

Science and Writing II

Introduction to Science Text Types

In Science, we write for different reasons.

Sometimes we write to:

- record an experiment
- give facts about a topic
- explain how or why something happens
- give instructions
- describe observations
- compare information
- organise results

These different kinds of writing are called **text types**.

Each text type has a different **purpose, structure** and **style**.

Over the next few lessons, we will focus on important text types used in Science:

1. **Scientific Reports**
2. **Information Reports**
3. **Explanations**
4. **Procedures**
5. **Observations**
6. **Comparisons**
7. **Diagrams and Labels**
8. **Tables and Graphs**

1. Scientific Reports

What is a scientific report?

A **scientific report** explains what happened during a science investigation or experiment.

Scientists use reports to record what they tested, what they observed and what they discovered.

Purpose

The purpose of a scientific report is to:

- explain an experiment
- record results
- show what was discovered
- help others understand or repeat the investigation

Common structure

Section	What it means
Title	The name of the experiment
Aim	What you are trying to find out
Hypothesis	What you predict will happen
Materials	The equipment you need
Method	The steps you follow
Results	What happened
Conclusion	What you learnt from the experiment

Example topic

Which material absorbs the most water?

A student might test paper towel, fabric, cardboard and plastic to see which material absorbs the most water.

Useful language

Scientific reports often use words such as:

- investigate
- observe
- measure
- predict
- result
- evidence
- conclude
- experiment

2. Information Reports 🐢

What is an information report?

An **information report** gives facts about a scientific topic. It helps the reader learn about something real.

Information reports can be about animals, plants, planets, weather, habitats, materials, forces, energy or the human body.

Purpose

The purpose of an information report is to:

- inform the reader
- organise facts clearly
- describe a topic
- teach important information

Common structure

Section	What it means
Title	The topic of the report
Opening statement	Introduces the topic
Subheadings	Organise information into sections
Facts and details	Give information about the topic
Conclusion	Summarises the topic

Example topic

Sea Turtles

An information report about sea turtles might include facts about their appearance, habitat, diet, life cycle and threats.

Useful language

Information reports often use:

- facts
- technical words
- present tense
- topic sentences
- formal language

Example:

Sea turtles are reptiles that live in oceans around the world.

3. Explanations

What is an explanation?

An **explanation** tells the reader **how** or **why** something happens.

It explains a process, event or system in a clear order.

Purpose

The purpose of an explanation is to:

- explain how something works
- explain why something happens
- show cause and effect
- help the reader understand a process

Common structure

Section	What it means
Title	Names the process being explained
Opening statement	Introduces what will be explained
Sequenced explanation	Explains each stage in order
Conclusion	Summarises the process

Example topic

How rain is formed

An explanation about rain would describe evaporation, condensation and precipitation.

Useful language

Explanations often use words that show order and cause:

- first
- next
- then
- because
- as a result
- therefore
- causes
- leads to
- finally

Example:

When the sun heats water, the water evaporates and turns into water vapour.

4. Procedures

What is a procedure?

A **procedure** gives instructions that tell someone how to do or make something.

In Science, procedures are used to explain how to complete an experiment, investigation or practical task.

Purpose

The purpose of a procedure is to:

- give clear instructions
- show steps in order
- help someone complete a task
- explain what materials or equipment are needed

Common structure

Section	What it means
Title	What you are doing
Goal	What the task is
Materials	What you need
Steps/Method	What to do in order
Safety Tips	Warnings or careful instructions

Example topic

How to plant a seed

A procedure would list the materials and steps needed to plant and care for a seed.

Useful language

Procedures often use command verbs, also called **imperative verbs**.

Examples:

- cut
- fold
- mix
- pour
- measure
- place
- stir
- observe
- record
- check

Example:

Place the seed carefully into the soil.

5. Observations 👁️

What is an observation?

An **observation** is a careful description of what you notice using your senses or scientific tools.

In Science, students observe what they can see, hear, smell, feel or measure.

Purpose

The purpose of an observation is to:

- describe what is happening
- record changes
- notice details
- collect information during an investigation

Common structure

Section	What it means
Date/Time	When the observation was made
Object or Event	What you are observing
Details	What you noticed
Changes	What changed over time
Measurement	Numbers or data, if needed

Example topic

Observing a growing plant

Students might observe the height, colour, leaves and changes in a plant over several days.

Useful language

Observations often use:

- descriptive words
- measurement words
- present tense
- precise details

Examples:

- The stem is 8 cm tall.
- The leaves are light green.
- The liquid has changed colour.
- Small bubbles are forming.

6. Comparisons

What is a comparison?

A **comparison** explains how two or more things are similar and different.

In Science, comparisons help students understand features, materials, animals, planets, habitats or results.

Purpose

The purpose of a comparison is to:

- show similarities
- show differences
- organise information
- help explain scientific ideas clearly

Common structure

Section	What it means
Title	Names what is being compared
Introduction	Introduces the items
Similarities	Explains what is the same
Differences	Explains what is different
Conclusion	Summarises the main comparison

Example topic

Comparing solids and liquids

Students might compare their shape, movement and how they behave in containers.

Useful language

Comparisons often use:

- both
- similar
- different
- however
- whereas
- compared to
- on the other hand

Example:

Solids and liquids both take up space. However, solids keep their shape, whereas liquids take the shape of their container.

