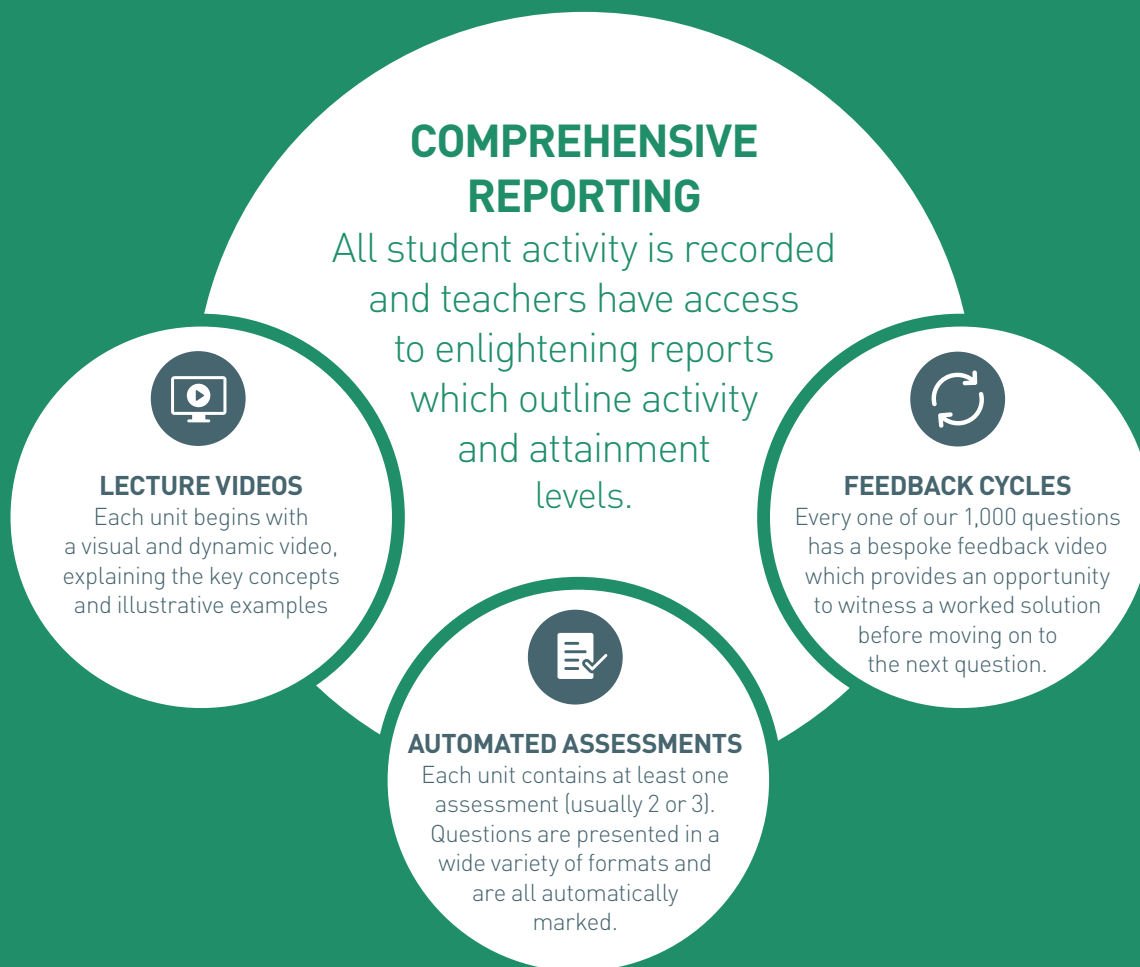


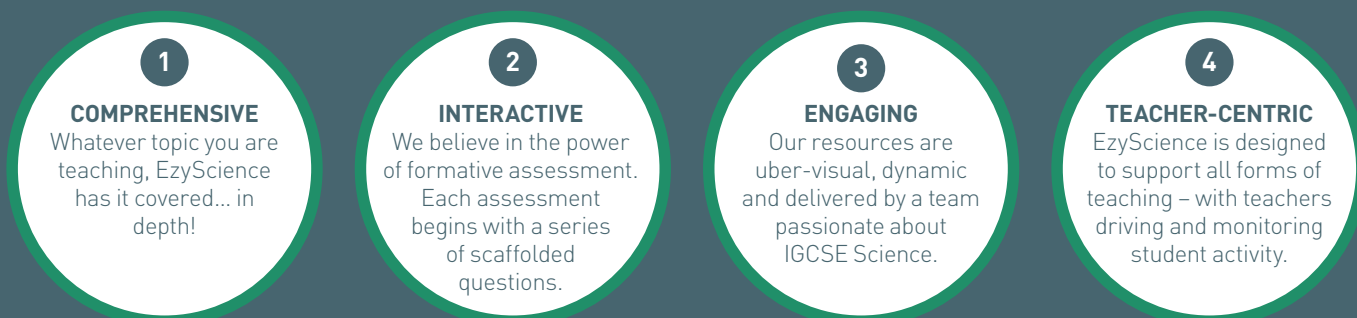
# GCSE COURSE GUIDE

**EzyScience provides full content  
coverage including all required practicals**

# OUR MODEL



## WHEN CREATING EZYSCIENCE, WE WANTED EVERY VIDEO AND ASSESSMENT TO ADHERE TO 4 KEY PRINCIPLES:



# POTENTIAL USES

EzyScience is designed to put teachers in charge and be used to support a wide variety of approaches. Here are just some examples:



## **AUTOMATED ASSESSMENTS**

With over 200 assessments, covering the entire course, you can set plenty of work every week as you teach the syllabus.



## **FLIPPED LEARNING**

Use EzyScience to support flipped classrooms and blended learning. Know for sure whether or not students have completed their preparations.



## **MONITORING & INTERVENTION**

Use our comprehensive reports to monitor student completion and identify problem areas to focus on in class.



## **PARENTS' EVENINGS**

Print off our automated reports and hand them out at Parents' Evenings. Easy to evidence student effort and attainment levels.



## **REVISION TOOL**

EzyScience is the ideal revision tool. When exams approach, students have 24/7 access to resources covering every single topic in depth.

