CBSE Class 6
NCERT Solutions- Notes and Exercise

Chapter 1. The Wonderful World of Science

1. What is Science?

Science is a way of **understanding the world around us** by asking questions, observing carefully, and trying to find answers.
For example:

- When you wonder **why the sky is blue**, you are thinking like a scientist.
- When you ask **why sugar dissolves in tea**, you are doing science.

Science is not just about books and labs; it is also about **how things work in daily life**.

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2. Curiosity – The Starting Point

Curiosity means being eager to know more and asking questions such as:

- Why does the ice melt?
- Why does a kite fly in the air?
- Why do we get a shock when we touch a metal object in winter?

Every scientist starts with **"Why?"** or **"How?"**
For example:

- A child who takes apart a toy to see how it works is using **curiosity and science together**.

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3. Observation – Watching Carefully

Observation means using your eyes, ears, and other senses to notice things carefully.
Examples from daily life:

- You **see that water turns into steam when it is boiled**.
- You **hear that a bell rings when a switch is pressed** in an electric buzzer.

Good observation helps you **notice patterns** and small changes, which are very important in science.

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4. Asking Questions

After observing, a scientist asks questions.
Common questions in science:

- Why does this happen?
- How does it work?
- What will happen if I change this?

Examples:

- You **see that a cricket ball goes high when you hit it hard** → you may ask, "Why does it go higher if I hit it harder?"
- You **see that your plant is growing towards the window** → you may ask, "Does light affect the direction of growth?"

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5. Guessing (Hypothesis)

A **hypothesis** is a smart guess or possible answer to your question.
For example:

- Question: "Why does my phone battery drain fast?"
    - Hypothesis: "Maybe many apps are running in the background."

Another example:

- Question: "Why does the wet cloth dry faster in the sun?"
    - Hypothesis: "Heat from the sun helps water change into vapour."

Hypotheses are not final answers; they are **starting ideas** that you test.

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6. Experiment – Testing Your Guess

An **experiment** is a simple test you do to check whether your guess is correct.
Examples:

1. You think **"Sugar dissolves faster in hot water"**.
    - You take two cups: one with hot water, one with cold water.
    - You add the same amount of sugar to both and see in which cup it dissolves faster.
2. You think **"A plant needs sunlight to grow"**.
    - You keep one plant in the sun and another in a dark room.
    - You observe which plant grows better.

Through experiments, you **collect real evidence** to support or change your guess.

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7. Drawing Conclusions

After doing experiments, you **look at the data** and decide what it means. This is the **conclusion**.

Examples:

- You see that sugar dissolves faster in hot water every time → you conclude that **heat helps sugar dissolve more quickly**.
- You see that the plant in sunlight grows taller and healthier → you conclude that **plants need sunlight for proper growth**.

Conclusions should be based on your **observations and experiments**, not on assumptions.

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8. Science in Everyday Life

Science is not only in school labs; it is everywhere in daily life.

Examples in your home:

- **Cooking**: When you boil milk, you see it rise and may spill. This is because of **heat and bubbles of water vapour**.
- **Electric fan**: When you switch it on, it starts rotating – this is **electricity and motion**.
- **Washing clothes**: Soap helps remove dirt because it mixes with water and oil/grease on the cloth.

Examples outside home:

- **Bicycle**: When you press the brakes, the rubber pads stop the wheel – this is **friction**.

- **Rainbow in the sky**: After rain, sunlight passes through water drops and splits into colours – this is a **natural science experiment**.

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9. The Scientific Method (Step by Step)

The **scientific method** is a simple way of doing science. It has these steps:

1. **Observe**: Notice something interesting.
    - Example: Your torch is not working.
2. **Ask a question**: Why is the torch not working?
3. **Make a hypothesis**: Maybe the batteries are weak or wrongly placed.
4. **Experiment**: Replace the batteries or change their direction and press the switch.
5. **Observe again**: Does the torch light now?
6. **Conclude**: If it works, your hypothesis is correct; if not, you think of another reason.

This method can be used for **small problems at home, in school, or even to solve daily life puzzles**.

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10. Importance of Science

Science helps us:

- Understand **nature and the universe** (air, water, plants, stars, etc.).
- Stay **healthy** (learning about germs, cleanliness, balanced diet, vaccines).
- Travel and communicate better (cars, trains, phones, internet).
- Protect the **environment** (reduce pollution, reuse, recycle).

In simple words, **science improves our life** in many ways we may not even notice.

Vocabulary List

English word	**Hindi meaning**
Science	विज्ञान
Curiosity	जिज्ञासा
Observation	निरीक्षण / अवलोकन
Question	प्रश्न
Hypothesis	परिकल्पना / अनुमान
Experiment	प्रयोग
Conclusion	निष्कर्ष
Evidence	साक्ष्य / प्रमाण
Nature	प्रकृति

Environment	वातावरण
Daily life	दैनिक जीवन
Understanding	समझ
Pattern	पैटर्न / प्रतिरूप
Phenomenon	परिघटना
Mechanism	यांत्रिक व्यवस्था / तंत्र

Exercise

A. Very Short Answer Questions

1. **Question:** What is science?
   Answer: Science is a way of understanding the world around us by asking questions, observing carefully, and doing experiments.
2. **Question:** Write one example of curiosity from daily life.
   Answer: A child wondering why an ice cube melts when kept outside the fridge shows curiosity.
3. **Question:** What do we call a smart guess in science?
   Answer: A smart guess in science is called a **hypothesis**.
4. **Question:** Why is observation important in science?
   Answer: Observation is important because it helps us notice what is happening so we can ask questions and find correct answers.
5. **Question:** Name one place where science is used at home.
   Answer: Science is used in the **kitchen** (for example, while cooking or boiling water).

