Chapter 10: This World of Things

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10.1 Let's take a look Around us!

Q1 Can you name the things that Khushi has drawn in her picture of the classroom?

In Khushi's classroom drawing, the labeled things are: window (large glass window on the left wall), bird (sitting on the window frame), wall (the side wall), mat/carpet (colourful striped dari on the floor), floor, ceiling fan (hanging from the ceiling), light bulb (electric bulb near the fan), blackboard (dark board with chalk writing), desk (small wooden desk), and door (open door on the right wall).

Q2 Can you see through the window glass? Why or why not?

Yes, we can see through the window glass because glass is transparent — it allows light to pass through it, so we can clearly see objects on the other side.

10.2 Spot the Metals

Q1 Find as many things or parts of things that are made of metals around you. Which metals do you recognise? Make a list.

Sample answer: Things made of metal around us include door hinges, nails, a steel spoon, an iron pan, copper wires, aluminium foil, and steel door handles. Some metals I recognise are iron, steel, copper, and aluminium.

10.3 See-through Materials

Q1 Does your window have a glass pane?

Sample answer: Yes, my classroom window has a glass pane.

Q2 Can you see through the glass pane of your window?

Yes, I can see through the glass pane because glass is transparent and allows light to pass through it clearly.

Q3 What do you see through the window glass?

Sample answer: Through the window glass, I can see trees, the sky, the school playground, and other buildings outside.

10.4 Seeing Through Things

Q1 Collect objects of different materials and look at a light through them. Order them from those you can see through very clearly to those you cannot see through at all.

Sample answer: See through clearly — glass bottle, clear plastic bag. See through partially — frosted glass, thin cloth, wax paper. Cannot see through at all — ceramic cup, thick wooden board, metal spoon.

Q2 Things that you can see through are called transparent. Name one more material that is transparent.

Clear water is transparent — you can see through it just like glass.

10.5 Let us Colour the World!

Q1 Look at a sheet of white paper through a coloured transparent bag or bottle. Does the colour of the paper appear to change?

Yes, the colour of the white paper appears to change. It takes on the colour of the transparent material you are looking through.

Q2 Does white paper appear different when you look at it through thin blue plastic? Or through thin yellow plastic?

Yes, white paper looks blue when seen through thin blue plastic, and it looks yellow when seen through thin yellow plastic.

Q3 Do the colours of different objects appear to change when seen through coloured transparent materials? How did a blue object look through thin yellow plastic?

Yes, colours appear to change. A blue object seen through thin yellow plastic looks greenish, because the two colours mix — blue and yellow together make green.

Q4 Have you earlier experienced looking through coloured transparent objects? Try to recall such experiences.

Sample answer: Yes, I once looked through my friend's coloured sunglasses and everything appeared tinted. I have also seen the world look orange or red through coloured cellophane paper.

10.6 What is it Made of? (Chain Game)

Q1 In Khushi's table, objects are grouped by the material they are made of. Complete the third column — write names of objects made from Wood, Metal, Glass, and Plastic that you have seen in your classroom or home. Also add a row for a material not in the list (such as clay or rubber).

Sample answer: Wood — pencil, bookshelf, window frame. Metal — steel spoon, iron nail, copper wire. Glass — drinking glass, mirror, glass bottle. Plastic — water bottle, lunch box, scale. Clay (added row) — flower pot, earthen lamp (diya).

Q2 Where do all these materials come from? Complete: Wood — Tree; Metals — ___; Cloth — ___

Wood — Tree. Metals — Ores dug up from inside the Earth. Cloth — Plants like cotton, or animals like sheep (wool).

10.7 Talk to your Grandparents

Q1 In your grandparents' childhood, were everyday things made of the same materials as today?

Sample answer: My grandmother said that in her childhood, most containers were made of brass or clay, not plastic. Bags were made of cloth, not polythene, and toys were made of wood or clay.

Q2 Are there new materials now that your grandparents might not have seen before?

Sample answer: Yes, plastics of many kinds, synthetic fabrics like nylon and polyester, and materials used in mobile phones and computers are new — they were not around in our grandparents' childhood.

