

Year 7

Ark Mastery Science curriculum year 7

	HT1 (7 weeks)	HT2 (8 weeks)	HT3 (7 weeks)	HT4 (5 weeks)	HT5 (6 weeks)	HT6 (8 weeks)
YEAR 7	<p>Each point is roughly a 100 min.</p> <p>B1.1 Cells -Prior Knowledge + Asking Questions -Risks and Hazards -Animal and Plant Cells -Maths lesson 1 Microscopes -Maths lesson 2 Writing Methods -Observing Cells Specialised cells and Organising Cells - Feedback lesson</p> <p>C1.1 Particles -Prior Knowledge + Particle Model -Properties of Matter + Heating -Boiling and Condensing -Diffusion + variables -Investigating Diffusion -Gas Pressure -Maths lesson 3 + density Feedback lesson</p>	<p>Each point is roughly a 100 min lesson.</p> <p>P1.1 Forces -Prior Knowledge + Forces -Balanced/Unbalanced + Resultant Forces -ML4 + Interaction Pairs -Springs and Deformation -Drag and Friction -Investigating Friction -Feedback lesson</p> <p>B1.2 Reproduction -Prior Knowledge + A/sexual reproduction -Puberty and the Reproductive system -The menstrual cycle + Embryo development -Plant reproduction -Maths lesson 5 + Seed dispersal - Feedback lesson</p> <p>Week 14 assessment week KS3</p>	<p>Each point is roughly a 100 min lesson.</p> <p>C1.2 Atoms, elements, compounds -Maths lesson 6 + Prior Knowledge -Elements and Atoms -Periodic Table + Non-/Metals -Reactivity of Metals -Compounds + Naming Compounds -Making Iron sulfide + Chemical Formulae -Feedback lesson</p> <p>P1.2 Space -Prior Knowledge + mass and weight -Gravity + Keeping in orbits -Maths lesson 7 + Solar System -Satellites -Seasons and Eclipses -Feedback lesson</p>	<p>Each point is roughly a 100 min lesson.</p> <p>B1.3 Interdependence -Prior Knowledge + Ecosystems -Sampling + Investigation -Maths lesson 8 + Plant distribution -Plant distribution analysis -Food chains, webs and Trophic Level -A-/biotic + competition - Feedback lesson</p> <p>C1.3 Mixtures -Prior Knowledge + Mixtures -Solutions -Melting, Boiling points + purity -Separating Mixtures + fractional distillation -Crystallisation + Filtration -Chromatography -Feedback lesson</p>	<p>Each point is roughly a 100 min lesson.</p> <p>P1.3 Energy -Prior Knowledge + Energy -Energy Stores + transfers -Energy in Food Wasted Energy + Efficiency -Heat, temperature + Thermal Energy -Temperature and Particles -Conductors and insulators -Feedback lesson</p>	<p>Revise for assessment</p> <p>Circuits is not assessed in the final assessment so this unit should be taught after it.</p> <p>P1.4 Circuits -Prior Knowledge + Circuit Models -Series and Parallel Circuits -Current + Components -Measuring P.D. and Current -Drawing Conclusions -Feedback lesson</p> <p>Week 34 and 35 assessment weeks</p>

		Assessment DC1 Cells, Particles and Forces		Internal data drop week 27		Assessment DC2 Cells, Particles and Forces, Reproduction, atoms elements compounds, Space, Interdependence, Mixtures, Energy
Enrichment	STEM Ambassadors			BRITISH SCIENCE WEEK events		

