

ALPHALEARN STUDYLAB

STD 7 SCIENCE

COMPLETE STUDY GUIDE

Curiosity — Concept Notes, Tips & Fully Solved Questions

Every Question Answered • Chapter-wise Concept Notes

Based on CBSE / NCERT Curriculum

STD 7 SCIENCE — COMPLETE GUIDE

AlphaLearn Studylab

Table of Contents

Ch. 1	The Ever-Evolving World of Science	3
Ch. 2	Exploring Substances: Acidic, Basic, and Neutral	20
Ch. 3	Electricity — Circuits and their Components	35
Ch. 4	The World of Metals and Non-metals	52
Ch. 5	Changes Around Us: Physical and Chemical	68
Ch. 6	Adolescence: A Stage of Growth and Change	84
Ch. 7	Heat Transfer in Nature	100
Ch. 8	Measurement of Time and Motion	117
Ch. 9	Life Processes in Animals	134
Ch. 11	Light: Shadows and Reflections	150
Ch. 12	Earth, Moon, and the Sun	166

CHAPTER 1

The Ever-Evolving World of Science

Concept Notes • Study Tips • Fully Solved Q&A

AlphaLearn Studylab

Chapter 1: The Ever-Evolving World of Science

Class 7 Science (Curiosity) — Complete Study Guide

CONCEPT NOTES

- Science is not just a collection of facts — it is a process and a way of thinking based on observing, questioning, and testing ideas.
- The Grade 7 'Curiosity' textbook covers physics, chemistry, biology, and Earth/environmental sciences — all interconnected topics.
- Reversible changes can be undone (e.g., ice melting back to water); irreversible changes cannot (e.g., a torch battery running out, wood burning).
- The Water Cycle: the Sun heats oceans — water evaporates — forms clouds (condensation) — falls as rain (precipitation) — collects in rivers/ground, and repeats.
- Early humans told time using shadows cast by the Sun (an early form of the sundial).
- Eclipses happen when the Earth and Moon cast shadows on each other — this links directly to Chapter 12 (Earth, Moon and the Sun).
- Life processes (eating, breathing, blood circulation) keep animals alive and are explored further in Chapter 9.
- Day and night happen because the Earth rotates on its axis and receives sunlight on only one side at a time.
- Science encourages 'responsibility' — using scientific thinking to understand and solve environmental and everyday problems, not just to discover new things.

Quick Glossary

- Reversible change — a change that can return to its original form.
- Irreversible change — a change that cannot return to its original form.
- Evaporation — liquid water turning into water vapour due to heat.
- Eclipse — a phenomenon where a shadow is cast by the Earth or Moon onto the other.

STUDY TIPS & EXAM TRICKS

- Remember: 'Curiosity leads the way' — most conceptual questions in this chapter test whether you understand science as a PROCESS (observe — question — hypothesise — test), not a set of facts to memorise.
- For reversible vs irreversible questions, ask yourself: 'Can I get the original substance back exactly as it was?' If no — it's irreversible.
- Common mistake: students confuse 'evaporation' with 'boiling' — evaporation happens slowly at any temperature; boiling is rapid at a fixed temperature.
- For assertion-reason questions, always evaluate the Assertion (A) and Reason (R) as two SEPARATE statements before deciding if R explains A.

- Link topics across chapters when answering HOTS questions — Chapter 1 previews ideas that reappear later (e.g., materials — Ch2/Ch4, eclipses — Ch12).

SAMPLE PREVIEW
AlphaLearn Studylab

Part A — Concept Builder Questions

Section A: Multiple Choice Questions

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

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

Answer: (b) Curiosity

Q2. According to the chapter, science is best described as:

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

Answer: (c) A process and a way of thinking

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

- (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

Answer: (b) A butterfly and a paper plane

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

- (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?

Answer: (b) How do things work and why do events happen the way they do?

Q5. Which of the following topics will students explore in the chapter on materials?

