



Year 10 Combined Science - Physics Learning Journey Map

Forces Working Scientifically:

- 1.2 Use a variety of models to solve problems, make predictions and develop explanations
- 1.5 Evaluate risks
- 3.3 Carry out statistical analysis
- 3.5 Interpreting observations and other data
- 3.7 Evaluating data for errors, precision and accuracy
- 4.2 Recognise the importance of scientific quantities
- 4.3 Use SI units
- 4.4 Use prefixes and powers of ten
- 4.5 Interconvert units
- 4.6 Significant Figures

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Scalar & Vector. Types of forces
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Forces Maths Skills

- 1a Use Decimals
- 1c Use ratios, fractions and percentages
- 1d Make estimates
- 2c Frequency tables, bar charts and histograms
- 2f Mean, mode and median
- 2h Order of magnitude calculations
- 3a Understand $<> \sim$ et al
- 3b Change the subject of an equation
- 3c Use algebraic equations with appropriate units
- 4a Translate information between graphical and numerical forms
- 4b Linear relationships on graphs
- 4c Plot 2 variables from experimental data
- 4d Determine the slope and intercept of a linear graph
- 4f Area under a graph counting squares
- 5a Measure angles
- 5b 2D diagrams of 3D objects

Atomic Structure Working Scientifically:

- 1.1 Use a variety of models to solve problems, make predictions and develop explanations
- 1.2 Use a variety of models to solve problems, make predictions and develop explanations
- 1.4 Explain everyday technological applications of science
- 1.5 Evaluate risks
- 1.6 Peer review and communicating results
- 4.1 Use scientific vocabulary, terminology and definitions
- 4.4 Use prefixes and powers of ten

Atomic Structure Maths Skills:

- 1b Recognise and use expressions in standard form
- 1c Use ratios, fractions and percentages
- 3c Use algebraic equations with appropriate units
- 3d Solve simple algebraic equations
- 4a Translate information between graphical and numerical forms

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Energy Working Scientifically:

- 1.2 Use a variety of models to solve problems, make predictions and develop explanations
- 1.4 Explain everyday and technological applications of science
- 3.5 Interpreting observations and other data
- 4.3 Use SI units
- 4.4 Use prefixes and powers of ten
- 4.5 Interconvert units
- 4.6 Significant Figures

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Energy changes in systems RP
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Energy Maths Skills

- 1a Use Decimals
- 1c Use ratios, fractions and percentages
- 2c Frequency tables, bar charts and histograms
- 3b Change the subject of an equation
- 3c Use algebraic equations with appropriate units
- 4a Translate information between graphical and numerical forms

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Density of materials RP
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Particle Model Maths Skills:

- 1a Recognise and use expressions in decimal form
- 1b Recognise and use expressions in standard form
- 1c Use ratios, fractions and percentages
- 3b Change the subject of an equation
- 3c Substitute numerical values into equations and convert units as required
- 3d Solve simple algebraic equations
- 4a Translate information between graphical and numeric form

Particle Model Working Scientifically:

- 1.1 Use a variety of models to solve problems, make predictions and develop explanations
- 1.2 Use a variety of models to solve problems, make predictions and develop explanations
- 1.4 Explain everyday technological applications of science
- 1.5 Evaluate risks
- 3.5 Interpreting observations and other data
- 4.1 Use scientific vocabulary, terminology and definitions
- 4.4 Use prefixes and powers of ten

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Electricity

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Resistance Required Practical
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Electricity Maths Skills:

- 1c Use ratios, fractions and percentages
- 3b Change the subject of an equation
- 3c Substitute numerical values into equations and convert units as required
- 3d Solve simple algebraic equations
- 4c Plot 2 variables from experimental data
- 4d Determine the slope and intercept of a linear graph
- 4e Draw curved graphs and calculate tangents

Electricity Working Scientifically :

- 1.2 Use a variety of models to solve problems, make predictions and develop explanations
- 1.4 Explain everyday technological applications of science
- 1.5 Evaluate risks
- 4.5 Interconvert units