# IGCSE BIOLOGY – COURSE OUTLINE

## SECTION 1 VARIETY OF LIVING ORGANISMS

## SECTION 2 STRUCTURE AND FUNCTIONS

EX	= Experiment
L	= Lecture Video
A	= Assessment
BO	= Biology only

### Module 1 - Variety of Living Organisms

<b>1.1</b>	Characteristics of Living Organisms	L
<b>1.1a</b>	Characteristics of Living Organisms	A
<b>1.2</b>	Variety of Living Organisms	L
<b>1.2a</b>	Variety of Living Organisms	A

### Module 1 - Level of Organisation and Cell Structure

<b>1.1.1</b>	Levels of Organisation	L
<b>1.1.2</b>	Cell Structure	L
<b>1.1a</b>	Organisation	A
<b>1.2.1</b>	Cell Specialisation and Differentiation	L
<b>1.2.2</b>	Stem Cells	L
<b>1.2a</b>	Cell Differentiation and Stem Cells	A

### Module 2 - Biological Molecules

<b>2.1.1</b>	Carbohydrates, Proteins and Lipids	L
<b>2.1.2</b>	Enzymes	L
<b>2.1a</b>	Important Biological Molecules	A
<b>2.2</b>	Food Tests	EX
<b>2.2a</b>	Food Tests	A
<b>2.3</b>	The Effect of Temperature on Enzymes	EX
<b>2.3a</b>	The Effect of Temperature on Enzymes	A
<b>2.4.1</b>	The Effect of pH on Enzymes	EX BO
<b>2.4.2</b>	The Effect of pH on Enzymes	EX BO
<b>2.4.3</b>	The Effect of pH on Enzymes	EX BO
<b>2.4a</b>	The Effect of pH on Enzymes	A BO

