

Department Curriculum and Assessment Outline

Department: Science Year Group: 10 Teaching, learning and assessment during the course: Physics (**Combined**)

Timing (Weeks, half terms)	Unit Title (as applicable)	Key Question(s) e.g. Why do we need maps and how do we use them? How do quest stories work?	How will we know that pupils can answer the key question(s)? Data that will inform attainment grade	Key Themes of the unit e.g. grammar, processes, events, styles
Autumn 1	P1 Motion	P1-How can movement be measured, calculated and predicted?	End of unit review End of unit test Activelearn homework Core Practical Write-up	Scalars, vectors, acceleration, equations of motion, re-arranging equations.
Autumn 2	P2 Forces and Motion	P2- Why do objects move?	End of unit review End of unit test Activelearn homework Core Practical Write-up	Newtons Laws, momentum, forces and resultant forces
Spring 1	P3 Energy	P3 – How do we produce and use energy?	End of unit review End of unit test Activelearn homework Core Practical Write-up	Producing, transferring and storing energy.
Spring 2	P4 - Waves	P4 – How do different waves travel	End of unit review End of unit test Activelearn homework Core Practical Write-up	Reflection, refraction, transverse and longitudinal waves
Summer 1	P5 Light and the EM spectrum	P5 – What is the nature of light?	End of unit review End of unit test Activelearn homework Core Practical Write-up	Colour, lenses and uses of different wavelengths.
Summer 2	P6 Radioactivity	P6 – Measuring and quantifying radiation.	End of unit review End of unit test Activelearn homework Core Practical Write-up	Nuclear physics, fission and fusion

Department Curriculum and Assessment Outline

Department: Science

Year Group: 11

Teaching, learning and assessment during the course: Physics (**Combined**)

Timing (Weeks, half terms)	Unit Title (as applicable)	Key Question(s) e.g. Why do we need maps and how do we use them? How do quest stories work?	How will we know that pupils can answer the key question(s)? Data that will inform attainment grade	Key Themes of the unit e.g. grammar, processes, events, styles
Autumn 1	P8 Forces Doing their work P7 Astronomy	P7 – the organisation and structure of the universe P8 – What is work and power? P9 - How do forces influence the environment?	End of unit review End of unit test Activelearn homework Key Practical Write-up	P7 - Solar system, structure of the universe P8 Work and power
Autumn 2	P9 Electricity and Circuits	P9 – what is the nature of electricity	End of unit review End of unit test Activelearn homework Key Practical Write-up	P9 – Current, Voltage, Resistance
Spring 1	P10 Magnetism and the motor effect P11 Electromagnetic induction	P10 – What is the nature of magnetism? P11 – How can electromagnetism be used?	End of unit review End of unit test Activelearn homework Key Practical Write-up	P10 – Magnetic fields, electromagnetism P11 – Generating electricity, generating movement, induction.
Spring 2	P12 Particle model P13 Forces and matter	P12 – how is matter organised?	End of unit review End of unit test Activelearn homework	P12 – Changes of state, energy transfers and energy states, pressure P13 – Materials, up thrust



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		P13 – How do forces and matter interact?	Key Practical Write-up	
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Department Curriculum and Assessment Outline

Department: Science

Year Group: 10

Teaching, learning and assessment during the course: Physics (**Separate**)

Timing (Weeks, half terms)	Unit Title (as applicable)	Key Question(s) e.g. Why do we need maps and how do we use them? How do quest stories work?	How will we know that pupils can answer the key question(s)? Data that will inform attainment grade	Key Themes of the unit e.g. grammar, processes, events, styles
Autumn 1	P1 Motion	P1-How can movement be measured, calculated and predicted?	End of unit review End of unit test Activelearn homework Key Practical Write-up	Scalars, vectors, acceleration, equations of motion, re-arranging equations.
Autumn 2	P2 Forces and Motion	P2- Why do objects move?	End of unit review End of unit test Activelearn homework Key Practical Write-up	Newtons Laws, momentum, forces and resultant forces
Spring 1	P3/4 Energy and Waves	P3 – How do we produce and use energy? P4 – How do different waves travel	End of unit review End of unit test Activelearn homework Key Practical Write-up	P3 – Producing, transferring and storing energy. P4- Reflection, refraction, transverse and longitudinal waves
Spring 2	P5 Light and the EM spectrum	P5 – What is the nature of light?	End of unit review End of unit test Activelearn homework Key Practical Write-up	Colour, wave particle duality, uses of the EM spectrum
Summer 1	P7 Astronomy	P7 – the organisation and	End of unit review End of unit test Activelearn homework	Solar system, structure of the universe

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		structure of the universe	Key Practical Write-up	
Summer 2	P6 Radioactivity	P6 – How can radiation be measured and used safely?	End of unit review End of unit test Activelearn homework Key Practical Write-up	Nuclear Physics, Fission, Fusion and radiation safety.

