

# Physics Learning Journey

## Skills

## Knowledge

**Year 11** "Becoming KS5 Ready"

**Magnetism 8, 9, 10, 14, 23, 24, 27**

National grid, transformers, induced potential, magnets – permanent and induced, magnetic fields, electromagnets, DC motors, alternator and dynamos, other uses of induction

Revision

Future Education, Employment & Training

KS5 Study

**Electricity 8, 9, 10, 14, 23, 24, 27**

Static, Mains – AC and DC, solving circuit problems, series and parallel circuits, I/V characteristics – Ohm's law, resistance, current, potential difference, electrical power, sensing circuits, mains – safety, electric fields.

**Year 10** "Developing into Independent Learners"

**Energy 1, 8, 9, 10, 14, 23, 24, 27**

Energy resources, efficiency, energy calculations, measuring specific heat capacity, power, conservation energy, energy stores, defining work, energy transfers, kinetic energy, and gravitational potential energy.

**Year 11**

**Space 6, 7, 8, 9, 10, 14, 23, 24, 27**

Structure of the universe, red shift and evidence for the big bang, stellar evolution

**Forces 8, 9, 10, 14, 23, 24, 27**

Measuring speed, Velocity time graphs, Vectors, Newton's Law, Solving Vector problems – Scale Drawing/Resolution, Behaviour of springs – Hooke's law, elastic potential energy, momentum and its conservation, moments and gears, atmospheric pressure, Distance time graphs, Acceleration, terminal velocity, calculating work done, elastic potential energy, rate of change of momentum, pressure at a depth in liquids, car safety.

**Year 9** "Developing Skills to Enhance Learning"

**Year 10**

**Structure of the Atom 8, 9, 10, 14, 23, 24, 27**

Uses/dangers of ionizing radiation, Half-Life, Nuclear reactions, Structure of the atom, fission, fusion, Contamination and irradiation, Radioactivity – Alpha, beta and gamma, History of the Atom.

**Waves 8, 9, 10, 14, 23, 24, 27**

Black body radiation, Ultrasound, Transmission, Reflection or absorption, Wave Equation, longitudinal & transverse waves, Lenses, Seismic waves, Reflection & refraction of light, Electromagnetic spectrum, Wave terminology

**Particle Model 8, 9, 10, 14, 23, 24, 27**

Work done on gases, Specific latent heat, Specific heat capacity, Internal energy, Density, Particle arrangement, Particle motion, Gas pressure, Boyle's Law

**Year 8** "Taking Responsibility for Learning"

**Heating & Cooling 8, 9, 10, 14, 23, 24, 27**

Heat & Temperature, Heat transport, Conduction, Convection, Radiation

**Year 9**

**Magnetism 8, 9, 10, 14, 23, 24, 27**

Magnets and magnetic materials, Electromagnets, Magnetic Poles

**Waves 8, 9, 10, 14, 23, 24, 27**

Ultrasound, Interference

**Year 7** "Transition to High School"

**Earth 6, 7, 8, 9, 10, 14, 23, 24, 27**

Seismic waves, Space exploration, The solar system, The earth, and the moon.

**Year 8**

**Gravity & Pressure 6, 7, 8, 9, 10, 14, 23, 24, 27**

Gravity & weight, Gravitational field strength, Pressure in liquids, Pressure in solids, Pressure in gases – Hydraulics.

**Electricity 6, 7, 8, 9, 10, 14, 23, 24, 27**

Potential difference, Ohm's law, Resistance, Circuits & current

**Energy 6, 7, 8, 9, 10, 14, 23, 24, 27**

Conservation, Work, Efficiency, Humans & Energy, Gravitational potential energy, Energy stores

**Waves 6, 7, 8, 9, 10, 14, 23, 24, 27**

Light, Loudness and pitch, detecting sound – the ear, Speed of sound, Seeing colour, Reflection, Refraction, Sound, Waves.

Year 6 Induction

**Year 7**

**Intro to science**

Fundamental skills, Table, and graph skills

**Forces 6, 7, 8, 9, 10, 14, 23, 24, 27**

Identifying & representing forces, drag forces & friction, Speed, distance, time, Resultant forces, Forces at a distance, Stretching and squashing.