### Module 3 - Transport in Cells

<b>3.1.1</b>	Diffusion 1	L
<b>3.1.2</b>	Rate of Diffusion	L
<b>3.1.3</b>	Osmosis	L
<b>3.1.4</b>	Active Transport	L
<b>3.1a</b>	Transport in Cells	A
<b>3.2.1</b>	Investigating Osmosis (Doing the Experiment)	EX
<b>3.2.2</b>	Investigating Osmosis (Analysing the Results)	EX
<b>3.2a</b>	Investigating Osmosis	A

### Module 4 - Nutrition in Plants

4.1.1	The Photosynthesis Reaction	L
4.1.2	The Rate of Photosynthesis	L
4.1a	Photosynthesis	A
4.2.1	Leaf Structure and Photosynthesis	L
4.2.2	Mineral Ions	L
4.2a	Leaf Structure and Mineral Ions	A
4.3.1	Investigating Photosynthesis and Light Intensity	EX
4.3.2	Investigating Photosynthesis and Light Intensity	EX
4.3a	Investigating Photosynthesis and Light Intensity	A
4.4	Investigating the Production of Starch	EX
4.4a	Investigating the Production of Starch	A

### Module 5 - Nutrition in Humans

5.1	Balanced Diets	L
5.1a	Balanced Diets	A
5.2.1	Digestive Enzymes	L
5.2.2	The Human Alimentary Canal	L
5.2a	Digestion	A
5.3	Energy Content of Food	EX BO
5.3a	Energy Content of Food	A BO

### Module 6 - Respiration

6.1	Aerobic and Anaerobic Respiration	L
6.1a	Aerobic and Anaerobic Respiration	A
6.2	Investigating Respiration in Seeds	EX
6.2a	Investigating Respiration in Seeds	A

### Module 7 - Gas Exchange

7.1	Gas Exchange in Flowering Plants	L BO
7.1a	Gas Exchange in Flowering Plants	A BO
7.2	Investigating the Effect of Light on Gas Exchange	EX BO
7.2a	Investigating the Effect of Light on Gas Exchange	A BO
7.3.1	Human Gas Exchange System	L
7.3.2	The Effects of Smoking	L
7.3a	Gas Exchange in Humans	A
7.4	Investigating Breathing Rates in Humans	EX
7.4a	Investigating Breathing Rates in Humans	A

### Module 8 - Transport in Plants

8.1	Transport in Organisms	L
8.1a	Transport in Organisms	A
8.2	The Phloem and Xylem	L
8.2a	The Phloem and Xylem	A
8.3	Transpiration	L BO
8.3a	Transpiration	A BO
8.4	Factors Affecting the Rate of Transpiration	EX BO
8.4a	Factors Affecting the Rate of Transpiration	A BO

### Module 9 - Transport in Humans

9.1	The Blood	L
9.1a	The Blood	A
9.2	The Heart and Blood Vessels	L
9.2a	The Heart and Blood Vessels	A
9.3	Factors Affecting Heart Rate	L
9.3a	Factors Affecting Heart Rate	A
9.4	Coronary Heart Disease	L
9.4a	Coronary Heart Disease	A
9.5	The Immune System	L
9.5a	The Immune System	A
9.6	Vaccination	L BO
9.6a	Vaccination	A BO

### Module 10 - Excretion

10.1	Excretion in Flowering Plants and Humans	L
10.1a	Excretion in Flowering Plants and Humans	A
10.2	The Urinary System	L BO
10.2a	The Urinary System	A BO
10.3	The Kidney	L BO
10.3a	The Kidney	A BO

### Module 11 - Co-Ordination and Response

11.1	Plant Responses	L
11.1a	Plant Responses	A
11.2	Nervous and Hormonal Responses	L
11.2a	Nervous and Hormonal Responses	A
11.3.1	The Nervous System	L
11.3.2	Reflex Arcs	L
11.3a	The Nervous System	A
11.4.1	Eye Structure and Adapting to Light	L
11.4.2	Accommodation and Eye Defects	L
11.4a	The Eye	A
11.5	Temperature Regulation	L
11.5a	Temperature Regulation	A
11.6	Introduction to Hormones	L
11.6a	Introduction to Hormones	A
11.7	Advanced Hormones	L BO
11.7a	Advanced Hormones	A BO

Each unit contains a lecture video and at least 1 (usually 2 or 3) assessments.

