

ALPHALEARN STUDYLAB

STD 7 SCIENCE

Curiosity — Publication-Grade Practice Worksheets

Concept Builder • Understanding • Application • Revision Test

Based on CBSE / NCERT Curriculum | Complete Answer Keys Included

STD 7 — SCIENCE

Publication-Grade Practice Worksheets | AlphaLearn Studylab

Table of Contents

Ch. 1	The Ever-Evolving World of Science	3
Ch. 2	Exploring Substances: Acidic, Basic, and Neutral	26
Ch. 3	Electricity — Circuits and their Components	49
Ch. 4	The World of Metals and Non-metals	76
Ch. 5	Changes Around Us: Physical and Chemical	104
Ch. 6	Adolescence: A Stage of Growth and Change	130
Ch. 7	Heat Transfer in Nature	154
Ch. 8	Measurement of Time and Motion	174
Ch. 9	Life Processes in Animals	194
Ch. 11	Light: Shadows and Reflections	213
Ch. 12	Earth, Moon, and the Sun	239

CHAPTER 1

The Ever-Evolving World of Science

Concept Builder • Understanding • Application • Revision Test

AlphaLearn Studylab

CURIOSITY | Textbook of Science | Grade 7
Chapter 1: The Ever-Evolving World of Science
WORKSHEET 1 – CONCEPT BUILDER

Total Marks: 40 Time: 45 Minutes Name: _____ Class: _____
Roll No.: _____

SECTION A: Multiple Choice Questions (MCQs)

Choose the correct answer from the options given below.

Q1. Which textbook from Grade 6 is mentioned as the starting point of this science journey? [1 mark]

- (a) Wonder
- (b) Curiosity
- (c) Discovery
- (d) Explore

Q2. According to the chapter, science is best described as: [1 mark]

- (a) A collection of facts
- (b) Only about laboratory experiments
- (c) A process and a way of thinking
- (d) Reading and memorising information

Q3. The page numbers in the Curiosity Grade 7 textbook follow the flight of which two things? [1 mark]

- (a) A bird and a kite
- (b) A butterfly and a paper plane
- (c) A dragonfly and a rocket
- (d) A bee and a balloon

Q4. In Grade 7, which of the following deeper questions does the chapter encourage students to ask? [1 mark]

- (a) What is the capital of India?
- (b) How do things work and why do events happen the way they do?
- (c) What is the biggest animal on Earth?
- (d) Who discovered electricity?

Q5. Which of the following topics will students explore in the chapter on materials? [1 mark]

- (a) Why some fruits are sour
- (b) How rockets are launched
- (c) Why plants have roots
- (d) How computers work

Q6. What do electric batteries, lamps, and wires help students classify in this book? [1 mark]

- (a) Living and non-living things
- (b) Materials as metals and non-metals
- (c) Solids, liquids, and gases
- (d) Plants and animals

Q7. Which of the following is an example of a change that CANNOT be reversed? [1 mark]

- (a) Ice melting into water
- (b) Water freezing into ice
- (c) A torch battery running out
- (d) Dissolving sugar in water

Q8. Early humans used which natural phenomenon to tell the time? [1 mark]

- (a) The direction of wind
- (b) The colour of the sky
- (c) The shadows of objects in the Sun
- (d) The sound of birds

Q9. What causes the phenomenon of eclipses as mentioned in the chapter? [1 mark]

- (a) Storms on the Sun
- (b) The Earth and Moon casting shadows
- (c) Clouds blocking sunlight
- (d) The Moon changing shape

Q10. Activity 1.1 in the chapter is called: [1 mark]

- (a) Guess the Question
- (b) Ask and Answer
- (c) Question the Answer
- (d) Science Quiz

SECTION B: Fill in the Blanks

Fill in the blanks with the correct word or phrase.

Q11. The Curiosity Grade 7 book is an invitation to question, to perform _____, and to explore. [1 mark]

Q12. Science covers everything — small and large, _____ and far. [1 mark]

Q13. Learning takes flight when _____ leads the way. [1 mark]

Q14. In Grade 7, students will study topics from physics, chemistry, biology, and _____ sciences. [1 mark]

Q15. A torch battery runs out eventually and _____ be used again. [1 mark]

Q16. Water evaporates from the seas because of the heat from the _____. [1 mark]

Q17. Around the middle-school years, our _____ change rapidly. [1 mark]

Q18. Blood has to _____ nutrients from food all over the body. [1 mark]

Q19. Day and night depend on receiving _____ from the Sun. [1 mark]

Q20. The chapter says, 'To be a wise person, you must be a _____ person.' [1 mark]

SECTION C: True or False

Write TRUE or FALSE for each statement.