Year 8

Ark Mastery Science curriculum year 8 2023-2024

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

	HT1 (7 weeks)	HT2 (8 weeks)	HT3 (7weeks)	HT4 (5 weeks)	HT5 (6weeks)	HT6 (8 weeks)
YEAR 8	<p>Each point is roughly a 100 min.</p> <p>B2.1 Tissues and organs (Physiotherapist) -Careers + Prior knowledge review - skeletal and muscular systems + investigating muscle strength - Respiratory system and mechanisms of breathing -Gas exchange - medicinal and recreational drugs - Organ Donation + feedback lesson</p> <p>C1.3 Mixtures (pharmacist) -Careers + prior knowledge -Mixtures + Solutions -Melting, Boiling points + purity -Separating Mixtures + fractional distillation -Crystallisation + Filtration -Chromatography -Feedback lesson</p>	<p>Each point is roughly a 100 min.</p> <p>P2.4 Light (Light engineer) -Careers + Prior knowledge - Light + ML 14 angles - Reflection -Refraction + observing refraction - Lenses + colour - Feedback lesson</p> <p>B2.4 Nutrition (Health Scientist) -Careers + Prior Knowledge -Diet and Nutrition -Food Tests + Food Sampling -The Digestive System -Small Intestine + Models in the Digestive System -Enzymes + Digestive Enzymes -Investigating Amylase -Plant Nutrition -Feedback lesson</p>	<p>Each point is roughly a 100 min.</p> <p>C2.2 Changing substances (Analytical chemist) -Careers and prior knowledge - chemical changes and conservation of mass -Introduction to balancing equations and balancing -Oxidation and reduction and burning magnesium -Reactions of acids -Testing for gases - feedback lesson</p> <p>P1.3 Energy -Prior Knowledge + Energy -Energy Stores + transfers -Energy in Food Wasted Energy + Efficiency -Heat, temperature + Thermal Energy -Temperature and Particles -Conductors and insulators -Feedback lesson</p>	<p>Each point is roughly a 100 min.</p> <p>B1.3 Interdependence (Ecologist) - Careers +Priori Knowledge -Ecosystems -Sampling + Investigation -Maths lesson 8 + Plant distribution -Plant distribution analysis -Food chains, webs and Trophic Level -A-/biotic + competition - Feedback lesson</p> <p>Internal data drop week 27</p>	<p>Each point is roughly a 100 min.</p> <p>P1.2 Space (Astronomer) -Careers and prior knowledge - mass and weight -Gravity + Keeping in orbits -Maths lesson 7 + Solar System -Satellites -Seasons and Eclipses -Feedback lesson</p> <p>Start unit B2.3 Life Diversity (Evolution scientist) - Careers + Prior Knowledge -Variation</p>	<p>Each point is roughly a 100 min.</p> <p>-ML10 + inheritance -ML11 + Artificial Selection -Natural Selection + evolution -Human Impact on Natural Selection - maths lesson fractions and percentages -Feedback lesson</p> <p>P3.3 Sound (sound engineer) -careers + prior knowledge -Types of waves and wave properties -ML20 Derived properties + velocity of waves -Refraction and reflection - investigation waves -using waves - Feedback lesson</p>

Enrichment		Week 14 assessment week KS3				Week 34 and 35 assessment weeks
		ASSESSMENT- DC1 Tissues organs and mixtures			ASSESSMENT- DC2 Tissues, mixtures, light, nutrition, changing substances, Energy, interdependence	
				BRITISH SCIENCE WEEK events		

