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NCERT Solutions

Step-by-step NCERT Solutions for Class 6 Science
Curiosity, Reprint 2026-27

Chapter 6: Materials Around Us

This chapter explains standard units, scale reading, curved-line measurement, reference point, rest and motion, and linear, circular and oscillatory motion. These solutions answer all NCERT exercise questions in simple Class 6 language.

Also see for this chapter: [Revision Notes](#)

Let us enhance our learning

Q 6.1

Visit your kitchen and observe how your parents have organised various edibles. Can you suggest a better sorting method? Write it in your notebook.

SOLUTION

Concept used. Classification means arranging objects into groups on the basis of a common property or use.

 Answer cue

A good classification rule should make searching easier.

- Step 1.** Observe how food items are kept in the kitchen.
- Step 2.** Make groups such as cereals, pulses, spices, oils, snacks and fresh items.
- Step 3.** Keep similar items together in labelled containers.
- Step 4.** Keep heavy containers on lower shelves and frequently used items within easy reach.
- Step 5.** Use airtight containers for dry food and separate wet or fresh food items.

Final Answer: A better sorting method is to keep cereals, pulses, spices, oils, snacks and fresh items in separate labelled groups. This makes the kitchen neat and helps us find items quickly.

EXPERT'S SOLUTION : *Ananya Rao, M.Sc Science Education, University of Delhi*

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. Classification means arranging objects into groups on the basis of a common property or use.

Step 1. Observe how food items are kept in the kitchen.

Step 2. Make groups such as cereals, pulses, spices, oils, snacks and fresh items.

Step 3. Keep similar items together in labelled containers.

Step 4. Keep heavy containers on lower shelves and frequently used items within easy reach.

Step 5. Use airtight containers for dry food

and separate wet or fresh food items.

Step 6. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: A better sorting method is to keep cereals, pulses, spices, oils, snacks and fresh items in separate labelled groups. This makes the kitchen neat and helps us find items quickly.

Q 6.2

Unscramble the letters in Column I and match with their properties in Column II: T R E M A T, U L S B E L O, T N E R P A S N A R T and E R U S T L.

SOLUTION

Concept used. The words are chapter keywords. Each keyword is matched with its defining property.

 Answer cue

First form the keyword, then match it with the definition from the chapter.

Step 1. T R E M A T unscrambles to matter.

Step 2. Matter is anything that occupies space and has mass.

Step 3. U L S B E L O unscrambles to soluble.

Step 4. Soluble means mixes completely in water.

Step 5. T N E R P A S N A R T unscrambles to transparent.

Step 6. Transparent means objects can be seen clearly through it.

Step 7. E R U S T L unscrambles to lustre.

Step 8. Lustre means a shiny surface.

Final Answer: Matter: occupies space and has mass; Soluble: mixes completely in water; Transparent: objects can be seen clearly through it; Lustre: shiny surface.

EXPERT'S SOLUTION : *Kabir Mehta, M.Sc Physics, Jamia Millia Islamia*

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. The words are chapter keywords. Each keyword is matched with its defining property.

Step 1. T R E M A T unscrambles to matter.

Step 2. Matter is anything that occupies space and has mass.

Step 3. U L S B E L O unscrambles to soluble.

Step 4. Soluble means mixes completely in water.

Step 5. T N E R P A S N A R T unscrambles to transparent.

Step 6. Transparent means objects can be seen clearly through it.

Step 7. E R U S T L unscrambles to lustre.

Step 8. Lustre means a shiny surface.

Step 9. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: Matter: occupies space and has mass; Soluble: mixes completely in water; Transparent: objects can be seen clearly through it; Lustre: shiny surface.

Q 6.3

The containers which are used to store materials in shops and at home are usually transparent. Give your reasons for this.

SOLUTION

Concept used. Transparent materials allow us to see objects clearly through them.

 Answer cue

The useful property here is transparency.

Step 1. If a container is transparent, we can identify the stored item without opening it.

Step 2. We can also see how much material is left inside.

Step 3. For food items, we can notice insects, moisture or spoilage more easily.

Step 4. This saves time in shops and kitchens.

