

Chapter 1: The Ever-Evolving World of Science

The Philosophy of Science and Exploration

- Science is an invitation to question, perform experiments, and explore the beautiful world around us.
- The world of science covers everything from the tiny cells inside a leaf to the massive movements of the sun and stars.
- The page numbers in the textbook feature a butterfly and a paper plane to symbolise that learning takes flight when it is led by curiosity.
- Simple observations often lead to major innovations; for example, the simple paper plane inspired real scientific explorations of flight, from early bird-wing studies to modern aircraft engineering.

The Journey from Grade 6 to Grade 7

- In Grade 6, science began with simple wonder, asking basic "Why?" and "How?" questions about the environment.
- In Grade 7, the focus shifts to asking much deeper questions: How do things work, why do events happen the way they do, and what can we learn from patterns in nature?.
- Science is an ongoing process of discovery and a specific way of thinking that is open to the unknown.
- Students are encouraged to experience the world through hands-on activities and experiments rather than just reading facts.

Scientific Responsibility and Interconnectedness

- Being a young science explorer comes with the responsibility of understanding how human activities are linked to the natural world and society.
- Science plays a critical role in addressing modern environmental challenges and helping to create a more sustainable world.
- While the book covers distinct fields like physics, chemistry, biology, and earth sciences, all these scientific areas are deeply interconnected.
- Scientific ideas or discoveries in one specific area often inspire discoveries or new questions in completely different areas.

Preview of Grade 7 Science Topics

- **Properties of Materials:** Exploring everyday phenomena, such as why certain fruits are sour or what happens when a haldi (turmeric) stain is washed.

- **Electricity and Classification:** Using batteries, lamps, and wires to test materials, which leads to classifying them into metals and non-metals.
- **Changes Around Us:** Studying reversible and irreversible changes, including melting ice, ripening fruits, breaking rocks, and batteries running out.
- **Heat and the Water Cycle:** Observing how heat flows and drives the water cycle through evaporation from the seas and trickling underground.
- **Life Processes:** Investigating the essential survival processes in humans, animals, and plants, such as breathing, eating, and nutrient circulation.
- **Measurement of Time:** Learning how early humans relied on the shadows of objects in the Sun to tell time long before electric or digital clocks.
- **Light and Astronomy:** Understanding how light helps us see, and how the movements of the Earth, Moon, and Sun create day, night, shadows, and eclipses.

Thinking Like a Scientist (Activity 1.1)

- A key part of thinking like a scientist is learning how to ask interesting and amazing questions, rather than just searching for answers.
- The textbook playfully notes that to be a "wise person," you must be a "whys person".
- Activity 1.1 challenges students to reverse the normal testing process by inventing curious, creative, and fun questions that could logically lead to pre-provided answers (e.g., "Just add some milk" or "42")