

Based on **CURIOSITY** New NCERT Textbook

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SCIENCE

CURIOSITY

For the Student of Class 8

By :
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CONTENTS

Chapter 1.	Exploring the Investigative World of Science	1
Chapter 2.	The Invisible Living World : Beyond Our Naked Eye	6
Chapter 3.	Health : The Ultimate Treasure	29
Chapter 4.	Electricity : Magnetic and Heating Effects	55
Chapter 5.	Exploring Forces	76
Chapter 6.	Pressure, Winds, Storms, and Cyclones	98
Chapter 7.	Particulate Nature of Matter	121
Chapter 8.	Nature of Matter : Elements, Compounds, and Mixtures	144
Chapter 9.	The Amazing World of Solutes, Solvents, and Solutions	164
Chapter 10.	Light : Mirrors and Lenses	193
Chapter 11.	Keeping Time with the Skies	219
Chapter 12.	How Nature Works in Harmony	239
Chapter 13.	Our Home : Earth, a Unique Life Sustaining Planet	263

1

Exploring the Investigative World of Science

Summary

- Investigation usually means the process of collecting evidence, testing ideas, asking questions, gathering data, and forming conclusions through the steps of scientific inquiry. In this textbook, we will explore a wide range of topics—from the tiniest organisms, such as microbes, to massive objects like planets. To spark your curiosity, a few examples are shared here.
- We will begin with a single drop of water, revealing a hidden world of tiny organisms. Some act as invisible helpers in digestion and medicine, while others cause infections.
- What keeps our body healthy, and how do we fight infections? Nutritious food, exercise, medicines, and vaccines play a key role—and that's just the start of how science improves our lives today.
- We use electric current in many ways to make life easier—its heating effect keeps us warm, while its magnetic effect power motors and drive machines.



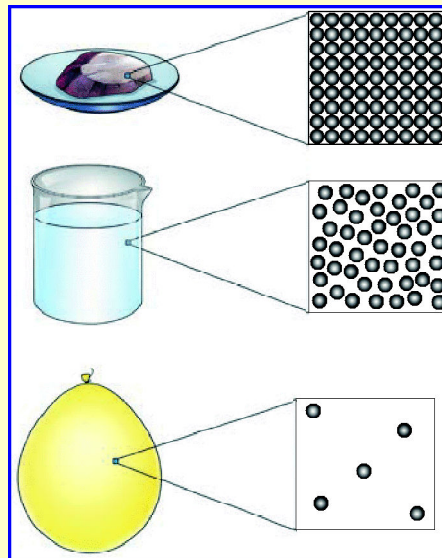
- After learning how electricity does work, we study forces—those that make objects speed up, slow down, or change direction. This explains everyday events like a ball falling back to the ground or a car stopping with brakes.



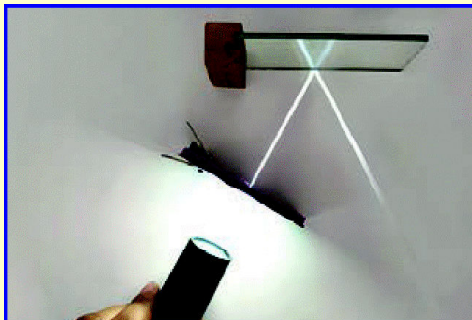
- From forces, we move to pressure—how force is spread over an object. Differences in air pressure create winds, from gentle breezes to powerful cyclones.



- All matter is made of tiny particles. In solids, they are tightly packed, while in gases, they move freely. Science classifies materials into elements, compounds, and mixtures. Understanding how particles combine or mix helps explain solutions, like sugar dissolving in tea.



- From particles and mixtures, we move to light. How it reflects from mirrors and bends through lenses? This helps us understand everyday things, like seeing images in a spoon or how glasses help us see clearly.



- Not only polished mirrors, but rough surfaces and even the Moon reflect light. As the Earth, Moon, and Sun change their positions, different parts of the Moon are lit up each night, creating the beautiful phases we see in the sky.



- The first calendars were created by observing the Moon's phases along with sunrises and sunsets. It's fascinating that our daily routines are guided by the movements of celestial objects far beyond Earth.
- It's not only the Sun and Moon that show connections—on Earth too, living beings share intricate relationships with their surroundings. From the smallest insect to the largest whale, and from tiny grasses to tall trees, all depend on air, water, sunlight, and one another, together forming the ecosystems that sustain life on our planet.
- The final chapter explains why Earth is 'just right' for life—its perfect distance from the Sun, liquid water, and protective atmosphere. It also highlights how human activities are disrupting the climate, leading to serious consequences.
- The same principles of observing, measuring, and experimenting will help us protect Earth's fragile balance. The challenges are tough, but with curiosity, some of you may find solutions.
- Remember, science is all around us! You don't need a special lab—your own kitchen can be a great place to observe and experiment. All it takes is curiosity, careful observation, and the question, "What happens if...?"
- These are questions a scientist might ask — and you can too! Let's see how we can investigate this simple everyday phenomenon like a scientist would.
- First, we will try to ask a scientific question. To find answers, we do simple experiments by checking two things—what we can change or control, and what we can observe to see the effect.
- To understand changes, we must consider what can be observed or measured—sometimes with a simple yes/no answer, and other times with a specific number.
- Further, while doing such experiments, it is better to change only one thing at a time while keeping the other conditions same.
- This is exactly how all scientific experiments, from simple to the most complicated are done. This is the idea of systematic investigation.
- Whether it's a puri puffing up or the Moon shrinking after purnima, let your observations guide your journey into the world of science.



Let's Practice

A. MULTIPLE CHOICE QUESTIONS

1. Investigation in science mainly involves :
 - (a) Guessing results
 - (b) Collecting evidence and testing ideas
 - (c) Memorizing facts
 - (d) Ignoring observations

2. The magnetic effect of electric current is used in :
(a) Keeping food warm (b) Motors and machines
(c) Cooking food (d) Heating water
3. Which property of the Earth makes it suitable for life?
(a) Too close to the Sun
(b) Very high temperature
(c) Perfect distance from the Sun and presence of atmosphere
(d) No water on its surface
4. Which of these is the first step in a scientific investigation?
(a) Drawing conclusions (b) Collecting evidence
(c) Asking questions (d) Writing reports
5. Single drop of water may contain :
(a) Only harmful organisms (b) Only helpful organisms
(c) Tiny organisms, some helpful and some harmful
(d) No organisms at all
6. Helpful microbes can:
(a) Cause infections only
(b) Help in digestion and producing medicines
(c) Destroy oxygen in air (d) Stop plant growth
7. Which of the following creates winds?
(a) Force only (b) Gravity only
(c) Differences in air pressure (d) Friction

ANSWERS

1. (b) 2. (b) 3. (c) 4. (c) 5. (c) 6. (b) 7. (c).

B. FILL IN THE BLANKS

1. Changing only one factor while keeping others the same is called a _____ investigation.
2. The Moon reflects light from the _____.
3. All matter is made of tiny _____.
4. The first step in any experiment is to ask a _____ question.
5. While doing experiments, it is better to change only _____ thing at a time.
6. In _____, particles are tightly packed, while in gases, they move freely.

ANSWERS

1. systematic 2. Sun 3. particles 4. scientific
5. one 6. solids

C. TRUE OR FALSE

1. You need a big laboratory to do all science experiments.
2. In science experiments we should try to change many variables at the same time.