Final Answer: Transparent containers are useful because we can see the material inside, check the quantity and identify the item quickly without opening the container.

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. Transparent materials allow us to see objects clearly through them.

Step 1. If a container is transparent, we can identify the stored item without opening it.

Step 2. We can also see how much material is left inside.

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Step 4. This saves time in shops and kitchens.

Step 5. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: Transparent containers are useful because we can see the material inside, check the quantity and identify the item quickly without opening the container.

Q 6.4 State whether the statements are

True or False. Correct the false statements:

(i) Wood is translucent while glass is opaque.

(ii) Aluminium foil has lustre while an eraser

does not. (iii) Sugar dissolves in water

whereas sawdust does not. (iv) An apple is

a matter because it occupies no space and

has mass.

SOLUTION

Concept used. A statement is checked by comparing it with the definitions of transparent, opaque, lustrous, soluble and matter.

 **Answer cue**

For false statements, rewrite only the incorrect part.

Step 1. Wood does not allow us to see

through it, so wood is opaque. Clear glass is transparent.

Step 2. Aluminium foil has a shiny surface, so it has lustre. An eraser is usually non-lustrous.

Step 3. Sugar dissolves in water. Sawdust remains insoluble and floats or settles.

Step 4. An apple is matter because it occupies space and has mass.

Final Answer: (i) False: wood is opaque and glass is transparent. (ii) True. (iii) True. (iv) False: an apple is matter because it occupies space and has mass.

EXPERT'S SOLUTION : Rohan Iyer, M.Sc
Environmental Science, University of Madras

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. A statement is checked by comparing it with the definitions of transparent, opaque, lustrous, soluble and matter.

Step 1. Wood does not allow us to see

through it, so wood is opaque. Clear glass is transparent.

Step 2. Aluminium foil has a shiny surface, so it has lustre. An eraser is usually non-lustrous.

Step 3. Sugar dissolves in water. Sawdust remains insoluble and floats or settles.

Step 4. An apple is matter because it occupies space and has mass.

Step 5. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: (i) False: wood is opaque and glass is transparent. (ii) True. (iii) True. (iv) False: an apple is matter because it occupies space and has mass.

Q 6.5 We see chairs made up of various materials, such as wood, iron, plastic, bamboo, cement and stones. Which materials fulfil the properties of hardness, lightweight, not feeling very cold in winters, and easy regular cleaning?

SOLUTION

Concept used. The material for an object is chosen by matching its properties with the purpose of the object.

 Answer cue

One material may satisfy more than one property.

Step 1. Hardness is shown well by wood, iron, cement, stone and bamboo because they do not bend easily.

Step 2. Lightweight is shown best by plastic and bamboo, and sometimes by light wood.

Step 3. Materials that do not feel very cold in winters include wood, plastic and bamboo.

Step 4. Materials that can be cleaned regularly include plastic, iron, cement and polished wood.

Step 5. A good chair often balances more than one property, not just one.

Final Answer: Hardness: wood, iron, cement, stone or bamboo. Lightweight: plastic or bamboo. Not very cold in winters: wood, plastic or bamboo. Easy to clean: plastic, iron, cement or polished wood.

EXPERT'S SOLUTION : *Nisha Sharma, M.Sc
Biology, Banaras Hindu University*

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. The material for an object is chosen by matching its properties with the purpose of the object.

Step 1. Hardness is shown well by wood, iron, cement, stone and bamboo because they do not bend easily.

Step 2. Lightweight is shown best by plastic and bamboo, and sometimes by light wood.

Step 3. Materials that do not feel very cold in

winters include wood, plastic and bamboo.

Step 4. Materials that can be cleaned regularly include plastic, iron, cement and polished wood.

Step 5. A good chair often balances more than one property, not just one.

Step 6. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: Hardness: wood, iron, cement, stone or bamboo. Lightweight: plastic or bamboo. Not very cold in winters: wood, plastic or bamboo. Easy to clean: plastic, iron, cement or polished wood.

Q 6.6

You need containers for collection of food waste, broken glass and wastepaper. Which materials will you choose for these containers? What properties of materials do you need to think of?

