SCIENCE DEPARTMENT

DEPARTMENT VISION:

To instil in students the concept that science is part of their lifelong learning.

AIMS

Stimulate and excite students curiosity about phenomena and events in the world around them.

Develop students understanding of how major scientific ideas contribute to technological change.

Enable students to question and discuss science-based issues that may affect their own lives and the lives of others.

KEY STAGE 3 CURRICULUM PLAN

The Pensby High School Science department follow the Exploring Science framework at Key Stage 3. This is based on the National Curriculum Science Programme of study. Topics covered by the end of Key Stage 3 are—

Year 7	Year 8
7A Cells	8A Food and nutrition
7B Reproduction	8B Plants and their reproduction
7C Muscles and bones	8C Breathing and respiration
7D Ecosystems	8D Unicelluar organisms
7E Mixtures and separation	8E Combustion
7F Acids and Alkalis	8F Periodic Table
7G The particle model	8G Metals and their uses
7H Atoms, elements and molecules	8H Rocks
7I Energy.	8I Fluids
7J Current and electricity	8J Light
7K Forces	8K Energy transfers
7L Sound	8L Earth and Space

KEY STAGE 4 CURRICULUM PLAN

At Key Stage 4 the Science department follows the Edexcel 2016 specification. The department does both combined and separate science at GCSE. The topics covered are listed below.

BIOLOGY

Key concepts in biology
Cells and control
Genetics
Natural selection and genetic modification
Health, disease and medicines
Plant structures and their functions
Animal coordination, control and homeostasis
Exchange and transport in animals
Ecosystems and material cycles

CHEMISTRY

Key concepts in chemistry
States of matter and mixtures
Chemical changes
Extracting metals and equilibria
Groups in the periodic table
Rates of reaction and energy changes
Fuels and Earth science
Titrations
The Haber Process
Fuel Cells
Ion tests
Polymers
Nanoparticles

PHYSICS

Key concepts of physics
Motion and forces
Conservation of energy
Waves
Light and the electromagnetic spectrum
Radioactivity
Astronomy
Energy - Forces doing work
Forces and their effects
Electricity and circuits
Magnetism and the motor effect
Electromagnetic induction
Particle model
Forces and matter

MARKING AND FEEDBACK POLICY

Verbal feedback: continually within lessons - during discussions, individually as required and to class after practical work and assessments.

Book marking: minimum once per half term – general quality of effort, presentation and SPaG with written summary comment and targets for improvement. Literacy focus of the week to be addressed during live marking in the class.

Homework marking: Online homework marked by software and improvements to be addressed in lesson.

Detailed feedback: per key piece (approximately every 6-8 lessons) – written summary comments detailing strengths and at least two areas for improvement/questions to extend. Common assessment points used.

Review time: after any formative and summative assessments – students allocated lesson time (10-15 minutes) to review and act on any feedback received in assessments and maintain books.