Year 9

2023-2024 Y9 LTP Science

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

	HT1 (7 weeks)	HT2 (8 weeks)	HT3 (7 weeks)	HT4 (5 weeks)	HT5 (6 weeks)	HT6 (8 weeks)
YEAR 9	<p>Weeks 1-7 Continue KS3 Each point is roughly a 100 min.</p> <p>P1.4 Circuits (Electrician) -Careers + Prior Knowledge - Circuit Models -Series and Parallel Circuits -Current + Components -Measuring P.D. and Current -Drawing Conclusions -Feedback lesson</p> <p>P2.2 Magnetism (Electrician) -Careers + Prior knowledge -Magnetism + magnetic fields -Electromagnets -Investigating electromagnets and analysis</p>	<p>Weeks 8-15 Continue KS3 Each point is roughly a 100 min.</p> <p>C3.1 Periodic table (Periodic table scientist) -Careers +prior knowledge -Maths lessons standard form and order of magnitude -Atoms and electron configuration -Isotopes and understanding the atom -The periodic table - Noble gases and alkali metals -Halogens + reaction of halogens -Transition metals Feedback lesson</p>	<p>Weeks 16-21 GCSE BIOLOGY PAPER 1 Chapter 1: Cells (F7/H7) Chapter 2: Cell division (F5/H5)</p> <p>Note: Included in lesson time is Revision/ catch up, Kerboodle test and green pen (input into tracker after every unit) 1 lesson.</p>	<p>Weeks 23-27 Chapter 3: Organisation & digestion (F6/H6) Chapter 4: Organising plants & animals (F7/H7)</p> <p>Internal data drop week 27</p>	<p>Weeks 27- 32 Complete Chapter 4 Chapter 5: Communicable diseases (F3/H3) Chapter 6: Preventing diseases (F3/H3) Chapter 7: Non-communicable diseases (F3/H3)</p>	<p>Weeks 33-37 Chapter 8: Photosynthesis (F4/H5) Chapter 9: Respiration (F5/H5)</p> <p>Week 38 Revision & B1 mock exam</p> <p>Week 34 and 35 assessment weeks</p>

	-Earths magnetic field -Feedback lesson	Week 14 assessment week KS3				
		ASSESSMENT - DC1 GCSE TRILOGY BIOLOGY PART PAPER				ASSESSMENT – DC2 GCSE TRILOGY BIOLOGY PAPER 1
Enrichment				BRITISH SCIENCE WEEK events		

Key stage 3 core words

KS3 Units	Core Words
B1.1	Magnification, Specialised, Nucleus
C1.1	Concentration, Collide, Diffusion
P1.1	Force, Magnetic, Resultant
B1.2	Gametes, Hormone, Germination
C1.2	Atom, Element, Compound
P1.2	Accelerate, Mass, Gravity
B1.3	Photosynthesis, Ecosystem, Interdependence
C1.3	Chromatography, Insoluble, Pure
P1.3	Energy, Thermal Dissipate
P1.4	Component, Current, Voltage

KS3 Units	Core Words
B2.1	Cilia, Diagnose, Respiration
C2.1	Neutralisation, Indicator, Base
P2.1	Gradient, Acceleration, Distance
B2.2	Adaptation, Rate, Transpiration
C2.2	Combustion, Oxidation, Reactant
P2.2	Current, Electromagnet, Molten
B2.3	Evolution, Fossil, Mutation

C2.3	Atmosphere, Decomposer, Extrusive
P2.3	Component, Resistance, Power
B2.4	Carbohydrase, Enzyme, Tissue
P2.4	Density, Spectrum, Luminous

B3.1	Antibiotic, Benign, Organelle
C3.1	Electron, Ion, Isotopes
P3.1	Deceleration, Scalar, Vector
B3.2	Biodiversity, Eutrophication, Habitat
C3.2	Crystallisation, Molecule, Mixture
P3.2	Convection, Radiation, Vacuum
B3.3	Allele, Heterozygous, Homozygous
C3.3	Displacement, Potable, Renewable
P3.3	Amplitude, Frequency, Longitudinal
P3.4	Alternating, Charge, Series