- Q21.** The Curiosity textbook is just a book of facts. [1 mark]
- Q22.** Science is only about conducting experiments in a laboratory. [1 mark]
- Q23.** The dream of flying started with simple observations and experiments. [1 mark]
- Q24.** Scientific ideas in different areas of science are all interconnected. [1 mark]
- Q25.** All changes that happen around us can be reversed. [1 mark]
- Q26.** Plants do not need food to grow. [1 mark]
- Q27.** Early humans used electric clocks to tell the time. [1 mark]
- Q28.** Light helps us understand the universe we live in. [1 mark]
- Q29.** The Earth rotates around the Moon. [1 mark]
- Q30.** Great scientists ask amazing questions, not just answer them. [1 mark]

SECTION D: Match the Following

Match Column A with the correct item in Column B.

Column A	Column B
(1) Metals and non-metals	(a) Asking a question for a given answer
(2) Eclipses	(b) Earth and Moon casting shadows
(3) Photosynthesis	(c) Evaporation and rainfall
(4) Water cycle	(d) How plants make food
(5) Activity 1.1	(e) Classification of materials

Answers: 1—, 2—, 3—, 4—, 5—

SECTION E: One-Word Answers

Answer each question in one word.

- Q36.** Name the process by which water turns into vapour due to the Sun's heat. [1 mark]

- Q37.** What is the name of the Grade 7 NCERT science textbook? [1 mark]

Q38. What do we call changes that cannot be undone? *[1 mark]*

Q39. Name the phenomena caused when the Earth and Moon cast shadows. *[1 mark]*

Q40. What type of thinking does science encourage — curiosity or avoidance? *[1 mark]*

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CURIOSITY | Textbook of Science | Grade 7
Chapter 1: The Ever-Evolving World of Science
WORKSHEET 2 – UNDERSTANDING

Total Marks: 40 Time: 50 Minutes Name: _____ Class: _____
Roll No.: _____

SECTION A: Very Short Answer Questions (1 mark each)

Answer each question in one sentence.

Q1. What does the chapter say science is, apart from a collection of facts? [1 mark]

Q2. Mention any two fields of science covered in the Grade 7 Curiosity textbook. [1 mark]

Q3. What inspired real scientific explorations of flight, according to the chapter? [1 mark]

Q4. Name any two life processes essential for animal survival mentioned in the chapter. [1 mark]

Q5. What is the term for changes that can be undone? [1 mark]

Q6. Where does water go when it evaporates from the seas? [1 mark]

Q7. How did early humans tell the time before electric clocks were invented? [1 mark]

Q8. What does 'whys person' mean in the context of this chapter? [1 mark]

Q9. Which body movements are responsible for day and night on Earth? [1 mark]

Q10. State one way in which the Grade 7 book is different from an ordinary textbook. [1 mark]

SECTION B: Short Answer Questions (2 marks each)

Answer each question in 2–3 sentences.

Q11. Explain why the chapter says science is a 'process' and not just a list of facts. [2 marks]

Q12. Describe what students will learn from the experiment with electric batteries, lamps, and wires. [2 marks]

Q13. How does water move through the water cycle as described in the chapter? [2 marks]

Q14. Why does the chapter say that science is not just about discovery but also about responsibility? [2 marks]

Q15. How are the different chapters in this book interconnected, according to the introduction? [2 marks]

Q16. What does Activity 1.1 'Question the Answer' ask students to do? Give one example from the activity. [2 marks]

Q17. In what way is a paper plane connected to the science of flight, as mentioned in the chapter? [2 marks]

Q18. Why is it important for Grade 7 students to step out of the classroom to learn science? [2 marks]

Q19. What questions about plants does the chapter encourage students to think about? [2 marks]

Q20. How does understanding the Earth's rotation help us explain day and night? [2 marks]

SECTION C: Assertion–Reason Questions (2 marks each)

Choose the correct option:

- (a) Both A and R are true, and R is the correct explanation of A.
- (b) Both A and R are true, but R is NOT the correct explanation of A.
- (c) A is true, but R is false.
- (d) A is false, but R is true.

