ROAD MAP TO

THE TRIPLE SCIENCE CURRICULUM

Future careers in the NHS

Future careers with AWE

Careers in Chemistry including Chemical engineer, Forensic scientist, Food scientist

Careers in Biology including Marine engineer,Climate scientist, Botanist

Careers in [illegible]luding Laser physicist Astronaut,Acoustic engineer

Zone 11

Responsive revision of the Science curriculum

Responsive revision of the Science curriculum

Responsive revision of the Science curriculum

Inheritance, variation and evolution
Classification of living organisms, evolution and variation and genetic engineering

Ecology
Biodiversity, the impact of environmental change and the effect of human interaction on ecosystems

Using the Earth's resources
Obtaining potable water, Life cycle assessment and recycling

Chemical analysis, and purity of substances
Purity of substances and chromatography

Chemistry of the atmosphere
Evolution of the Earth's atmosphere carbon cycle, greenhouse gases

Organic Chemistry
Polymers and carbon compounds as fuels and feedstock

Space
Solar system, satellites and the stability of orbital motions

Magnetism and Electromagnetism
Motors, generators and transformers

Waves
Waves in air, fluids and solids and the Electromagnetic spectrum

Forces
Interactions, moments,gears and pressure

YEAR 11

Forces
Interactions, Moments, levers and gears, Pressure and pressure differences in fluids, Momentum

Energy changes
Exothermic and endothermic reactions, chemical cells and fuel cells

Homeostasis The human nervous system, the brain, controlling blood sugar level, the menstrual cycle and controlling fertility

Zone 10

Electricity
Electrical current, potential difference and resistance, domestic uses and safety. Energy transfers in everyday appliances. The National Grid. Static electricity

Particle model of matter
Internal energy, density and pressure

Atomic structure
Radiation, hazards and uses of radioactive emissions and of back

YEAR 10

Quantitative Chemistry
Chemical measurements, conservation of mass and the quantitative interpretation of chemical equations, use of amount of substance in relation to masses of pure substances, yield and atom economy of chemical reactions, using concentrations of solutions and amounts of gases

Chemical changes
Reactivity of metals, reactions of acids and electrolysis

Rate and extent chemical change
Rates of reactions, reversible reactions and dynamic equilibrium

Energy
National and global energy resources, advantages and disadvantages

Infection and response,
Communicable diseases and plant diseases

Infection and response,
Communicable diseases and plant diseases

Bioenergetics
Photosynthesis, respiration and metabolism

Bioenergetics
Photosynthesis, respiration and metabolism

Chemical changes
Reactivity of metals, reactions of acids and electrolysis

Cell Organisation
plant tissues, organs and systems

Cell Organisation
the heart and heart diseased, cancer

Cell Organisation
Cell structure, specialisation, differential, required practical microscopy, cell division, stem cells, transport in cells

Cell Biology
Cell structure, specialisation, differential, required practical microscopy, cell division, stem cells, transport in cells

Bonding, structure, and the properties of matter
States of matter, polymers, diamond. Graphite, graphene and fullerenes, nanoparticles

Atomic structure
Elements and compounds separating mixtures, development of the periodic table, The development of themodel of the atom, Size and mass of atoms, Groups 1, 7, 0 and transition metals

Energy
Power, efficiency, reducing unwanted energy transfers

Energy
Energy stores and changes calculations

YEAR 9

Ecosystems and processes
Photosynthesis, chemosynthesis, aerobic and anaerobic
Respiration and food chains

Adaptation and inheritance adaptation:
Variation, inheritance, natural selection and extinction

Motion and Pressure
Speed, distance and velocity time graphs
Pressure in solids
Liquids and gases
Turning forces

Options

Body Systems:
Levels of organisation
Gas exchange
Skeleton, joints and muscles

Health and Lifestyle
Healthy eating, digestion, drugs, alcohol and smoking.

The periodic table
Trends in metals, non-metals and groups1,2 7 and 0.
Chemical symbols and atomic structure of common elements

Electricity and magnetism
Electricity series and parallel circuits, current and charge, resistance, magnets and electromagnets

Energy
Food and fuels, kinetic theory, energy transfer (conduction, convection and radiation), power and work done

Separation techniques
Mixtures
Solutions
Evaporation
Distillation
Chromatography

Metals and acids
Metals and their reactions with acids, oxygen and water, displacement
Reactions, extracting metals and the properties and uses of ceramics, polymers and composites

The Earth
Structure of the Earth, sedimentary, igneous and metamorphic rock, the rock cycle, the carbon cycle, climate change and recycling

YEAR 8

Reproduction:
Adolescence
Reproductive systems
Fertilisation and implantation
Development of a fetus
The menstrual cycle
Flowers and pollination
Fertilisation and germination
Seed dispersal

Space:
The night sky
Satellites
Comets
The Solar System
The Earth's orbit
The Moon
and eclipses

Reactions:
Chemical reactions
Equations
Oxidation
Thermal decomposition
Conservation of mass
Exothermic and endothermic

Acids & Alkalis:
Concentration
Indicators and pH
Neutralistion
Making salts

Elements, Mixtures and Compounds:
Atoms

Comparing elements and compunds
Introduction to the Periodic Table
Chemical formulae

Sound:
Different types of waves
Sound and Pitch
Structure of the ear
Echoes and ultrasound

Light:
Reflection
Refraction
Structure of the eye
Seeing colour

Reactions:
Introduction to Chemical reactions
Chemical equations
Introducing oxidation and thermal decomposition
Conservation of mass
Exothermic and endothermic

Acids & Alkalis
Indicators and pH
Neutralistion
Making salts

Forces:
Measuring forces
Hooke's Law
Drag
Balanced and unbalanced

Cells:
Microscope
Plant and animal cells
Specialised cells
Unicellular organisms

Introduction module:
Asking scientific questions

Particles:
Particle model
States of matter
Changes of state
Diffusion and gas pressure

YEAR 7

Seperate Biology

Seperate Chemistry

Seperate Physics