Year 10

2023-2024 Y10 LTP Science

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

	HT1 (7 week)	HT2 (8 weeks)	HT3 (7 weeks)	HT4 (5 weeks)	HT5 (6 weeks)	HT6 (8 weeks)
YEAR 10	Weeks 1-7 Chemistry 1 Chapter 1: Atomic structure (F6/H6) Chapter 2: The Periodic Table (F4/H4) Chapter 3: Structure & Bonding (F5/H5) Chapter 4: Chemical calculations (F3/H5) may run over for H. Note: included in the lesson number is the time for Revision/ catch up, Kerboodle test and green pen 1 lesson. (input into tracker after every unit)	Weeks 8-15 Chapter 5: Chemical changes (F7/H7) Chapter 6: Electrolysis (F4/H4) Chapter 7: Energy change (F3/H4) Full C1 practice paper and green pen.	Weeks 16-17 Week 16 revision B1 C1 Week 17 1 week mocks Week 18-22 Chapter 1: Conservation & Dissipation of energy (F6/H6) Chapter 3: Energy resources (F3/H3)	Weeks 23 - 27 Chapter 2: Energy transfer (F5/H5) Chapter 4: Electric circuits (F6/H6) Chapter 5: Electricity in the home (F3/H3)	Weeks 28 - 33 Chapter 6: Molecules and matter (F3/H3) Chapter 7: Radioactivity (F4/H4) Chapter 10: Chemical analysis (F2/H2) Chapter 11: Earth's Atmosphere (F2/H2) Revision for C1 and P1 if completed all units above	Weeks 34-41 Week 34 Week 35 Revision physics 1 and chemistry 1 Week 36-37 mocks Week 38-39 Work experience Week 40 Finish chapter 10, 11
			ASSESSMENT – DC1 CHEMISTRY PAPER 1 BIOLOGY PAPER 1	Internal data drop		ASSESSMENT - DC2 PHYSICS 1

Enrichment	Skills 1 x 50 mins per week Week 1-7 Skills	Required Practical's B1 1 x 50 mins per week Weeks 8 -15 Microscopes Osmosis Food tests Enzymes Photosynthesis Transpiration Revision B1 Can be done in any order	Required Practical's C1 and revision 1x 50 mins per week Weeks 16-17 Mock revision C1 / B1 Weeks 18-22 Making salts- using a metal oxide Making salts- using a metal carbonate Electrolysis Endo Exo using acid and an alkali Endo and exo using metals powders and acid Endo and exo using water and potassium nitrate	Chemistry paper 1 revision Weeks 23-27 Revise chemistry paper 1	Required Practical's P1 and revision 1x 50 mins per week Specific heat capacity Resistance IV characteristics Density	Revision
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Year 11

2023-2024 Y11 Curriculum LTP: Science

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

	HT1 (7 weeks)	HT2 (8 weeks)	HT3 (7 weeks)	HT4 (5 weeks)	HT5 (6 weeks)	HT6 (8 weeks)
YEAR 11	Weeks 1-5 <u>Chemistry 2</u> Chapter 8: Rates (F 3/ H4) Chapter 10: Chemical analysis (F2/H2) Chapter 9: Crude oil & fuels (F2/H2) Chapter 11: Earth's Atmosphere (F2/H2) Chapter 12: Earth's resources (F2/H2) Week 6 and 7 <u>Physics 2</u> Chapter 8: Forces in balance (F/H 2) Chapter 9: Motion (F/H 2)	Weeks 8-11 Chapter 10: Force and motion (F3/H4) Chapter 11: Wave properties (F2/H3) Chapter 12: Electromagnetic waves (F/H2) Chapter 13: Electromagnetism (F1/H2) Revision for C2 and P2 F = 4 L revision H= 1L revision Week 12 and 13 Mock exams 2 weeks <u>Biology 2</u> Chapter 11: Hormonal control (F2/H3)	Weeks 16-22 Chapter 10: Nervous System (F2/H2) Chapter 12: Reproduction (F3/H3) Chapter 13: Variation (F2/H2) Chapter 14: Genetics (F2/H2) Chapter 15: Adaptations (F3/H3) Chapter 16: Organising an ecosystem (F2/H2) Chapter 17: Biodiversity and ecosystems (F3/H3) Revision B2 F 1L H1L	Weeks 23-27 Mock exams week 23 and 24 Week 25 B1 revision Week 26 C1 revision Week 27 P1 revision	Weeks 28 -33 Week 28 C2 revision Week 29 P2 revision Week 30 B1 revision Exams start Week 31 10 th May Biology paper 1 Week 32 17 th May Chemistry paper 1 Week 33 22 nd May Physics paper 1	Weeks 34-41 Week 34 7 th June Biology paper 2 Week 35 11 th June Chemistry paper 2 14 th June Physics paper 2
	Practice chemistry mock (F)	ASSESSMENT – DC1 CHEMISTRY PAPER 2 PHYSICS PAPER 2		ASSESSMENT – DC2 BIOLOGY PAPER 2 BIOLOGY PAPER 1 CHEMISTRY PAPER 1 PHYSICS PAPER 1		

