

Overview of the year:

This year we introduce the three main areas of Science – Chemistry, Biology and Physics. Throughout the year you will be developing your practical skills, and you will be carrying out your first experiments during the first half term.

There are three Big Ideas in each of the Sciences which will be introduced this year.

| Biology Big Ideas | Chemistry Big Ideas | Physics Big Ideas |
|--|------------------------------------|------------------------------------|
| B1 Cells and cellular processes | C1 Particles and Substances | P1 Forces, Fields and Space |
| B2 Biological systems for life | C2 Chemical Changes | P2 Energy and Waves |
| B3 Organisms, interactions with the environment | C3 Earth and its atmosphere | P3 Matter and Materials |

Ways to consolidate and extend your learning in Science:

Keep up to date with the latest discoveries and improve your scientific literacy by regularly reading articles from www.sciencenewsforstudents.org. There are also Science books to borrow from the school reading rooms.

Watch scientific documentaries – there are loads on BBC iPlayer as well as on TV channels such as BBC 1 and Channel 4.

Visit museums and scientific centres. Particularly useful places to visit (all with **free entry**) are; The Science Museum, National History Museum, Wellcome Collection, Faraday Museum, Anaesthesia Heritage Centre, Kirkaldy Testing Museum, and Horniman Museum.

| Half Term | Unit title | Knowledge | Skills | Assessment |
|-----------|---|---|--|--|
| 1 | States and Separating Substances (C1) Cells (B1) | Lab safety Atoms and state of matter Separating substances Cells – the “building blocks” of all living things | Carry out a safe experiment Using scientific models Using a microscope | Test at end of half term (October) |
| 2 | Organ Systems (B2) Forces and Space (P1) | How the human body works Forces and their effects Space and the solar system | Understanding scales/ making comparisons Using units | Test at end of half term (December) |
| 3 | Earth Chemistry (C3) Inheritance (B1/B2) | Air and the structure of the Earth Sexual reproduction Heredity (traits inherited from parents) and genetic information | Using chemical symbols Recording data | Test at end of half term (February) |
| 4 | Growth and lifecycles (B2) Energy and Waves (P2) | Animal growth and lifecycles Conservation of energy and storing energy Waves, light and sound | Rearranging equations | Test at end of half term (March) |
| 5 | Acids and Alkalis (C1/C2) Ecosystems (B3) | Acids and alkalis and how to test for Our atmosphere and acid rain Predator-prey and food chains | Identifying risks and how to reduce them Graphical representations | Test at end of half term (May) |
| 6 | Electric Circuits (P2/P3) | Circuit diagrams and building circuits Measuring current and voltage Static electricity | Building electric circuits Drawing scientific diagrams | End of year exam on all topics (June/July) |