



Chapter-1

The wonderful world of science

Answer Key

Q.1 Write the summary of the chapter in the flow chart below, using the hints give below:

1. **Science in Daily Life** – Discusses how science is involved in our daily activities such as cooking, transport, and communication.
2. **Inventions and Discoveries** – Emphasizes the significance of various inventions that have altered our lives.
3. **Role of Technology** – Demonstrates how machines and advanced tools have made our work easier and faster.
4. **Science and Health** – Discusses how medical science helps us combat diseases and enhance our living standards.
5. **Environment and Science** – Emphasizes the need to use science judiciously to preserve nature and prevent pollution.
6. **Future of Science** – Urges us to remain curious and utilize scientific knowledge wisely for a brighter future.

Q2. Multiple Choice Questions

1. b) Exploring and understanding the world
2. b) Science
3. c) Observation
4. c) The sky is blue because of the way sunlight scatters in the atmosphere.
5. c) Everywhere around us

Q3. Fill in the Blanks:

1. explore and learn new things
2. questions
3. reversible
4. rotation of the earth, the earth's orbit and till.
5. ask

Q4. True or False

1. False
2. True

3. False
4. True
5. False

Q5. Match the Column

	Column A	Column B
1.	Observe:	Watch something closely
2.	Question:	Ask “Why is this happening?”
3.	Hypothesize:	Make a smart guess
4.	Experiment:	Try out your guess
5.	Analyse:	Look at what happened

Q6. Assertion and Reason Questions

Assertion (A): Science begins with curiosity and the desire to understand how things work.

Reason (R): Scientists always start by memorizing facts from books.

Answer: (c) Assertion (A) is correct, but Reason (R) is incorrect. Explanation: Science is powered by curiosity, observations, and questioning. While facts are helpful, scientists don't begin by memorizing—they start by asking “why” and exploring.

Assertion (A): The scientific method includes asking questions, making guesses, and doing experiments. **Reason (R):** The scientific method is a way to solve problems step by step.

Answer: (a) Both Assertion (A) and Reason (R) are correct, and Reason is the correct explanation for Assertion. Explanation: The scientific method helps us solve problems by guiding us through logical steps—starting with observation, then questioning, hypothesizing, experimenting, analyzing, and concluding.

Q7. Very Short Answer Type Questions

1. **What is the other name of guess in the scientific method?**

The other name for a guess in the scientific method is a hypothesis.

2. **What is necessary for a seed to grow into a plant besides water and sunlight?**

Besides water and sunlight, a seed needs nutrients from the soil to grow into a plant.

3. **What is the first step in the scientific method?**

The first step in the scientific method is observation, which involves watching things carefully.

4. **Why do we need food?**

We need food because it gives us energy to play and grow.

5. **What are ecosystems?**

Ecosystems are places where plants and animals interact with each other, such as forests, oceans, and deserts.

Q8. Short Answer Type Questions

1. **How is science helpful in our daily life?**

Science is helpful in our daily lives because it is everywhere and helps us understand how

things work. For example, when you cook, ride a bike, use your phone, or even breathe, you are experiencing science in action. It helps us solve everyday problems, like figuring out why a pen stopped working.

2. What is the importance of asking questions in science?

Asking questions is very important in science because curiosity, which drives us to ask “why” and “how,” is the basis of science and learning. It pushes us to explore, investigate, and discover new things about the world.

3. Discuss the difference between reversible and irreversible changes with examples.

The document mentions that water can change into ice (solid) or steam (gas), which are examples of reversible changes. An example of an irreversible change mentioned is burning paper, which cannot be changed back.

4. What are the things that science can explore?

Science can explore anything, from tiny bugs to giant stars, from the deepest oceans to outer space. It can study everything around us, including Earth, plants, animals, food, materials, water, temperature, and celestial bodies like the Sun, Moon, and stars.

5. Why is it important to recycle materials?

It is important to recycle materials so they can be used again. Knowing the properties of materials helps in sorting them for recycling.

