



## Sorting Materials into Groups

### IN TEXT QUESTIONS

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**Q.1.** List some materials that are used for making more than one type of an object.

**Ans.** List of some materials that are used for making more than one type of an object as follows:

**Wood** Chair, table, plough, bullock cart and its wheels.

**Paper** Books, notebooks, newspaper, toys, calendars.

**Leather** Shoes, belts, wallet, bags and photo albums.

**Plastic** Buckets, lunch boxes, toys and pipes.

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**Q.2.** Why a tumbler is not made with a piece of cloth?

**Ans.** A tumbler is not made with a piece of cloth because we generally use a tumbler to keep a liquid. So, for a tumbler, we need glass, plastics, metals or other such materials that will hold water.

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**Q.3.** Why iron appears different from copper and aluminium?

**Ans.** Iron reacts with air and moisture and lose its shine and appears dull but in the case of copper and aluminium, these maintain their shine.

**Q.4.** Check whether the substance is disappear in water or not?

Substance	Disappears in water/does not disappear
Salt	Disappears completely in water
Sugar	
Sand	
Chalk powder	
Sawdust	

**Ans.**

Substance	Disappears in water/does not disappear
Salt	Disappears completely in water
Sugar	Disappears completely in water
Sand	Does not disappear
Chalk powder	Does not disappear
Sawdust	Does not disappear

**Q.5. Do liquids dissolve in water?**

**Ans.** Some liquids get completely dissolve in water. Some others do not dissolve in water and form a separate layer when kept aside for some time.

**Q.6. Check whether the liquid is mix or soluble in water or not?**

Liquid	Mixes well/Does not mix
Vinegar	Mixes well
Lemon juice	
Mustard oil	
Coconut oil	
Kerosene	

**Ans.** The complete table is shown as below:

Liquid	Mixes well/Does not mix
Vinegar	Mixes well
Lemon juice	Mixes well
Mustard oil	Does not mix
Coconut oil	Does not mix
Kerosene	Does not mix

**Q.7. Give two examples in which gas dissolve in water.**

**Ans.** Two examples are as follows:

**Oxygen** This gas dissolved in water, is very important for the survival of animals and plants that live in water.

**Carbon dioxide** This gas dissolved in cold drinks to make better taste.

**Q.8. Do gases also dissolve in water?**

**Ans.** Some gases are soluble in water whereas others are not. Water usually has small quantities of some gases dissolved in it. e.g. oxygen gas dissolved in water.

**Q.9. Why do we need to group materials?**

**Ans.** We need to group materials for our convenience and to study their properties.

**Q.10. Why a shopkeeper prefers to keep biscuits and sweets in a glass or plastic container?**

**Ans.** Due to transparent nature of glass or plastics container, biscuits, sweets, etc can be seen easily by buyers, so shopkeepers do like this.



# NCERT

## Exercises

(Questions-Solutions)

### EXERCISES

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**Q.1.** Name five objects which can be made from wood.

**Ans.** Five objects which can be made from wood are as follows:

- (i) Door
- (ii) Window
- (iii) Table
- (iv) Chair
- (v) Boat

**Q.2.** Select those objects from the following which shine:

**Glass bowl, plastic toy, steel spoon, cotton shirt**

**Ans.** From the given objects, glass bowl and steel spoon are shiny objects which also called lustrous materials.

**Q.3.** Match the objects given below with the materials from which they could be made. Remember, an object could be made from more than one material and a given material could be used for making many objects.

Objects	Materials
Book	Glass
Tumbler	Wood
Chair	Paper
Toy	Leather
Shoes	Plastic

**Ans.** The correct table is shown as below:

Objects	Materials
Book	Paper
Tumbler	Glass and plastic
Chair	Wood and plastic
Toy	Plastic and wood
Shoes	Leather

**Q.4.** State whether the statements given below are True or False.

- (a) Stone is transparent while glass is opaque.
- (b) A notebook has lustre while eraser does not.
- (c) Chalk dissolves in water.
- (d) A piece of wood floats on water.
- (e) Sugar does not dissolve in water.
- (f) Oil mixes with water.

(g) Sand settles down in water.

(d) Vinegar dissolves in water.

- Ans.** (a) False, glass is transparent because it allows light to pass through it, while stone is opaque because it does not allow light to pass through it.  
(b) False, notebook and eraser do not have any lustre because they are not metals.  
(c) False, chalk is insoluble in water.  
(d) True, wood floats on water because density of wood is lesser than that of water.  
(e) False, sugar is soluble in water.  
(f) False, oil does not mix with water, in fact it floats on water.  
(g) True, it is heavier than water, i.e. its density is more than that of water.  
(h) True, it is soluble/dissolve in water.

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**Q.5.** Given below are the names of some objects and materials: Water, basketball, orange, sugar, globe, apple and earthen pitcher. Group them as

(a) Round shaped and other shapes.

(b) Eatables and non-eatables.

