

Year 9 Science

Areas of learning

- Biology: Testing for substances, photosynthesis, seeds and plants, adaptation and variation of species, ecosystems and feeding relationships (food chain), human activity and the way it affects ecosystems.
- Chemistry: Atoms and the Periodic Table, reactions of metals and their compounds, the reactivity series of metals, study of chemical reactions.
- Physics: Density and pressure, forces and movement, electrostatics and charge, electricity.

Approaches to learning

- Simple food tests are studied and performed in the lab.
- Investigation of what plants need to grow, how they produce and store their food.
- Study of the structure and features of flowers, pollination, fertilization and seed dispersal.
- Importance of adaptation and variation, natural selection and selective breeding.
- Understand the structure of food chains, the role of consumers and producers and the factors that affect population growth.
- Ecosystems are affected long term or short term, from natural causes or as a result of human activity.
- The features and the structure of atoms is reflected by their position in the Periodic Table.
- Study of the main types of chemical reactions and the three types of bonding (covalent, ionic, metallic)
- Practice how to write and balance chemical equations.
- Study the main reactions that metals give and how they can be used to arrange the metals in order of reactivity.
- Investigate the factors which affect the rate (speed) of a reaction.
- Understand, measure, evaluate and appreciate the quantities density, pressure (in solids, liquids and gases)
- Study of the different types of forces which are related to movement, such as friction, air & water resistance.
- Charges are responsible for static electricity: investigate and understand conductors, insulators, induction, sparks, flashes and shocks.
- Design and construct circuits in series and in parallel and measure electric current.

Examples of learning

- Pupils bring in different foods from home to test them in the lab for the main food components.
- Different types of leaves are looked at using microscopes, to identify all their visible features.
- Pupils produce mini presentations on unique examples of adaptation or variation (eg. Andean people, creatures of the deep sea).

References

Secondary curriculum 2014: <http://www.gov.uk/dfenationalcurriculum>

Hodder Education: International science 3 (Textbook & workbook)