Q.9 Long Answer Type Questions

1. Explain the scientific method with examples.

The scientific method is a systematic way scientists solve problems and find answers. It involves several steps:

- i. **Observe:** Notice something interesting. For example, your pen isn't writing.
- ii. **Question:** Ask why or how something is happening. For instance, “Why isn't my pen writing?”
- iii. **Hypothesize:** Make an educated guess or a smart guess about the answer. A hypothesis could be, “Maybe the ink ran out,” or “Maybe the tip is clogged.”
- iv. **Experiment:** Test your hypothesis. You could check the ink level or try cleaning the tip.
- v. **Analyze:** Look at the results of your experiment to see what happened. Did your test fix the problem?
- vi. **Conclude:** Decide if your initial guess (hypothesis) was correct based on the results. If not, you form a new hypothesis and repeat the process. This method helps us find real answers and understand the world better.

2. How does science help us to understand the world around us?

Science helps us understand the world around us by providing a way of thinking and exploring. It encourages us to be curious, ask questions, and investigate how things work, from tiny bugs to giant stars, and from the deepest oceans to outer space. Through observation, experimentation, and analysis, science helps us discover the secrets of the universe and comprehend natural phenomena like why stars twinkle or how flowers bloom. It shows us the

order and patterns in nature and allows us to appreciate the complexity of the world, ultimately helping us solve problems and improve our lives.

Q10. Case-Based Question

Title: The Mystery of the Dying Plants

Scenario: A group of students is growing plants in their classroom. They notice that some of the plants are starting to wilt and turn yellow, while others are growing healthy. The students are curious to find out why this is happening.

1. What would be the first step the students should take to investigate this problem, according to the scientific method?

The first step the students should take is to observe the problem carefully. They should notice the details of which plants are wilting and turning yellow, and how they differ from the healthy ones.

2. List three possible hypotheses the students could make to explain why some plants are dying.

Three possible hypotheses are:

1. Maybe the dying plants are not getting enough water.
2. Perhaps the dying plants are not getting enough sunlight.
3. It could be that the soil for the dying plants lacks sufficient nutrients.

3. Describe an experiment the students could perform to test one of their hypotheses.

To test the hypothesis “Maybe the dying plants are not getting enough water,” the students could perform an experiment by ensuring all wilting plants receive a consistent and adequate amount of water for a set period, while continuing to provide normal care to the healthy plants as a control group. They would then observe if the wilting plants recover and become healthy.

4. What kind of data should the students collect, and how should they analyze it?

The students should collect data on the physical appearance of the plants (e.g., color, turgor of leaves, height, wilting status), the amount of water given to each plant, and the amount of sunlight each plant receives. They should also note any changes over time. They should analyze the data by comparing the observations of the treated plants with those of the healthy control plants to see if their interventions led to an improvement. They should look for patterns or correlations between the factors they changed (like water or sunlight) and the health of the plants.

