Science
Year 8

Irlam and Cadishead Academy
The best in everyone™
Part of United Learning

OVERVIEW

The aim of science is to inspire and enthuse our students, to develop inquisitive minds that question the world around them, and discover evidence that shapes our understanding of the world in which we live. In Year 8, we study digestion and nutrition recalling detail of types of specialised cells, building on prior knowledge built in the Y7 Cells unit. We also learn about the history of the periodic table which builds on students learning of particles in Year 7. In Physics, students will learn about electricity and magnetism. This follows on from the energy topic in year 7.

Autumn

7.08 – Life cycles (Plants)
- What chromosomes, genes and DNA are.
- How humans and plants reproduce.
- How variation occurs between offspring.

8.01 – Heating and cooling
- How particle movement links to temperature.
- How heat transfers by conduction, convection and radiation.
- How insulation reduces heat loss.

8.02 – Earth and the atmosphere
- Earth's structure and the rock cycle.
- Composition of the atmosphere.
- Causes and effects of climate change.

8.03 – Forces and motion
- How to calculate speed.
- How friction and air resistance affect motion.
- How balanced and unbalanced forces change movement.

Assessment:

Synoptic end of topic tests.

Fluency once a week to support development of key skills

Personal development:

Students learn about the beauty of natural objects.

Students learn about the effect of human behaviour on the planet.

Spring

8.04 – Plants and their processes
- What photosynthesis is and why it matters.
- How leaves, roots and stems are adapted.
- How water and gases move through plants.

8.05 – Electricity 1
- What current and voltage are in simple circuits.
- How power and energy use are calculated.
- How electricity is used safely at home.

8.06 – Interactions and interdependence
- How food chains and food webs work.
- How organisms compete and adapt.
- How ecosystems depend on decay and nutrient cycling.

8.07 – Forces and work
- What work done means.
- How levers, gears and moments work.
- How pressure changes with force and area.

Assessment:

Synoptic end of topic tests

Fluency once a week to support development of key skills

Mid-Year Assessment Y7 content + 8.01 – 8.03.

Personal development:

Students build on prior learning of particle interactions by investigating density and natural materials.

Summer

8.08 – Acids and Alkalis
- How the pH scale is used.
- What happens in neutralisation.
- How acids react with metals.

8.09 – Nutrition and digestion
- What makes a balanced diet.
- How enzymes break down food.
- How nutrients are absorbed and used for energy.

8.10 – Space 1
- The structure of the Solar System.
- Why we have day, night and seasons.
- The scale of stars, galaxies and the universe.

Assessment:

Synoptic end of topic Tests

Fluency once a week to support development of key skills.

End of Year Assessment - all topics studied in Y7 and Y8

Personal development:

The awe and wonder of space develops a curiosity of the universe we live in.

Useful resources for supporting your child at home:
- BBC Bitesize and Sparx
- Knowledge Organisers
- Science Padlet available in the KS3 area on the ICA website.

Homework:

Set weekly - Sparx Science

Paper based revision booklets for midyear and end of year exam revision. Sparx can also be used by students to revise topics through quizzing.