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

Answer: (a) Why some fruits are sour

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

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

Answer: (b) Materials as metals and non-metals

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

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

Answer: (c) A torch battery running out

Q8. Early humans used which natural phenomenon to tell the time?

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

Answer: (c) The shadows of objects in the Sun

Q9. What causes the phenomenon of eclipses as mentioned in the chapter?

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

Answer: (b) The Earth and Moon casting shadows

Q10. Activity 1.1 in the chapter is called:

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

Answer: (c) Question the Answer

Section B: Fill in the Blanks

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

Answer: experiments

Q12. Science covers everything — small and large, _____ and far.

Answer: near

Q13. Learning takes flight when _____ leads the way.

Answer: curiosity

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

Answer: Earth/environmental

Q15. A torch battery runs out eventually and _____ be used again.

Answer: cannot

Q16. Water evaporates from the seas because of the heat from the _____.

Answer: Sun

Q17. Around the middle-school years, our _____ change rapidly.

Answer: bodies

Q18. Blood has to _____ nutrients from food all over the body.

Answer: carry

Q19. Day and night depend on receiving _____ from the Sun.

Answer: light

Q20. The chapter says, 'To be a wise person, you must be a _____ person.'

Answer: whys

Section C: True or False

Q21. The Curiosity textbook is just a book of facts.

Answer: False

Q22. Science is only about conducting experiments in a laboratory.

Answer: False

Q23. The dream of flying started with simple observations and experiments.

Answer: True

Q24. Scientific ideas in different areas of science are all interconnected.

Answer: True

Q25. All changes that happen around us can be reversed.

Answer: False

Q26. Plants do not need food to grow.

Answer: False

Q27. Early humans used electric clocks to tell the time.

Answer: False

Q28. Light helps us understand the universe we live in.

Answer: True

Q29. The Earth rotates around the Moon.

Answer: False — the Moon rotates around the Earth

Q30. Great scientists ask amazing questions, not just answer them.

Answer: True

Section D: Match the Following

(1) Metals and non-metals (2) Eclipses (3) Photosynthesis (4) Water cycle (5) Activity 1.1

(a) Asking a question for a given answer (b) Earth and Moon casting shadows (c) How plants make food (d) Evaporation and rainfall (e) Classification of materials

Answer: 1-e, 2-b, 3-c, 4-d, 5-a

Section E: One-Word Answers

Q36. Name the process by which water turns into vapour due to the Sun's heat.

Answer: Evaporation

Q37. What is the name of the Grade 7 NCERT science textbook?

Answer: Curiosity

Q38. What do we call changes that cannot be undone?

Answer: Irreversible (changes)

Q39. Name the phenomena caused when the Earth and Moon cast shadows.

Answer: Eclipses

Q40. What type of thinking does science encourage — curiosity or avoidance?

Answer: Curiosity

SAMPLE PREVIEW
AlphaLearn Studylab

Part B — Understanding Questions

Section A: Very Short Answer Questions

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

Answer: It says science is a process and a way of thinking.

Q2. Mention any two fields of science covered in the Grade 7 Curiosity textbook.

Answer: Any two: physics, chemistry, biology, Earth/environmental sciences.

Q3. What inspired real scientific explorations of flight, according to the chapter?

Answer: Simple observations and experiments, like watching a paper plane fly.

Q4. Name any two life processes essential for animal survival mentioned in the chapter.

Answer: Any two: eating, breathing, blood circulation.

Q5. What is the term for changes that can be undone?

Answer: Reversible changes.

Q6. Where does water go when it evaporates from the seas?

Answer: It rises into the atmosphere as water vapour and later forms clouds.

Q7. How did early humans tell the time before electric clocks were invented?

Answer: They used the position and length of shadows cast by the Sun.

Q8. What does 'whys person' mean in the context of this chapter?

Answer: It means being a curious person who keeps asking 'why' about the world.

Q9. Which body movements are responsible for day and night on Earth?

Answer: The Earth's rotation on its own axis.