Enrichment	<p>Required Practical's 1 x 50 mins per week</p> <p>Week 1 skills Week 2- 7 Microscopes, Osmosis, Food tests, Enzymes , Photosynthesis, making salts</p>	<p>Required Practical's 1 x 50 mins per week</p> <p>Week 8- 10, 14 Electrolysis, Endothermic/ exothermic, specific heat capacity, resistance, IV characteristics Week 12: mock revision C2/P2 Week 13: mock revision C2/P2</p>	<p>Required Practical's 1x 50 mins per week</p> <p>Week 16-21 Density, Rate of reaction, chromatography, potable water, Reaction time, Field work</p>	<p>Required Practical's 1x 50 mins per week</p> <p>Week22 – 27 Hooke's law, waves, Infrared radiation Week23: mock revision Week 24: mock revision Week 25: Acceleration</p>	<p>Revision</p> <p>Week 28: C2 Week 29: P2 Week 30: B1 Week 31:B1 Week 32:C1 Week 33:P1</p>	<p>Revision</p> <p>Week 34: C2 Week 35: P2</p>
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GCSE Combined Science Core words

These words must be taught explicitly within the units of work using various techniques

B1 Magnification Resolution Diffusion Osmosis Eukaryote Prokaryote	B2 Mitosis Chromosomes Differentiation Meristem	B3 Cell Tissue Organ Enzyme	B4 Transpiration Meristem Mesophyll Stomata	B5 Communicable Pathogen Protist	B6 Vaccination Antibody Phagocytosis Antigen	B7 Cancer Preclinical Clinical Antibiotic Efficacy	B8 Photosynthesis Endothermic HT Economics	B9 Aerobic Anaerobic Respiration Exothermic Metabolism
C1 Atom Chromatography Distillation Filtration Crystallisation	C2 Periodic Alkali Halogen Noble	C3 Aqueous Covalent Allotrope Delocalised Ionic	C4 Concentration Mass Volume H mole	C5 Displacement Oxidation Reduction Neutralisation Alkali Acid	C6 Electrolysis Cathode Anode	C7 Endothermic Exothermic Activation energy		
P1 Energy Dissipation Efficiency Power	P2 Thermal conductivity Specific heat capacity Conduction	P3 Biofuels Fossil fuels Hydroelectricity Renewable	P4 Charge Current Potential difference Resistance	P5 Frequency Earth Fuse	P6 Density Boiling Melting Latent heat State of matter	P7 Radioactivity Ionising Half-life		
B10 Neurone Reflex action	B11 Endocrine Diabetes Glycogen Glucose Ovulation Contraception Testosterone Oestrogen HT Glucagon	B12 Gamete Chromosome Gene Allele Dominant Recessive Homozygous Heterozygous Genotype phenotype	B13 Mitosis Meiosis Genome	B14 Variation Mutation Species Classification Extinction Evolution	B15 Ecosystem Community Population Biotic Abiotic Adaptations Quadrat	B16 Producer Consumer Condensation Evaporation Precipitation Transpiration Percolation	B17 Biodiversity Pollution Deforestation	

C8 Equilibrium Reversible Catalyst	C9 Alkane Alkene Hydrocarbon Viscosity Combustion Cracking	C10 Formulation Chromatography Solubility	C11 Atmosphere Photosynthesis Pollution Greenhouse gases	C12 Finite Renewable Sedimentation Potable Desalination				
P8 Displacement Vector Scalar Resultant HT parallelogram	P9 Gradient Velocity Acceleration Deceleration	10 Weight Terminal velocity Extension HT momentum Inertia	P11 Longitudinal Transverse Oscillate Frequency HT Reflection Refraction	P12 Electromagnetic Ionising frequency Wavelength	P13 Magnetic Solenoid Electromagnet Pole HT Magnetic flux			