Q21. [2 marks]

Assertion (A): The chapters in the Curiosity Grade 7 book are all interconnected.

Reason (R): Scientific ideas in one area often inspire discoveries in another area.

Q22. [2 marks]

Assertion (A): Plants do not need food to survive.

Reason (R): Only animals need nutrients for growth and survival.

Q23. [2 marks]

Assertion (A): Early humans used shadows to tell the time.

Reason (R): The position of shadows changes as the Sun moves across the sky.

Q24. [2 marks]

Assertion (A): Science experiments always confirm exactly what we expect to happen.

Reason (R): Experiments sometimes lead to additional unexpected questions.

Q25. [2 marks]

Assertion (A): A torch battery that has run out can be recharged and reused indefinitely.

Reason (R): Some changes in materials are irreversible.

SECTION D: Case-Based MCQs (1 mark each)

Read the passage and answer the questions that follow.

Read the following: Priya noticed that when she washed her school uniform that had a haldi (turmeric) stain, the yellow stain changed colour and sometimes disappeared completely. She also noticed that lemons are sour and some fruits change colour as they ripen. She shared her observations with her science teacher, who told her that these are all related to the chemical properties of materials around us.

Q26. Which field of science would best help Priya understand why the haldi stain changes colour? [1 mark]

- (a) Biology
- (b) Chemistry
- (c) Astronomy
- (d) Earth Science

Q27. Priya's observation that lemons are sour relates to which property of materials? [1 mark]

- (a) Electrical property
- (b) Magnetic property
- (c) Chemical property (acidic nature)
- (d) Thermal property

Q28. Fruits changing colour as they ripen is an example of what kind of change? [1 mark]

- (a) A reversible physical change
- (b) An irreversible chemical change
- (c) A change in size only
- (d) A change caused by electricity

Q29. Priya's approach of noticing everyday things and asking questions is an example of: [1 mark]

- (a) Reading textbooks carefully
- (b) Scientific thinking and curiosity
- (c) Memorising facts
- (d) Following instructions

Q30. According to the chapter, what kind of science explorer is Priya being by making these observations? [1 mark]

- (a) A passive learner
- (b) A young science explorer making small discoveries
- (c) A professional scientist
- (d) An engineer designing new materials

CURIOSITY | Textbook of Science | Grade 7
Chapter 1: The Ever-Evolving World of Science
WORKSHEET 3 – APPLICATION

Total Marks: 40 Time: 55 Minutes Name: _____ Class: _____
Roll No.: _____

SECTION A: Competency-Based Questions (2 marks each)

Answer the following questions, applying what you have learned.

Q1. Your friend says, 'Science is only about memorising formulas and definitions.' How would you use ideas from Chapter 1 to disagree with this statement? [2 marks]

Q2. You observe that when milk is left in the Sun for a long time, it turns sour and curdles. Using the chapter's ideas, classify this change and explain whether it can be reversed. [2 marks]

Q3. Imagine you are planning a science experiment at home. Based on the chapter's approach, write two questions you would ask BEFORE starting the experiment. [2 marks]

Q4. Explain how electricity experiments (batteries and wires) help students understand the difference between metals and non-metals. [2 marks]

Q5. How does the melting of an ice cube in a glass connect to the much larger event of a glacier melting? What does this tell us about heat flow? [2 marks]

Q6. A classmate argues that plants do not breathe because they have no lungs. Using information from the chapter, explain why this argument may be incorrect. [2 marks]

Q7. The chapter mentions that human activities are connected to changes in the natural world. Give one example from your daily life that supports this idea. [2 marks]

Q8. Explain how understanding the Moon's orbit around the Earth helps us understand the phenomenon of eclipses. [2 marks]

Q9. Why is it important that science experiments lead to more questions, rather than just confirming what we already expect? Explain with an example. [2 marks]

Q10. Describe how the water cycle connects the ocean, the atmosphere, and the ground. Use the process of evaporation and rainfall in your answer. [2 marks]

SECTION B: Higher Order Thinking Skills (HOTS) (3 marks each)

Think deeply and answer the following.

