

Chapter-1

The Ever Evolving World of Science

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

1. **Branches of Science:** Physics-movements and energy; Chemistry-properties of material; and Biology-life processes.
2. **Changes of Matter:** To understand physical changes, chemical changes, and the reversibility and irreversibility of a process such as melting of ice versus ripening of fruits.
3. **Properties of Materials:** Investigation into electrical conduction, classifying materials into metals and non-metals.
4. **Celestial Phenomena:** Describe the Earth's rotation, causing day and night; its revolution and axial tilt, which cause the seasons.
5. **Light and Shadows:** How does the apparent behaviour of light help us explain eclipses? How did early humans measure the passage of time by means of shadows?
6. **Environmental Responsibility:** Showing how scientific knowledge helps us take care of the planet and create sustainable habits for the future.
7. **Taking Cues from Nature:** Emphasizing the simple observations, such as of bird wings, which lead to massive inventions of things like aircraft.

Q.2 Multiple Choice Questions

1. **The primary aim of the science book is:**
 - b. Get students excited about science and think like scientists
2. **Science helps us understand:**
 - b. Tiny unseen things to giant celestial bodies
3. **Asking “why” and “how” is tested through:**
 - b. Experiments
4. **The study of “how things move and energy works” is:**
 - c. Physics
5. **Metals are used in wires because they:**
 - b. Conduct electricity
6. **Non-metals like plastic are used in handles to:**
 - b. Keep us safe from shocks
7. **Melting ice is an example of:**
 - b. Reversible change
8. **A fruit ripening is:**
 - b. Irreversible change

9. Day and night are caused by:

b. Rotation of Earth

10. Seasons are caused by:

b. Revolution of Earth around Sun

Q.3 Assertion and Reason

1. **Assertion (A):** Knowledge of scientific processes may enable people to understand the effects of human actions on the environment.

Reason (R): Scientific knowledge may help people feel a sense of responsibility towards creating a more sustainable world.

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

2. **Assertion (A):** Observing patterns in the natural world, such as the movement of shadows, aided early humans in developing methods to measure time.

Reason (R): Early humans used their observations of recurring natural phenomena to create practical tools and systems.

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

Q.4 Case Study Based Question

A student is conducting an experiment on simple circuits using batteries, wires, and a light bulb. They attempt to use different objects to complete the circuit. They observe that the light bulb turns on when using a metal spoon but not when using a plastic spoon.

1. What concept from the text does this experiment relate to?

The text mentions playing with “electric batteries, lamps and wires to try to find other kinds of properties of materials”. This experiment directly relates to this.

2. What property of the materials is being tested in this scenario?

This experiment tests the electrical conductivity of the materials.

3. What broader classification of materials does this experiment lead to, as mentioned in the text?

This experiment leads to classifying materials based on their properties, specifically into “metals and non-metals”.

Q.5 Picture-Based Questions

1. What type of change is this?

Reversible and physical change.

2. Why is copper used in wires?

It conducts electricity efficiently.

3. What does this cause?

Seasons.

4. What causes this?

Moon blocks sunlight, casting shadow on Earth.

5. What did early humans use it for?

Measuring time using shadows.

Q.6 Very Short Answer Questions

- 1. What is curiosity?**
Desire to know or learn more.
- 2. Name two types of changes.**
Reversible and irreversible.
- 3. What makes a lamp glow?**
Electricity passing through bulb.
- 4. What is evaporation?**
turning of Liquid into gas due to heat.
- 5. What is rotation?**
Earth spinning on its axis causing day and night.

