



Subject: Science

Year 5

Overview

In year 5, pupils learn how to work scientifically by:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

Autumn

Autumn Term 1

Super scientists:

- Looking at science in the real world and the different stereotypes we face in science
- Health and safety in the science lab.
- The different types of science equipment.
- The different types of science investigation.
- Lower KS2 skills such as fair testing, predictions, conclusions and bar charts are recapped so we can assess their starting point from lower school.

Skill focus:

- Reading different types of equipment (measuring cylinder, thermometer)

Let's get moving:

- Magnetism, weight, friction, water resistance and air resistance as examples of forces.
- How to measure force using a Newton meter
- How to represent forces on diagrams.
- What a lever, gear and pulley system is and how this relates to forces.
- Pushing the ideas of explaining predictions.

Skill focus:

- Fill in a table accurately
- Draw a results table and calculate the mean

Key words: mass, weight, newtons, friction, air resistance

Autumn Term 2

Material world:

- Exploring properties of different materials and linking this to their function
- Looking at various ways of separating mixtures- with a focus on soluble and insoluble substances
- Explaining the difference between chemical and physical changes
- Laboratory write up skills:

Skill focus:

- Write a practical write up: aim, method, prediction, variables (fair test, independent, dependent), table, graph, conclusion.

Key words: solution, separate, evaporation, filtration, properties

At the end of the super scientist topic students complete a number of tasks in order to earn their practical license. This involves demonstrating their understanding of health and safety, use of practical equipment and bar chart construction.

Students are assessed on their practical write up skills, with a focus on constructing tables, calculating means and their prediction making/ conclusion drawing skills.

Students sit an end of topic test for both units.

Material World

This topic looks at:

- Describing a material's properties
- Investigating properties
- How we can insulate to keep something warm/cold
- Dissolving
- Separating mixtures- including salt and sand
- Difference between physical and chemical reactions
- How we can tell a chemical reaction has happened

Skills focus:

- Write a practical write up: aim, method, prediction, variables (fair test, independent, dependent), table, graph, conclusion.
- Fill in a table accurately
- Accurately record measurements
- Draw a results table and calculate the mean

Key words: solution, separate, evaporation, filtration, properties

Circle of Life

This topic looks at:

- Parts of a flower
- Life cycles
- Sexual and Asexual reproduction
- Extinction

Skills focus:

- Write a practical write up: aim, method, prediction, variables (fair test, independent, dependent), table, graph, conclusion.
- Accurately record measurements
- Draw a results table and calculate the mean
- Draw bar and line graphs independently

Key words: fertilisation, life cycles, pollination, metamorphosis, reproduction

Assessment:

Teachers can look at how the students use evidence to justify their ideas (flat Vs spherical Earth task) and look at accuracy of scales in their solar system poster in order to support skills passport 2 completion.

Students sit a test at the end of the unit.

Teachers can look at the scientific nature of the predictions and conclusions students make in their assessed practical.

Students sit a test at the end of the unit.

Out of this World

This topic looks at:

- Name the planets of our solar system in the correct order.
- The movement of the planets around the sun
- The movement of the moon around the Earth
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Skills focus:

- Use various secondary resources for research.
- Create and use models to deepen their understanding.
- Use their literacy knowledge to create a space story

Key words: planets, geocentric, heliocentric, orbit, rotate, axis.

Growing Up and Getting Old

This topic looks at:

- Recap simple life cycles
- Describe the stages of the human life cycle from fertilisation to old age.
- Compare the stages of gestation in different animals.
- Describe the changes that happen during puberty and why they happen.
- Describe how children develop using PIEs.

Skills focus:

- Plot data accurately
- Draw a line graph
- Evaluate investigations

Key words: gestation, reproduction, puberty, develop

Assessment:

Students are assessed on their practical write up skills.

Students sit an end of topic test for both units.

At the end of the summer term students will sit a GL test for science.

Homework:

- Students given homework once a half term
- Students complete three from a choice of tasks