7. Diagrams and Labels ✖

What is a labelled diagram?

A **labelled diagram** is a picture or drawing that shows the parts of something.

Labels help the reader understand important features.

Purpose

The purpose of a labelled diagram is to:

- show parts clearly
- make information easier to understand
- support written explanations
- help readers visualise scientific ideas

Common structure

Section	What it means
Title	Names the diagram
Drawing/Image	Shows the object, animal, plant or process
Labels	Name important parts
Arrows or Lines	Connect labels to the correct parts
Brief notes	Explain important features

Example topic

Parts of a Flower

A labelled diagram may include the petals, stem, leaves, roots and seeds.

Useful language

Labels should be:

- short
- clear
- accurate
- neatly placed

Example labels:

- roots
- stem
- leaf
- petal
- seed

8. Tables and Graphs

What are tables and graphs?

Tables and graphs organise scientific information and results.

A table uses rows and columns.

A graph shows information visually.

Purpose

The purpose of tables and graphs is to:

- organise data
- show results clearly
- compare information
- help readers notice patterns

Common structure

Section	What it means
Title	Tells what the data is about
Labels	Name what is being measured
Numbers/Data	Show results
Units	Explain the measurement, such as cm, g or mL
Pattern Statement	Explains what the data shows

Example topic

Plant Growth Over One Week

Students might record the height of a plant each day in a table, then create a graph to show how it grew.

Useful language

Tables and graphs often use words such as:

- data
- results
- increase
- decrease
- compare
- highest
- lowest
- pattern
- measurement

Example:

The graph shows that the plant grew taller each day.

What is the difference?

Text Type	Main Purpose	Example
Scientific Report	To record an experiment	Testing which soil grows plants best
Information Report	To give facts about a topic	Facts about volcanoes
Explanation	To explain how or why something happens	How volcanoes erupt
Procedure	To give instructions	How to plant a seed
Observation	To record what you notice	Observing a plant growing
Comparison	To show similarities and differences	Comparing solids and liquids
Diagram and Labels	To show parts clearly	Parts of a flower
Tables and Graphs	To organise results or data	Plant growth over one week

Easy Way to Remember 🧠

Scientific Report

What did we test and discover?

Information Report

What facts can we learn about this topic?

Explanation

How or why does this happen?

Procedure

What steps do I follow?

Observation

What did I notice?

Comparison

How are these things similar and different?

Diagram and Labels

What are the parts?

Tables and Graphs

What does the data show?

Mini Examples

Scientific Report

Title: Which surface creates the most friction?

Aim: To investigate which surface slows a toy car the most.

Hypothesis: I predict that carpet will create the most friction.

Results: The toy car travelled the shortest distance on carpet.

Conclusion: Carpet created the most friction because its rough surface slowed the car down.

Information Report

Title: Volcanoes

Volcanoes are openings in the Earth's surface where lava, ash and gases can escape. They are usually found near the edges of tectonic plates. Volcanoes can be active, dormant or extinct.

Explanation

Title: How Volcanoes Erupt

Volcanoes erupt when pressure builds beneath the Earth's surface. Melted rock, called magma, rises through cracks in the Earth. When the pressure becomes too strong, magma escapes from the volcano as lava.

Procedure

Title: How to Plant a Seed**

Materials:

- seed
- small pot
- soil
- water
- sunlight

Steps:

1. Fill the pot with soil.
2. Make a small hole in the soil.
3. Place the seed into the hole.
4. Cover the seed with soil.
5. Add a small amount of water.
6. Place the pot near sunlight.
7. Observe the seed over the next few days.

Observation

Title: Plant Observation

Date: Monday

Observation: The seedling is 4 cm tall. It has two small green leaves. The soil is damp. The stem is thin and light green.

Comparison

Title: Solids and Liquids

Solids and liquids both take up space. However, solids usually keep their shape, whereas liquids change shape to fit their container.

Learning Check

Answer these questions:

1. Which text type records an experiment?
 2. Which text type gives facts about a scientific topic?
 3. Which text type explains how or why something happens?
 4. Which text type gives instructions?
 5. Which text type records what you notice?
 6. Which text type shows similarities and differences?
 7. Which text type uses arrows and labels?
 8. Which text type organises data in rows, columns or visual displays?
 9. What is a hypothesis?
 10. What are command verbs?
 11. Why do procedures need steps in order?
 12. What is the difference between an information report and an explanation?
 13. Why are observations important in Science?
 14. Why do scientists use tables and graphs?
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Student Task

Read each topic. Decide which Science text type would suit it best.

Topic	Best Text Type	Why?
How rain is formed	Explanation	It explains how something happens
Facts about koalas	Information Report	It gives facts about a living thing
How to plant a seed	Procedure	It gives steps to follow
Testing which paper is strongest	Scientific Report	It records an experiment
Watching a plant grow each day	Observation	It records what is noticed
Solids compared to liquids	Comparison	It shows similarities and differences
Parts of a flower	Diagram and Labels	It shows the parts clearly
Plant height over one week	Table or Graph	It organises data and results

Key Reminder 🌟

Good science writing should be:

- clear
- organised
- accurate
- written in full sentences
- supported by facts or observations
- easy for the reader to follow

Before you begin writing, ask yourself:

What am I trying to do for my reader?

Am I trying to record, inform, explain, instruct, observe, compare or organise data?

Once you know the purpose, you can choose the right structure and language.