SOLUTION

Concept used. A container material is chosen by checking strength, hardness, waterproof nature, safety and ease of cleaning.

 Answer cue

Dangerous waste needs a stronger container than dry paper waste.

Step 1. Food waste is wet and may smell, so choose a plastic or metal container with a lid.

Step 2. Broken glass can cut through weak material, so choose a strong hard plastic or metal container.

Step 3. Wastepaper is dry and light, so a cardboard box, paper bag or plastic basket can be used.

Step 4. Think about strength, hardness, waterproof nature, safety, weight and ease of cleaning.

Final Answer: Food waste: plastic or metal bin with lid. Broken glass: thick plastic or metal container. Wastepaper: cardboard box, paper bag or plastic basket. The useful properties are strength, hardness, waterproof nature, safety and ease of cleaning.

EXPERT'S SOLUTION : *Devika Nair, M.Ed*

Elementary Science, University of Kerala

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. A container material is chosen by checking strength, hardness, waterproof nature, safety and ease of cleaning.

Step 1. Food waste is wet and may smell, so choose a plastic or metal container with a lid.

Step 2. Broken glass can cut through weak material, so choose a strong hard plastic or metal container.

Step 3. Wastepaper is dry and light, so a cardboard box, paper bag or plastic basket can be used.

Step 4. Think about strength, hardness, waterproof nature, safety, weight and ease of cleaning.

Step 5. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: Food waste: plastic or metal bin with lid. Broken glass: thick plastic or metal container. Wastepaper: cardboard box, paper bag or plastic basket. The useful properties are strength, hardness, waterproof nature, safety and ease of cleaning.

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Q 6.7

Air is all around us but does not hinder us from seeing each other. A wooden door blocks our view. It is because air is _____ and the wooden door is _____. Choose the most appropriate option.

SOLUTION

Concept used. Transparent materials allow clear vision through them, while opaque materials do not allow vision through them.

Answer cue

Ask whether you can see clearly through the material.

Step 1. We can see through air clearly, so air is transparent.

Step 2. We cannot see through a wooden door, so wood is opaque.

Step 3. The correct pair is transparent and opaque.

Final Answer: Option (i): transparent, opaque.

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. Transparent materials allow clear vision through them, while opaque materials do not allow vision through them.

Step 1. We can see through air clearly, so air is transparent.

Step 2. We cannot see through a wooden door, so wood is opaque.

Step 3. The correct pair is transparent and opaque.

Step 4. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: Option (i): transparent, opaque.

Q 6.8 Two mysterious materials X and Y

are given. X is rigid and does not change shape easily. Y changes shape easily when pressed. In water, only X dissolves completely while Y remains unchanged. What can X and Y be? Identify whether each is hard or soft.

SOLUTION

Concept used. Hardness and solubility are separate properties. A material can be hard and soluble, or soft and insoluble.

 Answer cue

Do not mix up hardness with solubility.
They are different tests.

Step 1. Material X is rigid, so it is hard.

Step 2. Material X dissolves in water, so it can be sugar or salt.

Step 3. Material Y changes shape easily when pressed, so it is soft.

Step 4. Material Y does not dissolve in water, so it can be sponge, foam or rubber.

Step 5. The exact examples may vary if they satisfy the stated properties.

Final Answer: X can be sugar or salt. It is hard and soluble in water. Y can be sponge, foam or rubber. It is soft and insoluble in water.

EXPERT'S SOLUTION : *Meera Kapoor, M.A.
Education, TISS Mumbai*

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. Hardness and solubility are separate properties. A material can be hard and soluble, or soft and insoluble.

Step 1. Material X is rigid, so it is hard.

Step 2. Material X dissolves in water, so it can be sugar or salt.

Step 3. Material Y changes shape easily when pressed, so it is soft.

Step 4. Material Y does not dissolve in water, so it can be sponge, foam or rubber.

Step 5. The exact examples may vary if they satisfy the stated properties.

Step 6. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: X can be sugar or salt. It is hard and soluble in water. Y can be sponge, foam or rubber. It is soft and insoluble in water.