Q11. The chapter says science is 'an ongoing process of discovery.' Do you agree? Explain using any two examples of how one discovery can lead to more questions. [3 marks]

Q12. If the Earth did not rotate on its axis, what two major consequences for life on our planet can you predict? Use scientific reasoning. [3 marks]

Q13. The chapter compares learning to a butterfly's flight — 'learning takes flight when curiosity leads the way.' Explain what this metaphor means and how it applies to your own learning experience. [3 marks]

Q14. Some materials like wax can change from solid to liquid and back to solid again. Other materials like burning paper cannot go back to their original form. Design a simple classification system for changes in materials based on reversibility and give two examples of each. [3 marks]

Q15. The chapter says science is connected to 'responsibility' and can help create a more sustainable world. Think of one environmental challenge and explain how scientific thinking could help solve it. [3 marks]

SECTION C: Diagram / Labelling Questions (2 marks each)

Study the descriptions below and draw or label as instructed.

Q16. Draw a simple diagram of the Water Cycle and label at least FOUR stages: Evaporation, Condensation, Precipitation (Rainfall), and Collection (in rivers/ground). Add arrows to show the direction of movement. [2 marks]

Q17. Draw a simple circuit diagram showing a battery, two wires, and a lamp. Label each part. Indicate with an arrow the direction in which electric current flows. [2 marks]

Q18. Draw and label a diagram showing the positions of the Sun, Earth, and Moon during a Solar Eclipse. Show which body is in the middle. [2 marks]

Q19. Make a simple flowchart showing the stages of the scientific process described in the chapter: Observation → Question → Experiment → Result → New Question. Add a brief description (one word or phrase) for each stage. [2 marks]

Q20. Draw a simple timeline showing how time-measuring methods evolved: Shadow/Sundial → Pendulum Clock → Electric Clock → Digital Watch. Label each with one key feature. [2 marks]

SECTION D: Real-Life Application Questions (2 marks each)

Connect what you have learned to everyday situations.

Q21. When your mother adds lemon juice to tea, the colour changes. Explain which property of materials this demonstrates and how it relates to what you will learn in this chapter. [2 marks]

Q22. You notice that a steel spoon left in hot soup becomes hot at the handle. Explain what science concept this demonstrates and why understanding heat flow is important. [2 marks]

Q23. On a sunny day, you notice your shadow is short at noon but long in the evening. Explain the scientific reason for this change, connecting it to what early humans used to tell time. *[2 marks]*

Q24. During a power outage at night, you cannot see anything in the room. Explain why light is essential for human life and link it to one other way light is important beyond helping us see. *[2 marks]*

Q25. You have been asked to record your own body changes over the past year (height, voice, etc.). Explain how this connects to the life processes discussed in the chapter. *[2 marks]*

CURIOSITY | Textbook of Science | Grade 7
Chapter 1: The Ever-Evolving World of Science
WORKSHEET 4 – REVISION TEST

Total Marks: 50 Time: 60 Minutes Name: _____ Class: _____
Roll No.: _____

SECTION A: Multiple Choice Questions (1 mark each)

Choose the best answer.

- Q1.** Which of the following best describes the approach of the Curiosity Grade 7 textbook? [1 mark]
(a) Memorise and reproduce facts
(b) Question, experiment, and explore
(c) Read and recite chapters
(d) Watch videos and take notes
- Q2.** Which phenomenon is caused by the Earth and Moon casting shadows on each other? [1 mark]
(a) Rainfall
(b) Seasons
(c) Eclipses
(d) Tides
- Q3.** Which of the following is a REVERSIBLE change? [1 mark]
(a) Fruit ripening
(b) Wood burning
(c) Ice melting into water
(d) Battery running out
- Q4.** What does the chapter mean when it says science involves 'responsibility'? [1 mark]
(a) Students must complete homework on time
(b) Science can help address environmental challenges
(c) Scientists must earn a degree
(d) Only adults can do science
- Q5.** The water cycle is driven primarily by heat from the: [1 mark]
(a) Moon
(b) Earth's core
(c) Sun
(d) Wind

SECTION B: Short Answer Questions (2 marks each)

Answer each question in 2–3 sentences.

- Q6.** What is the difference between a reversible and an irreversible change? Give one example of each from your daily life. [2 marks]

Q7. How does the chapter connect the study of light and shadows to understanding the universe?
[2 marks]

Q8. Why does the chapter encourage students to ask questions even after getting experimental results? [2 marks]

Q9. How do life processes like eating, breathing, and blood circulation help animals survive? Mention two life processes. [2 marks]

Q10. Explain how a simple observation about a paper plane can lead to a real scientific exploration.
[2 marks]

SECTION C: Long Answer Questions (4 marks each)

Answer each question in detail, using 4–6 sentences.