Q.7 Short Answer Questions

- 1. How science makes connections between several school subjects.**
Science connects disciplines like physics, chemistry, biology, and earth science because it demonstrates principles in each subject that are similar to those in other fields. It one can help to clarify the understanding of the one in question. For example, one can clarify the understanding of materials in chemistry can explain things in biology or physics. It can give us the perspective of the entire picture of how the formula works in.
- 2. What is the importance behind questions asked in science?**
It is very important to ask questions while dealing with science because it helps us become more curios
investigate. It helps us find the problems and things to try. This leads to new discoveries and helps us understand nature better.
- 3. What is science's contribution to our knowledge of changes in our environment?**
Science helps us understand changes in our surroundings by studying things like how materials change, how heat moves, or how water cycles. It shows us how these changes happen and what impact they have on nature, which helps us be more aware of our environment.
- 4. What's the main role of observing things in science?**
Observation in science is making careful notes about our surroundings. That is our questions come from and how we start to form ideas. It helps scientists spot patterns or odd things, This then directs their research, which enables them to make reliable conclusions.
- 5. In what ways does science promote a sense of responsibility for the environment?**
Science motivates us to protect our environment by teaching us the impact our actions have on nature. Science helps us in our day-to-day life in many ways, like it gives us the information we need to solve problems like pollution or the use of too many resources. This helping us build healthy habits for a healthy planet.

Q.8 Long Answer Questions

1. **Explain how the study of light and shadows provides crucial insights into celestial phenomena.**

The concepts of light and shadows are significant as they play a crucial role in defining the mechanisms that are active in respect to day and night, as well as eclipses. The rotation of the Earth, enabling different parts of the planet to be exposed to sunlight, results in day and night. Eclipses, which are typically observed in respect to day and night, are a result of the formation of shadows as a consequence of the proper positioning of the Earth and Moon in respect to the Sun. Analysis of the nature of light and shadows would therefore allow us to decipher the pattern in respect to eclipses, thus increasing our elucidation of the universe as a whole.

2. **What is the critical role of scientific questioning in the pursuit of discovery?**

The art of inquiry is fundamental to scientific discoveries. Scientists are not just obsessed with obtaining Ans. They are constantly, or to a larger extent, inquiry-driven and pose questions that question existing knowledge while providing fresh avenues for scientific discoveries. This form of inquiry leads to an innate understanding while forging the path to refine a theory or unearth a new phenomenon. For instance, the question “Why do things work the way they do?” instigates scientific inquiry, exploration, and the expansion of knowledge.







Q.9 Value-Based Questions

1. **Why should we use science responsibly?**
To protect environment and ensure sustainability.
2. **How does curiosity benefit society?**
Leads to innovations and discoveries.
3. **Why is classification of materials important?**
Helps in safe and effective use.
4. **How can science help reduce pollution?**
By developing eco-friendly technologies.
5. **Why is teamwork important in science experiments?**
Encourages collaboration and better results.

Q.10 Open-Ended Questions

- How can students use science to make their community better?**
By applying eco-friendly practices and spreading awareness.
- What role does imagination play in scientific discovery?**
It inspires new ideas and experiments.
- How can simple observations lead to big discoveries?**
Observing everyday phenomena can inspire inventions (e.g., paper planes → airplanes).
- What responsibilities do young scientists have towards nature?**
Protecting environment, using resources wisely.
- How can science education prepare us for the future?**
By teaching problem-solving, innovation, and sustainability.

Q.11 Fill the table with sketches or pasted images:

Aspect	Picture/Sketch	Example/Discovery	Impact on Society	Self-Reflection
Curiosity		Fire for warmth & cooking	Sparked invention	
Invention		Microscope helps doctors	Better diagnosis	
Observation		Discovery of continents	Global awareness	
Communication		Internet connects people	Faster sharing	

Read the situations and respond creatively (draw, write, or role-play):

A scientist designs a talking robot.

- 1. What branch of science is involved?**
To be completed independently by the students.
- 2. Draw a “Future Tech Sticker.”**
To be completed independently by the students.

A medicine reduces fever.

- 1. Why is it important to take medicine?**
To be completed independently by the students.
- 2. Sketch a “Health Hero Badge.”**
To be completed independently by the students.

A clock is improved for accuracy.

- 1. What principle is used?**
To be completed independently by the students.
- 2. Create an “Innovation Award.”**
To be completed independently by the students.

Self-Evaluation

To be completed independently by the students.

Reflection & Action

- 1. Draw a “Science Timeline Tree”:**
To be completed independently by the students.
- 2. Write one way you will keep learning each week to grow your curiosity**
To be completed independently by the students.