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

Answer: It encourages questioning, exploring and experimenting rather than just reading and memorising facts.

Section B: Short Answer Questions

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

Answer: 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.

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

Answer: Students will learn to build simple circuits and use them to test which materials conduct electricity, helping classify materials as metals or non-metals.

Q13. How does water move through the water cycle as described in the chapter?

Answer: 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.

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

Answer: 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.

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

Answer: 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.

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

Answer: 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?'

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

Answer: Observing how a paper plane flies and experimenting with its design connects directly to the science of aerodynamics and flight.

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

Answer: Because real-world observations outside the classroom (like weather, plants, shadows) help students connect scientific concepts to everyday life more meaningfully.

Q19. What questions about plants does the chapter encourage students to think about?

Answer: Questions like why plants need water, how they make food, and why they grow towards light.

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

Answer: 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 Questions

Q21. A: The chapters in the Curiosity Grade 7 book are all interconnected. R: Scientific ideas in one area often inspire discoveries in another area.

Answer: (a) Both A and R are true, and R is the correct explanation of A.

Q22. A: Plants do not need food to survive. R: Only animals need nutrients for growth and survival.

Answer: (d) A is false, but R is true (only animals eat food from external sources the way described; plants make their own food but still need it).

Q23. A: Early humans used shadows to tell the time. R: The position of shadows changes as the Sun moves across the sky.

Answer: (a) Both A and R are true, and R is the correct explanation of A.

Q24. A: Science experiments always confirm exactly what we expect to happen. R: Experiments sometimes lead to additional unexpected questions.

Answer: (d) A is false, but R is true.

Q25. A: A torch battery that has run out can be recharged and reused indefinitely. R: Some changes in materials are irreversible.

Answer: (d) A is false, but R is true.

Section D: Case-Based MCQs

Passage: 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 lemons are sour and some fruits change colour as they ripen.

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

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

Answer: (b) Chemistry

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

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

Answer: (c) Chemical property (acidic nature)

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

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

Answer: (b) An irreversible chemical change

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

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

Answer: (b) Scientific thinking and curiosity

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

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

Answer: (b) A young science explorer making small discoveries

Part C — Application & HOTS Questions

Section A: Competency-Based Questions

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?

Answer: 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.

Q2. You observe that when milk is left in the Sun for a long time, it turns sour and curdles. Classify this change and explain whether it can be reversed.

Answer: This is an irreversible change, since curdled milk cannot be turned back into fresh milk — the chemical composition has changed permanently.

Q3. Imagine you are planning a science experiment at home. Write two questions you would ask BEFORE starting the experiment.

Answer: Sample: 'What do I expect to happen and why?' and 'What variables should I keep the same to make the test fair?'

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

Answer: 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).

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?

Answer: 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.

Q6. A classmate argues that plants do not breathe because they have no lungs. Explain why this argument may be incorrect.

Answer: 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.

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.

Answer: 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.

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

Answer: 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.

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

Answer: 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.

Q10. Describe how the water cycle connects the ocean, the atmosphere, and the ground.

Answer: 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: Higher Order Thinking Skills (HOTS)

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

Answer: 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.

Q12. If the Earth did not rotate on its axis, what two major consequences for life on our planet can you predict?

Answer: 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.

Q13. The chapter compares learning to a butterfly's flight — 'learning takes flight when curiosity leads the way.' Explain what this metaphor means.

Answer: 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.

Q14. Design a simple classification system for changes in materials based on reversibility and give two examples of each.

Answer: 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.

Q15. Think of one environmental challenge and explain how scientific thinking could help solve it.

Answer: Example: plastic waste pollution — scientific thinking could help design better biodegradable materials or improve recycling processes to reduce environmental harm.

Section C: Diagram / Labelling Questions

Q16. Draw a simple diagram of the Water Cycle and label FOUR stages: Evaporation, Condensation, Precipitation, and Collection.

Answer: 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.