Department Curriculum and Assessment Outline

Department: Science **Year Group:** 11 **Teaching, learning and assessment during the course: Physics (Separate)**

Timing (Weeks, half terms)	Unit Title (as applicable)	Key Question(s) e.g. Why do we need maps and how do we use them? How do quest stories work?	How will we know that pupils can answer the key question(s)? Data that will inform attainment grade	Key Themes of the unit e.g. grammar, processes, events, styles
Autumn 1	P8 Forces Doing their work P9 Forces and their effects	P8 – What is work and power? P9 - How do forces influence the environment?	End of unit review End of unit test Activelearn homework Key Practical Write-up	P8 Work and power P9 Scalars, vectors, acceleration, equations of motion, re-arranging equations.
Autumn 2	P10 Electricity and Circuits P11 Static Electricity	P10 – what is the nature of electricity P11 – How does electricity interact with nature?	End of unit review End of unit test Activelearn homework Key Practical Write-up	P10 – Current, Voltage, Resistance P11 – Electrical safety, uses of electricity, fields
Spring 1	P12 Magnetism and the motor effect P13 Electromagnetic induction	P12 – What is the nature of magnetism? P13 – How can electromagnetism be used?	End of unit review End of unit test Activelearn homework Key Practical Write-up	P12 – Magnetic fields, electromagnetism P13 – Generating electricity, generating movement, induction.
Spring 2	P14 Particle model P15 Forces and matter	P14 – how is matter organised? P15 – How do forces and matter interact?	End of unit review End of unit test Activelearn homework Key Practical Write-up	P14 – Changes of state, energy transfers and energy states, pressure P15 – Materials, up thrust

Department Curriculum and Assessment Outline

Department: **Physics** Year Group: **12** Teaching, learning and assessment during the course:

Timing (Weeks, half terms)	Unit Title (as applicable)	Key Question(s) e.g. Why do we need maps and how do we use them? How do quest stories work?	How will we know that pupils can answer the key question(s)? Data that will inform attainment grade	Key Themes of the unit e.g. grammar, processes, events, styles
Autumn 1 + 2	5 : Nature of light 3 : Electricity	5 : What is light, how does it travel and how can we determine it's properties. 3 : What is the nature of electricity and how can we use it?	End of unit review End of unit test Core practical Write up(s).	5 : Reflection, refraction, transverse and longitudinal waves, diffraction, T.I.R, critical angle, photons, momentum. 3 : Current, Power, Voltage, Resistance, electro motive force, internal resistance, resistivity.
Spring 1	2 : Mechanics 10 : Space	2 : How and why do object move? 10 : How and why has the universe evolved to its current state?	End of unit review End of unit test Core practical Write up(s).	2 : Scalars, vectors, acceleration, equations of motion, energy types and transfers, momentum, re- arranging equations. 10 : Nature of the universe, cosmology, organisation of the universe.
Spring 2	2 : Mechanics 13 : Oscillations	2 : How and why do objects move? 13 : Solutions and implications of $F=-kx$	End of unit review End of unit test Core practical Write up(s).	2: Scalars, vectors, acceleration, equations of motion, energy types and transfers, momentum, re- arranging equations. 13 : Simple harmonic motion, free and forced oscillations, angular velocity.
Summer 1 +2	9 : Thermodynamics 12 : Gravitational Fields. + 4: Materials	9 : Calculation, use and distribution of internal energy.	End of unit review End of unit test Core practical Write up(s).	9 : Kinetic, internal energy, Weins law, absolute zero and emissions, pressure volume of ideal gas. 12 : Mass and fields of force, derivation of equations, gravitation. 4 : Stress, strain, Young's modulus elastic strain.



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		12 : How and why do mass and gravity interact? 4 : How and why do materials behave?		
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Department Curriculum and Assessment Outline

Department: **Physics** Year Group: **13** Teaching, learning and assessment during the course:

Timing (Weeks, half terms)	Unit Title (as applicable)	Key Question(s) e.g. Why do we need maps and how do we use them? How do quest stories work?	How will we know that pupils can answer the key question(s)? Data that will inform attainment grade	Key Themes of the unit e.g. grammar, processes, events, styles
Autumn 1 + 2	6 : Further mechanics 7 : Electric fields	6 : How and why do objects move and interact? 7 : How do electric charges and fields interact?	End of unit review End of unit test Core practical Write up(s).	6 : Scalars, vectors, acceleration, equations of motion, collisions, angular velocity, momentum, re- arranging equations 7 : Charge, field, inverse square law, capacitors
Spring 1	11 : Nuclear Radiation 7 : Magnetic Fields	11 : How and why do particles decay? 7 : How do electric and magnetic fields interact?	End of unit review End of unit test Core practical Write up(s).	11 : binding energy, decay, half life, activity, fission, fusion 7 : Magnetism, flux density, flux linkage, force in a wire, e.m.f
Spring 2	12 : Gravitational Fields 8 : Nuclear and Particle Physics	12 : How and why do mass and gravity interact? 8 : What is the composition of nature?	End of unit review End of unit test Core practical Write up(s).	8 : Baryons, mesons, leptons, charge, electron volts 12 : Mass and fields of force, derivation of equations, gravitation.
Summer 1	Revision			



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What is each attainment grade based on?

	7	8	9	10	11	12	13
Mid Term Autumn							
Report Autumn							
Mid Term Spring							
Report Spring							
Mid Term Summer							
Report Summer							