# Science
## Year 7

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, come up with new ideas and discover new evidence that shapes our understanding of the world in which we live. In Year 7 students will develop fundamental knowledge and skills in biology, chemistry and physics whilst developing working scientifically skills by completing practical activities. There will be a focus on fluency and skills related to the topics, such as graph drawing and analysing, identifying variables and evaluating scientific conclusions.

**Autumn**

**7.01 Particles, substances and mixtures**
- Solids, liquids, gases
- Particle mode
- Diffusion
- Changes of state
- Separation techniques

**7.03 Cells and organisation**
- Animal cells
- Plant cells
- Using a microscope
- Unicellular organisms
- Diffusion and transport

**7.02 Fundamentals of Physics**
- Force Diagrams
- Contact and non-contact
- Speed
- Friction
- Energy paths & transfers

**7.04 Chemical changes**
- Physical & Chemical change
- Simple word equations
- Acids and alkalis
- Indicators and neutralisation

**Assessment:**

Synoptic end of Topic Tests

Fluency once a week to support development of key skills

**Personal development:**

Students develop an understanding of how everyday objects behave and how to use team work during practical skill to test their hypothesis

**Spring**

**7.05 Organ systems**
- Skeleton
- Muscles
- Respiratory
- Circulatory systems
- Exchange surfaces
- Arthritis

**7.06 Sound and light**
- Observing sound
- Absorption of sound
- Reflection of sound
- Speed of sound
- Observing light

**Assessment:**

Synoptic end of topic tests

Fluency once a week to support development of key skills

Mid-Year Assessment 7.01-7.04

**Personal development:**

Students learn the importance of healthy organ systems, with the behaviour of light and sound providing interesting career links.

**Summer**

**7.07 Materials**
- Ceramics
- Polymers
- Polymer properties
- Composite materials
- Investigating materials

**7.08 Life cycles**
- Heredity
- Genomes
- Variation
- Growth and puberty
- Menstrual cycles
- Birth and development
- Reproduction in plants
- Asexual reproduction

**Assessment:**

Synoptic end of topic Tests for each unit

Fluency once a week to support development of key skills.

End of Year Assessment based on all topics studied this year.

**Personal development:**

Students develop an understanding of how genetic information is transferred in plants and animals with the fascination of genetic variation.

**Useful resources for supporting your child at home:**

- BBC Bitesize
- Sparx
- Knowledge Organisers
- Science Padlet available in the KS3 area on the ICA website.

**Homework**:

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