

Chapter 24: Substances, Objects and Energy

CAN YOU TELL ? [PAGES 127 - 130]

Can you tell ? | Q 1 | Page 127

Write a few lines on the blackboard with a chalk. Now observe the chalk. What changes do you see in the chalk?

SOLUTION

The chalk reduces in size after writing on the blackboard. It becomes flat on the side from which we use it for writing.

Can you tell ? | Q 2 | Page 127

Wipe the board with a duster and then tap the duster against the table. What do you see?

SOLUTION

When we wipe the blackboard with a duster, we see particles of chalk powder settling on the duster. When the duster is tapped against any hard surface, these particles move out of the duster and settle elsewhere. The chalk powder spreads everywhere.

Can you tell ? | Q 3 | Page 128

What are the small particles that can be seen in a beam of light that enters a dark room?

SOLUTION

In the beam of light the small particles of dust are seen.

Can you tell ? | Q 4 | Page 128

If there is a sudden shower, we take shelter under a roof at the roadside. Even though the rain does not fall on us directly, we get wet to some extent. Why ?

SOLUTION

The smaller particles of raindrops fall on our body and hence we get wet with these tinier particles of rainwater.

Can you tell ? | Q 5.1 | Page 129

Asmita went to buy an earthen pot. There she saw many things kept for sale.
How did she identify what she needed?

SOLUTION

Asmita identified the earthen pot by its shape.

Can you tell ? | Q 5.2 | Page 129

Asmita went to buy an earthen pot. There she saw many things kept for sale.
From what substance has the potter made all the things?

SOLUTION

Potter makes all the things from soil or mud.

Can you tell ? | Q 5.3 | Page 129

Asmita went to buy an earthen pot. There she saw many things kept for sale.
What is the difference between a substance and an object?

SOLUTION

Objects are made from substances. Objects have definite shape and size.

Can you tell ? | Q 6.1 | Page 130

We make useful objects from a variety of substances. Another use of substances is that we get energy from some of them.

There is a car. Its tank is full of fuel but it does not move. Why is that?

SOLUTION

The car will not move only by filling a tankful of fuel. The fuel should burn and it should form kinetic energy. Then only can the car move.

Can you tell ? | Q 6.2 | Page 130

We make useful objects from a variety of substances. Another use of substances is that we get energy from some of them.

When we have run a long distance, we feel tired. We have to stop. Why is that?

SOLUTION

When we run, energy in our body is depleted. When we stop for some time, again the energy is formed in the body and then we can resume running.

USE YOUR BRAIN POWER ! [PAGE 128]

Use your brain power ! | Q 1 | Page 128

You do not have rangoli powder. What things can you use as an alternative?

SOLUTION

We can use flour, face powder, chalk powder, or any other particulate powdered matter to replace rangoli. We can use coloured powders like turmeric, kumkum, etc. for filling colours in the rangoli.

FIND OUT [PAGE 131]

Find out | Q 1 | Page 131

What is the original source of energy for the electricity produced at a thermal power station?

SOLUTION

To obtain electricity from heat energy, coal is burnt. The original source of energy is coal. Coal is formed from fossils.

EXERCISE [PAGE 132]

Exercises | Q 1.1 | Page 132

We need to make a sherbet quickly for some guests. But we only have sugar candy in the house.

SOLUTION

We can pound sugar candy into a fine powder. When the powder is fine, it will quickly dissolve in water. Therefore we can make sherbet quickly.

Exercise | Q 1.2 | Page 132

We need to rub salt on a corn cob but only salt crystals are available.

SOLUTION

We can pound salt crystals. Either we can use mortar pestle or we can also crush the crystals of salt in a grinder. Such powdered salt can be easily applied on the corn cob.

Exercise | Q 2.1 | Page 132

Why do tablets of camphor decrease in size day by day?

SOLUTION

Tablets of Camphor are in solid state. Camphor has a property to turn into gaseous state directly from a solid state. Therefore, camphor decreases in size gradually. One can also notice the fragrance of camphor as it turns into vapour.

Exercise | Q 2.2 | Page 132

How do we save fuel by using public transport?

SOLUTION

Each automobile vehicle needs fuel either in the form of petrol, diesel, or CNG. If all the people use a separate vehicle, the amount of fuel consumed would be much more. If many people start using public transport, fuel consumption would be reduced. A single bus or a train can carry many people and thus it can save lots of fuel.

Exercise | Q 3.1 | Page 132

When and why do clothes smell of naphthalene?

SOLUTION

The naphthalene balls are continuously converted into small particles in the gaseous state. These particles settle down on the clothes in which they are kept. Therefore if naphthalene balls are kept for a long time in the clothes, they smell of naphthalene due to these particles.

Exercise | Q 3.2 | Page 132

In which states is water found in nature?

SOLUTION

Solid, liquid and gaseous are the three states in which water is found in nature.

Exercise | Q 3.3 | Page 132

What is the difference between the solid, liquid and gaseous states of a substance?

SOLUTION

The arrangements of the particles in different states of a substance are different. In solid state the particles are closely packed. In liquid state, the particles are slightly away from each other while in gaseous state they are not in contact with each other and are freely placed.

Exercise | Q 3.4 | Page 132

What is meant by energy?

SOLUTION

The capacity to do the work is called energy.