## SECTION 3 REPRODUCTION AND INHERITANCE

## SECTION 4 ECOLOGY

EX	= Experiment
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Module 1 - Reproduction		
1.1	Sexual and Asexual Reproduction	L
1.1a	Sexual and Asexual Reproduction	A
1.2	Reproduction in Plants	L
1.2a	Reproduction in Plants	A
1.3	Investigating the Conditions Necessary for Germination	EX
1.3a	Investigating the Conditions Necessary for Germination	A
1.4	Human Reproductive Systems	L
1.4a	Human Reproductive Systems	A
1.5	Meiosis	L
1.5a	Meiosis	A
1.6	The Menstrual Cycle	L BO
1.6a	The Menstrual Cycle	A BO
1.7	The Growth and Development of the Embryo	L
1.7a	The Growth and Development of the Embryo	A
Module 2 - Inheritance		
2.1	DNA and the Genome	L
2.1a	DNA and the Genome	A
2.2	DNA Structure	L BO
2.2a	DNA Structure	A BO
2.3.1	Protein Synthesis	L BO
2.3.2	Mutations	L BO
2.3a	Protein Synthesis and Mutations	A BO
2.4.1	Alleles	L
2.4.2	Genetic Diagrams	L
2.4.3	Sex Determination	L
2.4a	Genetics	A
2.5	Codominance	L
2.5a	Codominance	A
2.6	Variation	L
2.6a	Variation	A
2.7	Evolution	L
2.7a	Evolution	A

Module 1 - Adaptations, Interdependence and Competition		
1.1.1	Communities	L
1.1.2	Abiotic Factors	L
1.1.3	Biotic Factors	L
1.1a	Ecosystems	A
1.2.1	Measuring a Population	EX
1.2.2	The Effect of Trees on a Daisy Population	EX
1.2a	Measuring the Sizes of Populations	A
1.3	Biodiversity	EX
1.3a	Biodiversity	A
1.4	Feeding Relationships	L
1.4a	Feeding Relationships	A
1.5.1	Trophic Levels	L
1.5.2	Pyramids of Numbers and Biomass	L
1.5.3	The Transfer of Biomass	L
1.5a	Biomass	A
Module 2 - Cycles and Biodiversity		
2.1	DNA Structure	L
2.1a	Protein Synthesis	A
2.2	Mutations	L BO
2.2a	Protein Synthesis and Mutations	A BO
2.3	Alleles	L
2.3a	Genetic Diagrams	A
2.4	Sex Determination	L
2.4a	Genetics	A
2.5	Codominance	L
2.5a	Codominance	A
2.6	Variation	L BO
2.6a	Variation	A BO

## SECTION 5 BIOLOGICAL RESOURCES

Module 1 - Food Production		
<b>1.1</b>	Crop Plants	L
<b>1.1a</b>	Crop Plants	A
<b>1.2</b>	Micro-Organisms	L
<b>1.2a</b>	Micro-Organisms	A
<b>1.3</b>	Investigating Anaerobic Respiration in Yeast	EX
<b>1.3a</b>	Investigating Anaerobic Respiration in Yeast	A
<b>1.4</b>	Fish Farming	L BO
<b>1.4a</b>	Fish Farming	A BO
Module 2 - Bio-Technology		
<b>2.1</b>	Selective Breeding	L
<b>2.1a</b>	Selective Breeding	A
<b>2.2</b>	Genetic Modification	L
<b>2.2a</b>	Genetic Modification	A
<b>2.3</b>	Cloning	L BO
<b>2.3a</b>	Cloning	A BO

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#### Module 1 - States of Matter