B. Short Answer Questions

6. **Question:** How does curiosity help us learn science? Give one example.
   Answer: Curiosity makes us ask questions like "Why?" or "How?", which leads us to observe and experiment, and that is how we learn science. For example, a child who asks why a balloon bursts when over-inflated starts thinking like a scientist.
7. **Question:** What is the difference between observation and an experiment?
   Answer: Observation is simply watching or noticing what is happening, while an experiment is a planned test we do to check whether our guess is correct. In observation we only watch; in an experiment we change something and see the result.
8. **Question:** Write two examples from daily life where you use the scientific method.
   Answer:
   - At home, if a torch does not work, we observe, ask "Why?", guess the batteries are weak, test by changing them, and see if the torch lights.
   - In the kitchen, if sugar is not dissolving properly, we may try stirring more or using hot water and see which works better.
9. **Question:** Why is it important to ask questions in science?
   Answer: Asking questions leads to new ideas and experiments. Without questions, we would never try to understand why things happen or how they work, so science would not grow.
10. **Question:** How does science help us in everyday life? Give two examples.
    Answer: Science helps us stay healthy (for example, by teaching us about germs and cleanliness) and also helps us in using technology like phones, fans, and vehicles in a safe and useful way.

C. Long Answer / Paragraph Questions

11. **Question:** Explain the steps of the scientific method with a simple example.
    Answer: The scientific method has the following steps:
    - First, we **observe** something interesting.
    - Then we **ask a question** about it.
    - After that, we make a **hypothesis** (a smart guess).
    - Next, we do an **experiment** to test the guess.
    - Finally, we **draw a conclusion** based on what we saw.

Example: A child observes that a plant in the dark room is not growing well. He asks, "Does this plant need sunlight?" His hypothesis is that "plants grow better in sunlight." He then keeps one plant in sunlight and another in the dark and observes for a few days. He finds that the plant in sunlight grows better, so he concludes that plants need sunlight to grow.

12. **Question:** Describe how a child can use science while playing with a toy car (mention observation, question, hypothesis, and experiment).
    Answer: A child can use science while playing with a toy car like this:
    - **Observation:** The child sees that the toy car moves faster on a smooth floor than on a rough carpet.
    - **Question:** The child asks, "Why does the car move faster on the smooth floor?"
    - **Hypothesis:** The child guesses that the rough carpet creates more friction, which slows the car.
    - **Experiment:** The child runs the toy car on both surfaces carefully several times and watches its speed.
      If the car is always faster on the smooth floor, the child concludes that smooth surfaces offer less friction.
13. **Question:** How is science present in our kitchen? Give at least three examples.
    Answer: Science is present in our kitchen in many ways:
    - When we **boil water or milk**, we see bubbles forming, which shows that heat changes liquid into steam (science of heat and evaporation).
    - When we **stir sugar or salt in water**, we see that it disappears; this is the science of dissolving and mixing.
    - When we use **gas or electric stove**, we are using energy (chemical or electrical) to produce heat, which is also a scientific process.

D. Fill in the Blanks

14. **Question:** A smart guess in science is called a …… .
    Answer: A smart guess in science is called a **hypothesis**.
15. **Question:** …….. means watching and noticing carefully.
    Answer: Observation means watching and noticing carefully.
16. **Question:** We use an …….. to test our ideas.
    Answer: We use an **experiment** to test our ideas.
17. **Question:** The final answer based on experiments is called a …….. .
    Answer: The final answer based on experiments is called a **conclusion**.
18. **Question:** The study of the natural world around us is called …….. .
    Answer: The study of the natural world around us is called **science**.

E. Match the Columns

19. **Question:** Match the following:

Column A	Column B
(a) Asking "Why?"	(i) Hypothesis
(b) A smart guess	(ii) Question
(c) Watching carefully	(iii) Observation
(d) Testing your idea	(iv) Experiment

Answers:

- (a) Asking "Why?" → **(ii) Question**
- (b) A smart guess → **(i) Hypothesis**
- (c) Watching carefully → **(iii) Observation**
- (d) Testing your idea → **(iv) Experiment**

F. True or False

20. **Question:** Science is only done in big laboratories.
Answer: False – science is also done at home, in school, and in everyday life.
21. **Question:** Observation is the first step in the scientific method.
Answer: True – usually we start by observing something around us.
22. **Question:** A hypothesis is always correct.
Answer: False – a hypothesis is a guess that must be tested; it may be right or wrong.
23. **Question:** We can use science in our daily life.
Answer: True – science is used in cooking, travelling, using electricity, and staying healthy.
24. **Question:** A conclusion is based on guessing, not experiments.
Answer: False – a conclusion is based on what we see in our experiments and observations, not just guessing.

G. Activity–Based Questions

25. **Question:** Think of a situation at home (for example, a plant not growing well).
- Write one question you can ask.
- Write one hypothesis (possible reason).
- Write one simple experiment you can do.

Answer:

- **Question:** Why is this plant not growing properly?
- **Hypothesis:** Maybe it is not getting enough sunlight.
- **Experiment:** Keep one plant in a bright, sunny place and another in a dark room, water both equally, and observe after a week which plant grows better.

26. **Question:** Write a short paragraph on "A Day without Science" (what life would be like if science did not exist).

Answer:
If science did not exist, there would be no fans, bulbs, or electric appliances at home. We would have to walk or ride animals instead of using buses, cars, or trains. We would not know much about germs, so many diseases would spread easily. Life would be very different, slower, and more difficult without the help of science.
