

- Year 9**
- Energy stores
 - Energy transfers
 - Energy calculations
 - Energy resources
 - Longitudinal and transverse waves
 - Electromagnetic spectrum
 - Wave equations

YEAR 10

PHYSICS

- What is density?
- How do you calculate density?
- What are the units of density?
- How do you measure density for regular and irregular solids or gases?

- What is specific heat capacity, how is it calculated and measured?
- What is specific latent heat, how is it calculated and measured?
- Require practical: specific heat capacity.
- How does temperature affect the pressure of a gas?

The particle model

- How are the particles arranged in solids, liquids and gases?
- What forces are present?
- How do the particles move?

- What is radioactive decay?
- What are alpha, beta and gamma decay?
- What are the structures and properties of alpha, beta and gamma radiation?

- What happens during a change of state?
- What is internal energy?

- What is the structure of the atom?
- How has the model of the atom changed over time?
- What are isotopes?
- What is Rutherford Scattering?

Nuclear Radiation

Atoms and Isotopes

- What is static electricity and where is it used?
- What are electric fields?

- RP: resistance of a wire.
- What do the current-voltage graphs look like for a resistor, filament lamp and diode?
- What are the differences between series and parallel circuits?

- What is background radiation?
- How does nuclear fission work in power stations?
- What is a chain reaction?
- What is nuclear fusion and where does it happen naturally?

- How does an atom change when it undergoes nuclear decay?
- What does "half-life" mean?
- How do you measure half-life from a graph?
- What are contamination and irradiation?

- Combustion of fuels
- Common pollutants
- Environmental effects
- Acid rain
- Global warming

Electricity

Magnetism

YEAR 11

- Year 11**
- Forces and their effects
 - Motion
 - Newton's Laws
 - Moments and Pressure
 - Space Physics

- What do the key words: charge, current, potential difference, resistance, power mean?
- What are their symbols and how are they calculated?
- What are the common circuit symbols?

- What are thermistors and LDRs?
- How do we use thermistors and LDRs in circuits?
- What are the safety features of three pin plugs?
- What is the national grid and how does it work?

- What are magnets and electromagnets?
- What are electromagnets used for?
- What is the motor effect?
- How do you explain Fleming's Left Hand Rule?
- How does the electric motor work?

- What is the generator effect?
- How do alternators and dynamos work?
- What are transformers?
- Where do we use transformers?

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Year 10

- The Particle Model
- Density
- Structure of the atom
- Nuclear Physics
- Electricity
- Magnetism

YEAR
11

Electricity

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PHYSICS

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- What do the current-voltage graphs look like for a resistor, filament lamp and diode?
- What are the differences between series and parallel circuits?

- What do distance-time and velocity-time graphs show us?
- How do we calculate speed and acceleration?
- How do we apply the uniform acceleration equation?

- What are the different types of forces?
- How do forces act and combine?
- What does Hooke's Law state?

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Momentum

- What is momentum?
- How is momentum conserved?
- How do we calculate momentum?

Newton's Laws

- What are Newton's three laws of motion?
- RP: Newton's third law.
- How do Newton's laws affect car safety?

Forces

- How do orbits work?
- What types of orbit are there?
- What is red-shift and what does it show us?
- What is big bang theory?

Magnetism

- What is the generator effect?
- How do alternators and dynamos work?
- What are transformers?
- Where do we use transformers?

Moments & Pressure

- What are moments?
- How do levers and gear work?
- How do we calculate pressure in fluids?
- What factors affect pressure in gases?

Space

- What makes up the Solar System and Universe?
- How long do stars live and what stages do they go through?

Post
16

Future Study / World of Work

- A levels
- College courses
- Apprenticeships

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