Q11. Describe the water cycle as explained in the chapter. Include the role of the Sun, evaporation, condensation, and rainfall in your answer. How does this connect to daily life? [4 marks]

Q12. The chapter says that science topics — though presented as separate chapters — are all interconnected. Explain this idea using any three examples from the chapter's preview of topics (e.g., materials, heat, life processes, light, or Earth and space). [4 marks]

SECTION D: Case Study (1 mark each)

Read the passage and answer the questions that follow.

Arjun is a Grade 7 student who loves to ask questions. One day, he left a glass of water near a sunny window and noticed that after a few hours, some water had disappeared from the glass. He also noticed that the window glass had tiny water droplets on it. He wondered: Where did the water go? Why did droplets form on the glass? He decided to design a simple experiment to find out.

Q13. What process caused the water level in the glass to decrease? [1 mark]

- (a) Freezing
- (b) Evaporation
- (c) Condensation
- (d) Precipitation

Q14. The water droplets on the glass are formed by the process of: [1 mark]

- (a) Evaporation
- (b) Boiling
- (c) Condensation
- (d) Melting

Q15. Arjun's approach of observing, questioning, and planning an experiment shows he is thinking like a: [1 mark]

- (a) Memoriser
- (b) Scientist
- (c) Technician
- (d) Reader

Q16. Which two stages of the water cycle are shown in Arjun's observation? [1 mark]

SECTION E: Diagram Question (4 marks)

Draw and label the diagram as instructed below.

Q17. Draw a neat and labelled diagram of the Solar System showing the positions of the Sun, Earth, and Moon. Add arrows to show: (a) the Earth's rotation on its own axis, (b) the Moon's revolution around the Earth, and (c) the Earth's revolution around the Sun. Label at least 5 features. [4 marks]

SECTION F: Value-Based Question (4 marks)

Read and respond thoughtfully.

The chapter states that science is not only about discovery but also about responsibility. As young science explorers, you are expected to understand how human activities affect the natural world and to see the role science can play in creating a more sustainable world.

Q18. Think about one environmental problem you see in your neighbourhood (e.g., water wastage, pollution, plastic waste). (a) Describe the problem. (b) Explain how scientific thinking could help you understand the cause. (c) Suggest one science-based solution. (d) Explain how this connects to the idea of 'responsibility' mentioned in Chapter 1. [4 marks]

ANSWER KEY — Chapter 1: The Ever-Evolving World of Science

Worksheet 1 — Concept Builder — Detailed Answer Key

Section A – MCQ

1-b) Curiosity 2-c) A process and a way of thinking 3-b) A butterfly and a paper plane 4-b) How do things work and why do events happen the way they do? 5-a) Why some fruits are sour

6-b) Materials as metals and non-metals 7-c) A torch battery running out 8-c) The shadows of objects in the Sun 9-b) The Earth and Moon casting shadows 10-b) Ask and Answer

Section B – Fill in the Blanks

11. experiments 12. near 13. curiosity 14. Earth/environmental 15. cannot 16. Sun 17. bodies 18. carry 19. light 20. whys

Section C – True or False

21. False 22. False 23. True 24. True 25. False 26. False 27. False 28. True 29. False (Moon rotates around Earth, not the reverse) 30. True

Section D – Match the Following

1-e (Metals and non-metals → Classification of materials) 2-b (Eclipses → Earth and Moon casting shadows) 3-d (Photosynthesis → How plants make food) 4-c (Water cycle → Evaporation and rainfall) 5-a (Activity 1.1 → Asking a question for a given answer)

Section E – One-Word Answers

36. Evaporation 37. Curiosity 38. Irreversible (changes) 39. Eclipses 40. Curiosity

Worksheet 2 — Understanding — Detailed Answer Key

Section A – Very Short Answer (sample model answers)

1. It says science is a process and a way of thinking, not just a list of facts.
2. Any two: physics, chemistry, biology, Earth/environmental sciences.
3. Simple observations and experiments, like watching a paper plane fly, inspired real scientific exploration of flight.
4. Any two: eating, breathing, blood circulation (also growth, excretion).
5. Reversible changes.
6. It rises into the atmosphere as water vapour, later forming clouds through condensation.
7. They used the position and length of shadows cast by the Sun.
8. It means being a curious person who keeps asking 'why' about the world.
9. The Earth's rotation on its own axis.
10. Sample: it encourages questioning, exploring and experimenting rather than just reading and memorising facts.