## Skills

### Year 13

"Are you Fit for FEET?"

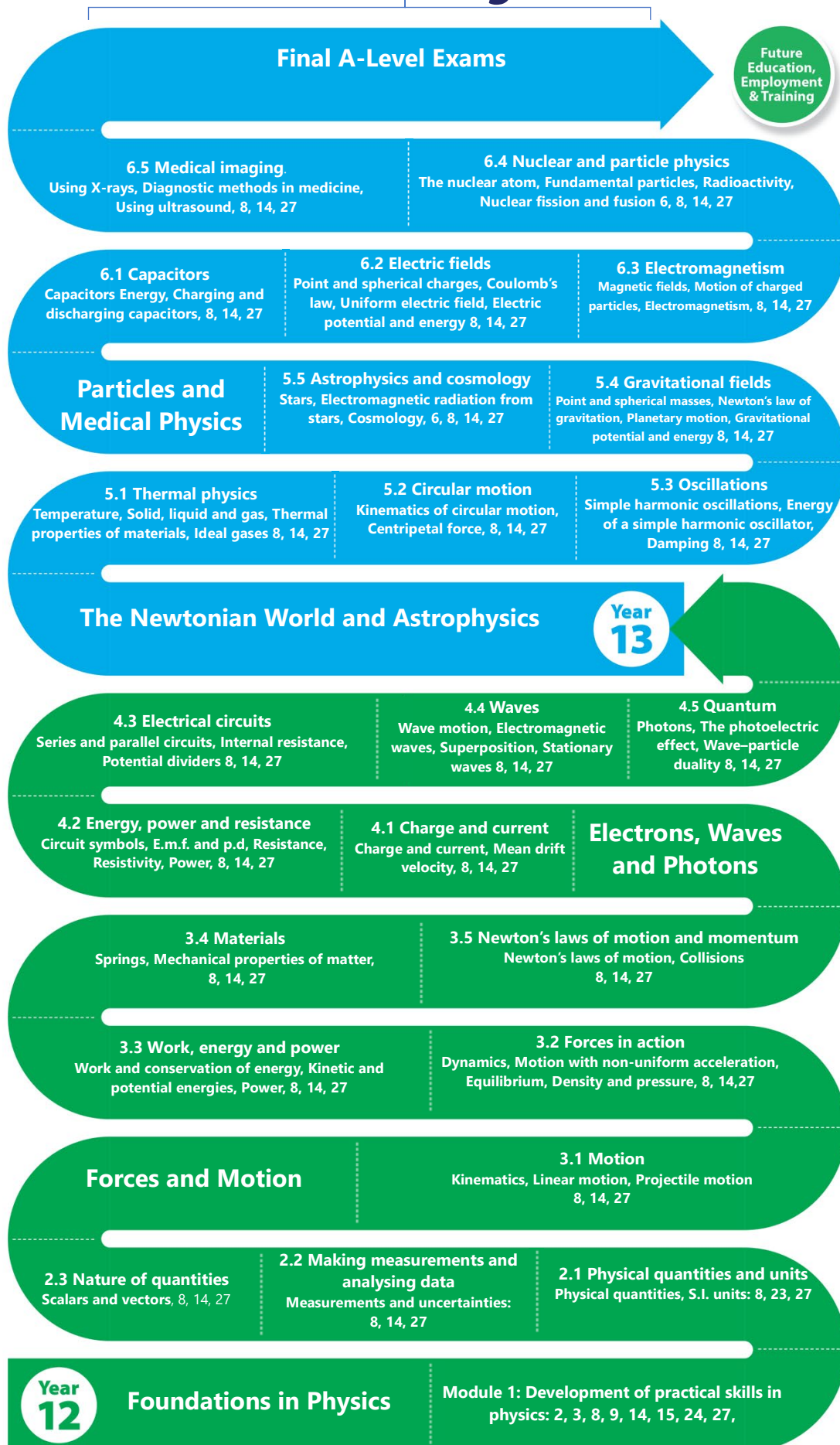


### Year 12

"Introduction to A-Level Mindset"



## Knowledge



Future Education, Employment & Training