Q17. Draw a simple circuit diagram showing a battery, two wires, and a lamp. Indicate the direction of current flow.

Answer: 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.

Q18. Draw and label the positions of the Sun, Earth, and Moon during a Solar Eclipse.

Answer: Diagram: Sun — Moon — Earth in a line, with the Moon in the middle during a Solar Eclipse, casting a shadow on Earth.

Q19. Make a simple flowchart showing the stages of the scientific process: Observation — Question — Experiment — Result — New Question.

Answer: Flowchart: Observation → Question → Experiment → Result → New Question, each labelled with a brief description of what happens at that stage.

Q20. Draw a simple timeline showing how time-measuring methods evolved.

Answer: 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 Questions

Q21. When your mother adds lemon juice to tea, the colour changes. Explain which property of materials this demonstrates.

Answer: This demonstrates a chemical property change (acid-base reaction affecting colour), related to understanding chemical properties of materials covered in the chapter.

Q22. You notice that a steel spoon left in hot soup becomes hot at the handle. Explain what science concept this demonstrates.

Answer: This demonstrates heat conduction through metal; understanding heat flow is important for safety (avoiding burns) and for designing tools/appliances that manage heat effectively.

Q23. On a sunny day, your shadow is short at noon but long in the evening. Explain the scientific reason.

Answer: 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.

Q24. During a power outage at night, you cannot see anything in the room. Explain why light is essential for human life.

Answer: 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.

Q25. You have been asked to record your own body changes over the past year. Explain how this connects to the life processes discussed in the chapter.

Answer: 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.

SAMPLE PREVIEW
AlphaLearn Studylab

Part D — Revision Test

Section A: Multiple Choice Questions

Q1. Which of the following best describes the approach of the Curiosity Grade 7 textbook?

- (a) Memorise and reproduce facts (b) Question, experiment, and explore (c) Read and recite chapters (d) Watch videos and take notes

Answer: (b) Question, experiment, and explore

Q2. Which phenomenon is caused by the Earth and Moon casting shadows on each other?

- (a) Rainfall (b) Seasons (c) Eclipses (d) Tides

Answer: (c) Eclipses

Q3. Which of the following is a REVERSIBLE change?

- (a) Fruit ripening (b) Wood burning (c) Ice melting into water (d) Battery running out

Answer: (c) Ice melting into water

Q4. What does the chapter mean when it says science involves 'responsibility'?

- (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

Answer: (b) Science can help address environmental challenges

Q5. The water cycle is driven primarily by heat from the:

- (a) Moon (b) Earth's core (c) Sun (d) Wind

Answer: (c) Sun

Section B: Short Answer Questions

Q6. What is the difference between a reversible and an irreversible change? Give one example of each from your daily life.

Answer: 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).

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

Answer: 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.

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

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

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

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

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

Answer: 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 Questions

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

Answer: 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.

Q12. The chapter says that science topics — though presented as separate chapters — are all interconnected. Explain this idea using three examples.

Answer: 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

Passage: Arjun left a glass of water near a sunny window and noticed water had disappeared after a few hours, with droplets forming on the window glass.

Q13. What process caused the water level in the glass to decrease?

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

Answer: (b) Evaporation

Q14. The water droplets on the glass are formed by the process of:

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

Answer: (c) Condensation

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

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

Answer: (b) Scientist

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

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

Section E: Diagram Question

Q17. Draw a neat and labelled diagram of the Solar System showing the Sun, Earth, and Moon, with arrows for Earth's rotation, Moon's revolution around Earth, and Earth's revolution around the Sun. Label at least 5 features.

Answer: 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 — 5 labelled features: Sun, Earth, Moon, rotation arrow, revolution arrows.

Section F: Value-Based Question

Q18. Think about one environmental problem in your neighbourhood. (a) Describe the problem. (b) Explain how scientific thinking could help understand the cause. (c) Suggest one science-based solution. (d) Explain how this connects to the idea of 'responsibility' from Chapter 1.

Answer: 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.