Section B – Short Answer (sample model answers)

11. Because science involves observing, questioning, experimenting and constantly refining understanding — it's an active process of discovery, not a fixed set of facts to memorise.

12. Students will learn to build simple circuits and use them to test which materials conduct electricity, helping classify materials as metals or non-metals.
13. Water evaporates from seas due to the Sun's heat, rises and condenses into clouds, then falls as rain, which collects in rivers and seas again, continuing the cycle.
14. Because scientific knowledge can be used to address real-world problems like pollution or resource use, making science a tool for building a more sustainable world.
15. Ideas from one area (like materials) often relate to or explain phenomena in another (like heat or life processes), showing science as a connected web of knowledge.
16. It asks students to think of a question that matches a given answer; example: if the answer is 'the Sun', a possible question could be 'What star is at the centre of our solar system?'
17. Observing how a paper plane flies and experimenting with its design connects directly to the science of aerodynamics and flight.
18. Because real-world observations outside the classroom (like weather, plants, shadows) help students connect scientific concepts to everyday life more meaningfully.
19. Questions like why plants need water, how they make food, and why they grow towards light.
20. Earth's rotation on its axis causes different parts of Earth to face the Sun at different times, creating day (facing the Sun) and night (facing away from it).

Section C – Assertion–Reason

- 21-(a) 22-(d) [A is false — plants do need nutrients/food to survive; R is true — only animals need nutrients from external food sources in the way described] 23-(a) 24-(d) [A is false — experiments don't always confirm expectations; R is true] 25-(d) [A is false — a torch battery running out is generally not reusable in this context; R is true]

Section D – Case-Based MCQs

- 26-b) Chemistry 27-c) Chemical property (acidic nature) 28-b) An irreversible chemical change 29-b) Scientific thinking and curiosity 30-b) A young science explorer making small discoveries

Worksheet 3 — Application — Detailed Answer Key

Section A – Competency-Based (sample model answers)

1. Science is about questioning, observing, and experimenting to understand the world — not just memorising formulas; real scientific discoveries come from curiosity and testing ideas, not rote learning alone.
2. This is an irreversible change, since curdled milk cannot be turned back into fresh milk — the chemical composition has changed permanently.
3. Sample: 'What do I expect to happen and why?' and 'What variables should I keep the same to make the test fair?'
4. By building a simple circuit with a battery, wires and different test materials, students can observe which materials allow current to flow (metals, generally good conductors) and which do not (non-metals, generally poor conductors).
5. Both involve heat causing a solid (ice) to change to liquid (water); this shows that heat flow follows the same basic principle regardless of scale — from a small ice cube to an entire glacier.
6. Plants don't have lungs, but they still take in and release gases (like oxygen and carbon dioxide) through their leaves as part of respiration, showing they do 'breathe' in a biological sense, just differently from animals.
7. Example: using more electricity/fuel in daily life contributes to environmental changes like increased heat or pollution, showing daily habits connect to larger natural changes.

8. When the Moon passes between the Earth and Sun (or Earth's shadow falls on the Moon), their aligned positions and shadow-casting explain solar and lunar eclipses.
9. Because new questions drive deeper understanding and further discovery — e.g., discovering electricity's effects at a small scale gradually led to bigger questions about electricity's broader everyday uses.
10. The Sun heats ocean/sea water causing evaporation into water vapour; this rises and condenses into clouds over land and sea; eventually it falls as rain, which flows into rivers and back to the sea, continuing the cycle endlessly.

Section B – HOTS (sample model answers)

11. Agree — for example, discovering that plants make food through photosynthesis led scientists to ask how light energy is converted, and studying eclipses led to deeper questions about the Moon's orbit and gravity, showing each discovery opens new questions.
12. Consequences: there would be no day-night cycle (one side would remain fixed towards the Sun, the other in permanent darkness), and drastic temperature differences would make life very difficult on both sides.
13. It means true learning happens best when driven by genuine interest and questions, not forced memorisation; personally, this could relate to any subject a student naturally enjoys exploring further out of interest.
14. Reversible changes: melting wax, freezing water (can return to original form). Irreversible changes: burning paper, curdled milk (cannot return to original form) — classification based on whether the original substance can be recovered.
15. Example: plastic waste pollution — scientific thinking could help design better biodegradable materials or improve recycling processes to reduce environmental harm.