Year 11

Triple Science

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

	HT1 (7 weeks)	HT2 (8 weeks)	HT3 (7weeks)	HT4 (5 weeks)	HT5	HT6
YEAR 11	<p>Weeks 1-7 Chapter 12: Homeostasis in action (3)</p> <p>Chapter 13: Reproduction (5)</p> <p>Chapter 14: Variation and evolution (3)</p> <p>Chapter 15: Genetics and evolution (4)</p>	<p>Weeks 8-9 Chapter 15: Genetics and evolution 1 x lesson left</p> <p>Chapter 16: Adaptation, interdependence and competition (3)</p> <p>Weeks 10-11 Mock exam revision biology paper 1</p> <p>Weeks 12-13 mock exams</p> <p>Week 14 Chapter 17: Organising an ecosystem (4)</p>	<p>Weeks 16-19 Chapter 17: Organising an ecosystem 2 x lessons left</p> <p>Chapter 18: Biodiversity and ecosystems (6)</p> <p>Weeks 20-22 Biology paper 2 revision</p>	<p>Weeks 23-27 Mock exams week 23 and 24</p> <p>Week 25 B1 revision Week 26 B1 revision Week 27 B1 revision</p>	<p>Weeks 28 -33 Week 28 B2 revision Week 29 B2 revision Week 30 B2 revision</p> <p>Exams start Week 31 10th May Biology paper 1</p>	<p>Weeks 34-41 Week 34 7th June Biology paper 2</p>

		Mock exams: Biology paper 1		Mock exams: Biology paper 2		
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2023-2024 Y11 LTP Single Science - CHEMISTRY

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

Y10	HT1 (7 weeks)	HT2 (8 weeks)	HT3 (7 weeks)	HT4 (5 weeks)	HT5	HT6
TOPIC	CHEMISTRY PAPER 2 -C8 Rates and Equilibrium -C9: Crude oil and fuels C10: Organic reactions	CHEMISTRY PAPER 2 -C11 Polymers -C12 Chemical Analysis -Mock exam preparation -Mock exams – 2 weeks	CHEMISTRY PAPER 2 C13 The Earth's Atmosphere C14 The Earth's resources C15 Using our resources	C1 revision C2 revision	C2 revision Exams start 10 th May	
KEY PIECE	RP Investigating the effect of concentration on rates of reaction	RP: Calculate R_f values RP: Use chemical tests to identify unknown compounds	RP: Purify and test water			
ASSESSMENT		ASSESSMENT DC1 Mock Exams – Chemistry Paper 1		ASSESSMENT DC2 Mock exams – Chemistry paper 2		

Enrichment

2021-2022 Y10 LTP GCSE Physics

'To be curious about the world around us, to learn through scientific discovery, and to be the scientists and innovators of the future'

	HT1	HT2	HT3	HT4	HT5	HT6
YEAR 10	<u>PHYSICS PAPER 2</u> Chapter 12: Waves Chapter 13: Electromagnetic waves	<u>PHYSICS PAPER 2</u> Chapter 14: Light Chapter 15: Electromagnets	<u>PHYSICS PAPER 2</u> Chapter 16: Space	P1 Revision P2 Revision	P2 Revision Exams start 10 th May	
	RP 8- Measure the frequency, wavelength and speed of waves in a ripple tank and waves in a solid.	KEY PIECE: RP 9- Investigate reflection of light by different types of surfaces and refraction of light by different substances.		KEY PIECE: Past papers		

Assessment		ASSESSMENT DC1 Mock exams PHYSICS PAPER 1		ASSESSMENT DC2 Mock exams PHYSICS PAPER 2		