other are called immiscible liquids.
E.g.: Mustard oil, kerosene etc.]

7. What do you mean by hardness of materials? [It is the property of materials that can be found out by pressing the materials. A material may be soft or hard.

Soft materials - Materials that can be compressed or scratched easily are called soft materials. E.g.: Cotton, sponge. Hard materials - Materials that are difficult to compress or scratched easily are called hard materials. E.g.: Iron and most of the other metals.]

8. Compare any three properties solids, liquids and gases.
9. Complete the following table given below:

PHYSICAL PROPERTY	SOLIDS	LIQUIDS	GASES
SHAPE	Has a fixed shape	Takes up the shape of the container	Takes up the shape of the container
VOLUME	Fixed volume	Fixed volume	Changes volume to fill its container
FLUIDITY	Does not flow easily	Flows easily	Flows easily
COMPRESSIBILITY	Not easy to compress	Not easy to compress	Easy to compress
SPACE BETWEEN PARTICALS	Most closely packed	Less closely packed	Least closely packed

MATERIAL	STATE	SOLUBLE / INSOLUBLE / MISCIBLE / IMMISCIBLE
1. Saw dust	Solid	Insoluble
2. salt	Solid	Soluble
3. Honey	Liquid	Miscible
4. Carbon dioxide	Gas	Soluble
5. Mustard oil	Liquid	Immiscible

IV. ADVANCED LEVEL:

1. Why do you think oxygen dissolved in water is important for the survival of aquatic animals and plants?? [Oxygen gas is soluble in water. The plants and animals which live in water use the oxygen dissolved in water for respiration]
2. How is carbon dioxide gas dissolved in water helpful to the plants which live in water? [Hint: Plants live in water use carbon dioxide for photosynthesis]

3. X, Y and Z are the three types of materials. The materials X and Y can break into pieces easily when hit with an object but material Z does not break easily. The material X is used in the windows of bathroom of our house whereas material Y is used in the windows of our drawing room. The material Z is used in making doors and almirahs of our house.
   a) What do you think material X could be? What is the general name of materials like X?
   [Hint: ground glass, translucent]
   b) What could material Y be? Write the general name of materials like Y?
   [Hint: clear glass, transparent]
   c) What could material Z be? What is the general name of materials like Z?
   [Hint: wood, opaque]
4. Find the odd one out from the followings and give reason for your choice
   a] Nail, Utensils, Magnet, Beaker, Coin [Beaker (made of glass); all others are made of metals]
   b] Wood, Stone, Iron, Cotton, Diamond [Cotton (soft material); all others are made hard materials]

IV. EXEMPLAR QUESTIONS:

1. It was Paheli's birthday. Her grandmother gave her two gifts made up of metals, one old dull silver spoon and a pair of lustrous gold ear-rings. She was surprised to see the difference in the appearance of the two metals. Can you explain the reason for this difference? [Gold metal does not lose its shine or luster when exposed to atmosphere. gold metal will remain unaffected by air, water and other gases in the atmosphere whereas silver metal on long exposure to moist air loses its shine and becomes dull. That why old silver spoon was giving dull appearance.]
2. Take a small cotton ball and place it in a tumbler/bowl filled with water. Observe it for at least 10 minutes. Will it float or sink in water and why?
   [Hint: Cotton boll initially floats on water but after few minutes, it sinks because it absorbs water and become heavy]

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