- Ans.** (a) Objects or materials which are in the form of circle, are known as round shapes.

Round shape	Other shape
Basketball	Water
Apple	Sugar
Orange	
Globe	
Earthen pitcher	

- (b) The substances which we can eat, are known as eatable otherwise it is known as non-eatable.

Eatables	Non-eatables
Water	Basketball
Orange	Globe
Apple Sugar	Earthen. pitcher

**Q.6.** List all items known to you that float on water. Check and see if they will float on an oil or kerosene.

- Ans.** (a) List of some items that float on water are as follows:

- (i) Wood (ii) Wax  
(iii) Thermocol (iv) Oil  
(v) Ice (vi) Plastic

- (b) List of items that float on oil or kerosene are as follows:

- (i) Wood (ii) Paper  
(iii) Wax (iv) Plastic  
(v) Thermocol

**Q.7.** Find the odd one out from the following:

(a) Chair, Bed, Table, Baby, Cupboard

(b) Rose, Jasmine, Boat, Marigold, Lotus

(c) Aluminium, Iron, Copper, Silver, Sand

(d) Sugar, Salt, Sand, Copper sulphate

**Ans.**

- (a) Except baby, all others are non-living things.
- (b) Except boat, all others are types of flower.
- (c) Except sand, all others are metals.
- (d) Except sand, all others are soluble in water.



# NCERT

## Exemplar

(Problems-Solutions)

### MULTIPLE CHOICE QUESTIONS

- Q 1.** An iron nail is kept in each of the following liquids. In which case would it lose its shine and appear dull?  
(a) Mustard oil (b) Soft drink  
(c) Coconut oil (d) Kerosene

**Ans.** (b) Soft drink can clean tarnished brass and other metal alloys due to their acidity.

- Q 2.** Pick one material from the following which is completely soluble in water.  
(a) Chalk powder  
(b) Tea leaves  
(c) Glucose  
(d) Sawdust

**Ans.** (c) Glucose is completely soluble in water.

- Q 3.** You are provided with the following materials:  
(i) Magnifying glass (ii) Mirror  
(iii) Stainless steel plate (iv) Glass tumbler  
Which of the above materials will you identify as transparent?  
(a) (i) and (ii) (b) (i) and (iii)  
(c) (i) and (iv) (d) (iii) and (iv)

**Ans.** (c) Magnifying glass and glass tumbler are transparent materials.

- Q 4.** Boojho found a bag containing the following materials:  
(i) Mirror  
(ii) Paper stained with oil  
(iii) Magnet  
(iv) Glass spectacles  
Help Boojho in finding out the material(s) which is/are opaque.  
(a) Only (i) (b) Only (iv)  
(c) (i) and (iii) (d) (ii) and (iv)

**Ans.** (c) Materials which do not allow light to pass through them are called opaque. Hence, mirror and magnet are opaque materials.

- Q 5.** 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

**Ans.** (c) The material through which an object can be seen but not clearly is called translucent. Hence, muslin cloth is a translucent material.

**Q 6.** 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) Pin, oil drops
- (d) Rubber band, coin

**Ans.** (b) Feather and plastic ball will float on water.

**Q 7.** Which among the following are commonly used for making a safety pin?

- (a) Wood and glass
- (b) Plastic and glass
- (c) Leather and plastic
- (d) Steel and plastic

**Ans.** (d) Steel and plastic are commonly used for making a safety pin.

**Q 8.** Which of the following materials is not lustrous?

- (a) Gold
- (b) Silver
- (c) Wood
- (d) Diamond

**Ans.** (c) Materials that are shiny are called lustrous materials. Hence, wood is not a lustrous material.

**Q 9.** Find the odd one out from the following?

- (a) Tawa
- (b) Spade
- (c) Pressure cooker
- (d) Eraser

**Ans.** (d) Eraser as it is made up of rubber and soft in nature does not belong from the group of given materials.

**Q 10.** Which type of the following materials is used for making the front glass (wind screen) of a car?

- (a) Transparent
- (b) Translucent
- (c) Opaque
- (d) All of these

**Ans.** (a) Transparent glass is used for making the front glass of a car.

#### VERY SHORT ANSWER TYPE QUESTIONS

**Q 11.** 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 earrings. She was surprised to see the difference in the appearance of the two metals. Can you explain the reason for this difference?

**Ans.** The silver spoon on long exposure to moist air has lost its shine and appears dull whereas gold does not tarnish.

**Q 12.** Mixtures of red chilli powder in water, butter in water, petrol in water and honey in water were given to Radha, jSudha, Sofia and Raveena respectively. Whose mixture is in solution form?

**Ans.** Raveena has got a solution because honey will dissolve in water whereas red chilli powder, butter and petrol float on water.

**Q 13.** On a bright sunny day, Shikha was playing hide and I seek with her brother. She hid herself behind a glass door. Do you think her brother will be able to locate her? If yes, why? If no, why not?