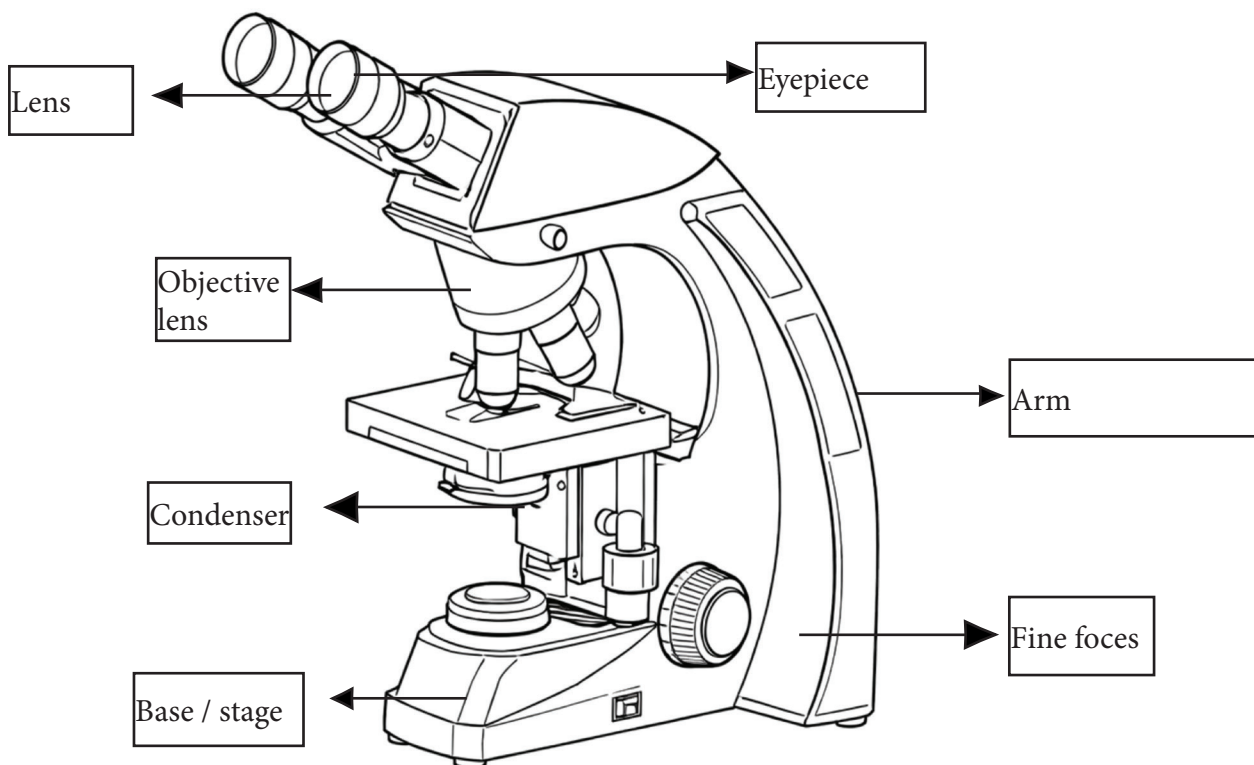
5. How can the students apply their findings to improve the health of all the plants?

Based on their findings, the students can apply what they learned to improve the health of all plants. For example, if they found that a lack of water was the problem, they should ensure all plants receive appropriate and consistent watering. If nutrient deficiency was identified, they could add appropriate nutrients to the soil for all plants. The key is to implement the solutions that were proven effective by their experiment for all plants in the classroom.

Observe & Label

Instructions: Study the diagrams below and label the parts. Use the word bank provided.

1. Parts of a Microscope



Word Bank: Eyepiece, Objective lens, Stage, Mirror, Base, Arm

2. Scientific Method Flowchart

[1] Observation



[2] Question



[3] Hypothesis



[4] Experiment



[5] Analysis




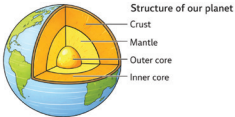


[6] Conclusion

Task: Fill in the missing steps using arrows and keywords.

Match the Concept

Match each diagram to the correct scientific concept.

Diagram		Concept
1 		A. Measures Temperature
2 		B. Magnifies tiny objects
3 		C. Used in experiments
4 		D. Structure of our planet

Draw & Discover

Instructions: Draw your own version of the following and explain in 1–2 lines.

- A scientist observing nature
A person with a notebook watching birds or plants.
Scientists observe carefully to notice patterns and ask questions.
- A simple experiment setup (e.g., mixing vinegar and baking soda)
Two containers, one with vinegar, one with baking soda, fizzing when mixed.
Mixing vinegar and baking soda produces carbon dioxide gas, showing a chemical reaction.
- A tool that helps us explore space
A telescope pointing at the night sky.
Telescopes magnify distant objects like stars and planets, helping us study the universe.

Science Around You

Instructions: Take a photo or sketch something scientific you see in daily life (e.g., a plant growing, a magnet sticking to a fridge). Write a short caption explaining the science behind it.

“Plants use sunlight, water, and air to make food through photosynthesis.”

