Science

Subject Overview

Science is a fundamental part of our everyday lives. It helps to explain so much of the world around us and enables advances in many areas including health, communication, the environment and leisure. The aims of KS3 Science at The Market Weighton School are to allow pupils to find out more about the world around them, to develop an interest and understanding of natural phenomena and prepare them for studying Science at Key Stage 4. Practical investigations play a significant role in how students learn in Science.

Curriculum Structure

Students in KS3 study science for three hours per week. Students are placed in mixed ability groups in year 7 and set by ability in year 8. All pupils follow the National Curriculum for science covering aspects from chemistry, physics and biology. Pupils in Y7 and Y8 follow the activate scheme of work. Stem career lessons are incorporated into the science scheme of work.

Assessment Overview

In Year 7 and 8 students complete an assessment at the end of each unit. The assessments test students on their knowledge and understanding of the unit content as well as working scientifically skills. Students aim to master the unit by achieving 75% in each of the sections (Biology, Chemistry, Physics and working scientifically skills). All students receive feedback on the test and then improve areas where they performed less well. If students don’t master a unit they are given an opportunity to retake the assessment.

Year 7 Curriculum overview

Topic title	Topic programme of study
Scientific skills	Scientific practical skills, variables, methods, graphs, data analysis and numeracy. Precision and accuracy. Conclusions.
Cells	Structure and function of cells, specialised cells
Body systems	Tissues, organs, organ systems. Mechanism of breathing, gas exchange in the lungs. Structure and function of the human skeleton, joints, muscle action
Reproduction	Adolescence, reproductive systems, Menstrual cycle, development of a Foetus Parts of a flower, seed dispersal, sexual reproduction
Particles	Particle arrangement and properties of solids, liquids and gases.
Elements, compounds and mixtures	Elements, mixtures, compounds, naming compounds, chemical formulae
Chemical reactions	Chemicla reactions, chemical equations, combustion, thermal decomposition, conservation of mass and endothermic/exothermic reactions.
Acids and alkalis	Acids, akalis, pH scale, neutralisation reactions
Forces	Effect of forces on an objects movement and shape Mass, weight, gravitational force
Energy	Transfer of energy between stores, conservation of energy Energy transfers, levers, pulleys Thermal energy, conduction, convection, radiation, insulation. Renewable and non-renewable energy
Magnets	Magnets, electromagnets, magnetic fields

	Electromagnets, factors affecting electromagnet strength, electromagnetic fields
Space	Our solar system, the Universe

Year 8 overview

Topic title	Topic programme of study
Health and disease	Balanced diet, organs of the digestive system, enzymes Drugs, alcohol and smoking.
Ecosystems	Plants and algae, adaptations for photosynthesis, factors affecting the rate of photosynthesis, chemosysnthesis. Aerobic respiration, anaerobic respiration Food webs and the interaction between organisms Natural selection, biodiversity, extinction
Adaptation and inheritance	Variation between individuals, inherited and environmental characteristics DNA, chromosomes, fertilisation, genetic crosses, mutations
The periodic table	Arrangement of elements in the periodic table, patterns in the periodic table
Separation techniques	Solutions, techniques used to separate mixtures
Metals reactions	Properties of metals and non-metals, reactivity of metals, reactions of metals with acids and oxygen
The Earth	Structure of the earth, the rock cycle Carbon cycle, greenhouse effect, global warming, recycling
Electricity	Electrical circuits, voltage, resistance Current electricity, series and parallel circuits, static electricity
Pressure and moments	Speed and motion Pressure in fluids, sinking and floating Turning forces
Light	Light and light waves, the eye, use of lenses Transverse waves, longitudinal waves, reflection, absorption and transmission of waves

Sound	Sound and sound waves, structure and function of the ear Particle movement, amplitude, frequency, ultraviolet waves, pressure waves