Q 6.9

(i) Who am I? Identify me on the basis of properties: I have lustre; I can be easily compressed; I am hard and soluble in water; you cannot see clearly through me; I have mass and volume but you cannot see me. (ii) Make your own Who am I.

SOLUTION

Concept used. Each clue points to one property of matter, such as lustre, softness, solubility, translucency, mass and volume.

Answer cue

A good Who am I clue uses properties, not the object's name.

Step 1. A lustrous material can be a metal such as copper, aluminium or steel.

Step 2. A material that can be easily compressed can be sponge or foam.

Step 3. A hard soluble material can be sugar or salt.

Step 4. A material through which we cannot see clearly can be frosted glass or butter paper.

Step 5. Air has mass and volume but cannot be seen clearly, so air is matter.

Step 6. For a self-made clue, choose one material and list two or three properties.

Final Answer: (i) (a) metal such as copper or steel, (b) sponge or foam, (c) sugar or salt, (d) frosted glass or butter paper, (e) air. (ii) Example: I am transparent, I flow, I dissolve salt and sugar, and I have mass and volume. I am water.

EXPERT'S SOLUTION : *Ishaan Gupta, M.Sc Science Communication, University of Hyderabad*

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. Each clue points to one property of matter, such as lustre, softness, solubility, translucency, mass and volume.

Step 1. A lustrous material can be a metal such as copper, aluminium or steel.

Step 2. A material that can be easily compressed can be sponge or foam.

Step 3. A hard soluble material can be sugar

or salt.

Step 4. A material through which we cannot see clearly can be frosted glass or butter paper.

Step 5. Air has mass and volume but cannot be seen clearly, so air is matter.

Step 6. For a self-made clue, choose one material and list two or three properties.

Step 7. Finally, name the property and the example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: (i) (a) metal such as copper or steel, (b) sponge or foam, (c) sugar or salt, (d) frosted glass or butter paper, (e) air. (ii) Example: I am transparent, I flow, I dissolve salt and sugar, and I have mass and volume. I am water.

Q 6.10

You are provided with vinegar, honey, mustard oil, water, glucose and wheat flour. Make two pairs where one material is soluble in the other, and two pairs where one material remains insoluble in the other.

SOLUTION

Concept used. A soluble material mixes completely with another material. An insoluble material does not mix completely and may remain separate.

 Answer cue

After stirring and waiting, check whether the material disappears completely.

- Step 1.** Glucose dissolves in water, so glucose and water make a soluble pair.
- Step 2.** Vinegar mixes with water, so vinegar and water make another soluble pair.
- Step 3.** Mustard oil does not dissolve in water and forms a separate layer.
- Step 4.** Wheat flour does not dissolve completely in water; it forms a suspension or paste.

Final Answer: Soluble pairs: glucose in water, vinegar in water. Insoluble pairs: mustard oil in water, wheat flour in water.

EXPERT'S SOLUTION : *Fatima Khan, M.Ed*
Curriculum Studies, Aligarh Muslim University

Teaching angle. Start from the material property named in the question, then connect it with a familiar object. This keeps the answer simple and accurate for Class 6.

Concept check. A soluble material mixes completely with another material. An insoluble material does not mix completely and may remain separate.

Step 1. Glucose dissolves in water, so glucose and water make a soluble pair.

Step 2. Vinegar mixes with water, so vinegar and water make another soluble pair.

Step 3. Mustard oil does not dissolve in water and forms a separate layer.

Step 4. Wheat flour does not dissolve completely in water; it forms a suspension or paste.

Step 5. Finally, name the property and the

example clearly in the answer.

This method works because Chapter 6 is about choosing and grouping materials by their properties. Lustre, hardness, transparency, solubility, mass and volume help us explain why a material is useful for a particular purpose.

Final Answer: Soluble pairs: glucose in water, vinegar in water. Insoluble pairs: mustard oil in water, wheat flour in water.

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Key Takeaways

- The SI unit of length is metre, and its symbol is m.

- Always write measurement as a number plus a unit.
- A reference point is needed to describe position and motion.
- Linear, circular and oscillatory motions are identified by path shape.