

# Chapter 1: Exploring the Investigative World of Science

## What is Science?

Science is the study of the world around us. It starts with **curiosity** and questions like *why* and *how*.

We learn science by **observing things and doing experiments**.

## Scientific Investigation

Scientific investigation means **finding answers in a proper way**.

### Steps:

- Ask a question
- Think of a possible answer
- Do an experiment
- Observe carefully
- Write results
- Give conclusion

We should always follow steps and not guess randomly.

## Experiment Rules

- Change only **one thing at a time**
- Keep other things same
- Observe properly

This helps us get correct results.

## Science in Daily Life (Puri Example)

- When puri is fried, it **puffs up**
- This happens due to heat and air inside

From this we learn:

- Science is everywhere
- Even kitchen can be a lab

## **Microorganisms**

- Very small living things
- Cannot be seen with naked eye

### **Types:**

- Useful → help in digestion, making medicines
- Harmful → cause diseases

## **Staying Healthy**

To stay healthy:

- Eat nutritious food
- Exercise daily
- Take vaccines

These protect us from diseases.

## **Electricity**

Electric current has:

- Heating effect → heater, iron
- Magnetic effect → motor

## **Force and Pressure**

- Force = push or pull
- It can change speed, direction or shape

Pressure = Force ÷ Area

- More force → more pressure
- Less area → more pressure

## **Air Pressure and Weather**

- Air moves due to pressure difference
- Small difference → breeze
- Large difference → storms, cyclones

## **Matter**

Everything is made of tiny particles.

## **States:**

- Solid → fixed shape
- Liquid → flows
- Gas → spreads

## **Types of Substances**

- Element → pure substance
- Compound → elements joined
- Mixture → substances mixed

## **Solutions**

- When one thing dissolves in another

Example: sugar in tea

## **Light**

- Reflection → light bounces back
- Refraction → light bends

Used in mirrors, lenses, glasses

## **Moon Phases**

- Moon changes shape daily
- Due to position of Earth, Moon and Sun

Used to make calendars

## **Ecosystem**

- Living things depend on:
  - Air
  - Water
  - Sunlight
  - Other living things

## **Earth and Climate**

- Earth is perfect for life
- Has water and air

But:

- Human activities cause climate change

## **Scientific Thinking**

- Observe carefully
- Think logically
- Be curious

Good science = observation + thinking + experiment

## **Important Point (Very Important)**

Always:

- Ask questions
- Observe carefully
- Do experiments properly