**Ans.** Yes, her brother can easily locate her because glass door is a transparent material.

**Q 14.** Take a small cotton ball and place it in a tumbler/bowl filled with water. Observe it for atleast 10 minutes. Will it float or sink in water and why?

**Ans.** Cotton ball initially floats on water but after few minutes (i.e. 10 min), it sinks because it absorbs water.

### SHORT ANSWER TYPE QUESTIONS

**Q 15.** Which among the following materials would you identify as soft materials and why?  
Ice, rubber band, leaf, eraser, pencil, pearl, a piece of wooden board, cooked rice, pulses and fresh chapati.

**Ans.** Materials which can be compressed or scratched easily are called soft materials.  
Here, rubber band, leaf, eraser, cooked rice and fresh chapati are soft materials because they can be compressed or scratched easily.

**Q 16.** You are provided with the following materials: Turmeric, honey, mustard oil, water, glucose, rice flour, groundnut oil.

Make any three pairs of substances where one substance is soluble in the other and any three pairs of substance where one substance remains insoluble in the other substances.

**Ans.** Substances which are soluble

- (i) Honey in water
- (ii) Glucose in water
- (iii) Groundnut oil in mustard oil

Substances which are insoluble

- (i) Turmeric in water
- (ii) Rice flour in water
- (iii) Mustard oil in water

**Q 17.** During summer holidays, a group of children collected a lump of salt, green grass, broken glass piece, a small thermocol box, pen, iron nail, glass marbles, hair, naphthalene ball, a piece of sugar candy (mishri) and tried to group them on the basis of properties given in table. Help them in filling the table.

Name of the material	Appearance (Hard/Soft)	Transparency (Transparent/Translucent/Opaque)	Floats/Sinks in water	Soluble/Insoluble in water
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**Ans.** The complete tables is shown as below:

Name of the material	Appearance (Hard/Soft)	Transparency (Transparent/Translucent/Opaque)	Floats/Sinks in water	Soluble/Insoluble in water
Lump of salt	Hard	Opaque	Sinks	Soluble
Green grass	Soft	Opaque	Floats	Insoluble
Broken glass piece	Hard	Transparent	Sinks	Insoluble



A small thermocol box	Soft	Opaque	Floats	Insoluble
Pen	Hard	Opaque	Sinks	Insoluble
Iron nail	Hard	Opaque	Sinks	Insoluble
Glass marbles	Hard	Transparent	Sinks	Insoluble
Hair	Soft	Opaque	Floats	Insoluble
Naphthalene ball	Hard	Opaque	Sinks	Insoluble
A piece of sugar candy (mishri)	Hard	Translucent	Sinks	Soluble

**Q 18.** Arrange the jumbled words to arrive at the appropriate names of materials and also write two uses of each.

- (a) Milaunuim (b) Tcaslpi  
(c) Soekrnee (d) Gavnier

**Ans.** Arrangement of the words and their uses are as follows:

- (a) **Aluminium** It is used in foil, aircrafts, etc.  
(b) **Plastic** It is used in bucket, pencil box, etc.  
(c) **Kerosene** It is used in fuel, solvent, etc.  
(d) **Vinegar** It is used in food ingredient, preservative, etc.

**Q 19.** Match the objects given in Column I with the materials given in Column II.

Column I	Column II
(a) Surgical instruments	(i) Plastic
(b) Newspaper	(ii) Animal product
(c) Electrical switches	(iii) Steel
(d) Wool	(iv) Plant product

**Ans.**

Column I	Column II
(a) Surgical instruments	(iii) Steel
(b) Newspaper	(iv) Plant product
(c) Electrical switches	(i) Plastic
(d) Wool	(ii) Animal product

**Q 20.** Pick five objects from the word box given as figure, which are opaque and would sink in water.

O	S	T	P	L	E
A	T	L	E	E	R
C	O	I	N	A	A
O	N	K	C	F	S
A	E	E	I	W	E

L	L	Y	L	R	R
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**Ans.** These objects in figure are shown as below:

O	S	T	P	L	E
A	T	L	E	E	R
C	O	I	N	A	A
O	N	K	C	F	S
A	E	E	I	W	E
L	L	Y	L	R	R

Name of the objects are as follows:

- |              |             |
|--------------|-------------|
| (i) Coal     | (ii) Stone  |
| (iii) Pencil | (iv) Eraser |
| (v) Coin     |             |

### LONG ANSWER TYPE QUESTIONS

**Q 21.** Chalk, iron nail, wood, aluminium, candle, cotton usually look different from each other. Give some properties by which we can prove that these materials are different.

**Ans.** We can differentiate these materials on the basis of luster hardness, softness, roughness or smoothness.

Material	Properties
Chalk	Rough on the surface
Iron nail	Shine (lustre)
Aluminium	Shine (lustre)
Wood	Hard to compress
Candle	Soft to compress
Cotton	Soft to compress