Section C – Diagram / Labelling

16. Diagram: Sun heating ocean (Evaporation) → water vapour rising and forming clouds (Condensation) → clouds releasing water (Precipitation/Rainfall) → water flowing into rivers/ground (Collection) — with arrows showing the cyclical flow.
17. Diagram: battery connected via two wires to a lamp, forming a closed loop; arrow showing current flowing from the battery's positive terminal through the wire, lamp, and back to the negative terminal.
18. Diagram: Sun — Moon — Earth in a line, with the Moon in the middle during a Solar Eclipse, casting a shadow on Earth.
19. Flowchart: Observation → Question → Experiment → Result → New Question, each labelled with a brief description of what happens at that stage.
20. Timeline: Shadow/Sundial (uses Sun's position) → Pendulum Clock (uses regular swinging motion) → Electric Clock (uses electric current) → Digital Watch (uses electronic display).

Section D – Real-Life Application

21. This demonstrates a chemical property change (acid-base reaction affecting colour), related to understanding chemical properties of materials covered in the chapter.
22. This demonstrates heat conduction through metal; understanding heat flow is important for safety (avoiding burns) and for designing tools/appliances that manage heat effectively.
23. The Sun's position in the sky changes throughout the day, changing the angle and length of shadows — shorter at noon (Sun overhead) and longer in the evening (Sun low on the horizon); early humans used this shadow-length change to estimate time of day.
24. Light is essential for vision, allowing us to see and navigate our surroundings; beyond helping us see, light is also crucial for plant photosynthesis and thus the entire food chain.

25. It connects to human life processes like growth (an ongoing biological process) and highlights how our bodies continuously change over time due to processes similar to those studied in the chapter.

Worksheet 4 — Revision Test — Detailed Answer Key

Section A – MCQ

1-b 2-c 3-c 4-b 5-c

Section B – Short Answer (sample model answers)

6. A reversible change can be undone (e.g., ice melting back into water can be refrozen); an irreversible change cannot be undone (e.g., burning paper cannot be turned back into paper).

7. Light and shadows help explain phenomena like eclipses, and studying how light travels helps us understand distant objects in space, connecting directly to understanding the wider universe.

8. Because results often reveal new patterns or raise new uncertainties, encouraging deeper investigation rather than stopping at a single answer.

9. Eating provides nutrients for energy; breathing supplies oxygen needed for releasing that energy in the body — both are essential life processes for animal survival.

10. Observing a paper plane's flight can lead to questions about aerodynamics, air resistance, and lift, which are the same principles studied in real aeroplane and rocket design.

Section C – Long Answer (sample model answers)

11. The Sun heats ocean and sea water, causing evaporation into water vapour, which rises and cools to form clouds (condensation); when clouds become saturated, water falls back to Earth as rainfall; this collects in rivers and seas, continuing the cycle — this directly supplies fresh water for drinking, agriculture and ecosystems in daily life.

12. Example connections: materials (understanding matter) links to heat (how materials respond to temperature change); life processes (like plant food-making) link to light (since photosynthesis needs sunlight); Earth and space (day-night, eclipses) link to light and shadows — showing chapters build on shared underlying scientific principles.

Section D – Case Study

13-b) Evaporation 14-c) Condensation 15-b) Scientist

16. Evaporation (water disappearing from the glass) and Condensation (droplets forming on the glass).

Section E – Diagram Question

17. Diagram: Sun at centre, Earth orbiting it with an arrow showing Earth's revolution around the Sun, a small arrow on Earth itself showing rotation on its axis, and the Moon orbiting Earth with an arrow showing its revolution — at least 5 labelled features: Sun, Earth, Moon, rotation arrow, revolution arrows.

Section F – Value-Based Question

18. Sample response: (a) Problem: water wastage from leaking taps in the neighbourhood. (b) Scientific thinking helps identify the cause (worn washers, pipe damage) through observation and simple testing. (c) Solution: fixing leaks promptly and using water-efficient fixtures. (d) This connects to responsibility because understanding and acting on the scientific cause of a problem helps protect a shared, limited resource for the whole community, reflecting the idea that science should be used thoughtfully to support a sustainable world.