Q3 Are there any materials that your grandparents saw in their childhood that are not in use now? Why?

Sample answer: Our grandparents used earthen pots and brass vessels more commonly. These are used less now because plastic and stainless steel are cheaper and easier to make in large numbers.

10.8 Properties of Materials — the Spoon

Q1 What material is your spoon made of? Is it made of metal, wood, or some other material?

Sample answer: My spoon is made of stainless steel, which is a metal. Some spoons at home are also made of plastic.

Q2 Which of these words or phrases best describes a metal spoon — smooth, rough, feels cold to the touch, dull, or shiny?

A metal spoon is smooth, shiny, and feels cold to the touch. It is not rough or dull.

10.9 Does it Bend? — Odd Pairs

Q1 Can we use fabric or rubber to make a table? Why or why not?

No, we cannot make a table out of fabric or rubber. A table needs to be hard and rigid to support weight, but fabric is soft and flexible and rubber bends easily — they would not hold up anything placed on them.

Q2 List five objects paired with a material that is NOT suitable for making them, and explain why (Odd Pairs activity). One example: Umbrella — Paper (paper tears in the rain).

Sample answer: 1. Umbrella — Paper: paper tears when wet. 2. Frying pan — Plastic: plastic melts on a flame. 3. School bag — Glass: glass is heavy and will break easily. 4. Window pane — Cloth: cloth is not rigid and you cannot see through it clearly. 5. Water glass — Wood: wood absorbs water and will rot, and liquid will seep through.

10.10 Does it Flow? — Solids, Liquids, and Gases

Q1 Why can't walls be made of water?

Water flows and does not keep its shape — it is a liquid. A wall needs to be solid and rigid to stand firm, so we use materials like bricks, stones, or wood instead.

10.11 Let's Group Them Another Way! (Solids, Liquids, Gases)

Q1 Sort these objects — ink, a stone, smoke, ice, steam, a spoon, honey, a bottle, a bag, water — into solid, liquid, or gas.

Solid (on the tray): stone, ice, spoon, bottle, bag. Liquid (in the bottle): ink, honey, water. Gas (in the balloon): smoke, steam.

Q2 Some objects are confusing to classify, like sand, a sponge, or clay. Identify at least three such objects.

Sand looks like a solid but flows like a liquid when poured, so it is confusing. A sponge is solid but full of air pockets and can absorb liquid. Clay is solid but can be shaped and flows a little when wet. Foam and powder are also confusing.

10.12 Natural and Artificial

Q1 List out five natural things and five artificial things.

Natural things: tree, rock, river, bird, cloud. Artificial things: chair, plastic bottle, glass, bicycle, book.

Q2 Khushi drew a mango tree with a ripe mango and a bird sitting on it. At what time of year did she likely draw the picture — around January or around June?

Khushi likely drew her picture around June, because mangoes ripen in summer (around May–June in India). In January it is winter and mangoes are not in season.

10.13 Let us Reflect

Q1 A. Write: Things around us are made of different types of materials. Write down the names of three materials we commonly see around us.

Three materials we commonly see around us are wood, metal, and plastic.

Q2 B. Discuss: Suppose you find a shining spoon. You don't know if it is made of metal or if it is made of some other material and painted with shiny paint. How would you find out?

You could try a few tests: tap it gently — a metal spoon makes a ringing sound while a painted plastic one sounds dull. Feel its temperature — metal feels cold to the touch. Try bending it slightly — metal is rigid, while plastic may flex. You could also try touching a magnet to it — iron or steel will attract the magnet.

Q3 C. Draw: Draw three natural and three artificial things.

Sample answer: Natural — draw a tree, a rock, and a river. Artificial — draw a chair, a plastic bottle, and a bicycle.

Q4 D. Do it — Match the pairs: Transparent / Translucent / Opaque with a glass used in spectacles / a lamp shade made of paper / a plate.

Transparent — a glass used in spectacles (you can see clearly through it). Translucent — a lamp shade made of paper (light passes through but you cannot see clearly). Opaque — a plate (you cannot see through it at all).