<b>1.1</b>	States of Matter	L
<b>1.1a</b>	States of Matter	A
<b>1.2.1</b>	Diffusion	L
<b>1.2.2</b>	Solutions	L
<b>1.2a</b>	Diffusion and Solutions	A
<b>1.3</b>	Solubility	L CO
<b>1.3a</b>	Solubility	A CO

#### Module 2 - Elements, Compounds and Mixtures

<b>2.1.1</b>	Atoms, Elements and Compounds	L
<b>2.1.2</b>	Mixtures	L
<b>2.1.3</b>	Pure Substances	L
<b>2.1a</b>	Elements, Compounds and Mixtures	A
<b>2.2</b>	Chromatography	EX
<b>2.2a</b>	Chromatography	A

#### Module 3 - Atomic Structure

<b>3.1.1</b>	Atomic Structure	L
<b>3.1.2</b>	Mass Number, Atomic Number and Isotopes	L
<b>3.1a</b>	The Atom	A
<b>3.2</b>	Relative Atomic Mass	L
<b>3.2a</b>	Relative Atomic Mass	A

#### Module 4 - The Periodic Table

<b>4.1.1</b>	The Periodic Table	L
<b>4.1.2</b>	Electronic Structure and the Periodic Table	L
<b>4.1a</b>	The Periodic Table	A
<b>4.2.1</b>	Metals and Non-Metals	L
<b>4.2.2</b>	Group 0	L
<b>4.2a</b>	Metals, Non-Metals and the Group 0 Elements	A

#### Module 5 - Quantitative Chemistry

<b>5.1.1</b>	Balanced Chemical Equations	L
<b>5.1.2</b>	Relative Formula Mass	L
<b>5.1a</b>	Balanced Equations and Formula Masses	A
<b>5.2.1</b>	Moles	L
<b>5.2.2</b>	Masses of Reactants and Products	L
<b>5.2a</b>	Moles	A
<b>5.3</b>	Yields	L
<b>5.3a</b>	Yields	A
<b>5.4</b>	Calculating Theoretical Yields	L
<b>5.4a</b>	Calculating Theoretical Yields	A
<b>5.5</b>	Empirical Formulae	L
<b>5.5a</b>	Empirical Formulae	A
<b>5.6</b>	Finding the Formula of a Metal Oxide	EX
<b>5.6a</b>	Finding the Formula of a Metal Oxide	A
<b>5.7</b>	Concentration in mol/dm <sup>3</sup>	L CO
<b>5.7a</b>	Concentration in mol/dm <sup>3</sup>	A CO
<b>5.8</b>	Volumes of Gases	L CO
<b>5.8a</b>	Volumes of Gases	A CO



## SECTION 2 INORGANIC CHEMISTRY

Module 6 - Bonding and Structure		
6.1.1	Ionic Bonding	L
6.1.2	Forming Ionic Compounds	L
6.1.3	Properties of Ionic Compounds	L
6.1a	Ionic Compounds	A
6.2.1	Covalent Bonding	L
6.2.2	Covalent Substances	L
6.2a	Covalent Bonding and Substances	A
6.3	Metallic Bonding	L
6.3a	Metallic Bonding	A CO
6.4	Electrolysis of Molten Ionic Compounds	L CO
6.4a	Electrolysis of Molten Ionic Compounds	A CO
6.5.1	Electrolysis of Aqueous Solutions (Theory)	L CO
6.5.2	Electrolysis of Aqueous Solutions (Examples)	L CO
6.5a	Electrolysis of Aqueous Solutions	A CO
6.6	Electrolysis of Aqueous Copper Sulfate with Inert Electrodes	EX CO
6.6a	Electrolysis of Aqueous Copper Sulfate with Inert Electrodes	A CO
6.7	Oxidation, Reduction and Half Equations	L CO
6.7a	Oxidation, Reduction and Half Equations	A CO

Module 1 - Group 1, Group 7 and the Atmosphere		
1.1.1	Trends in Group 1	L
1.1.2	Trends in Group 7	L
1.1a	Group 1 and Group 7	A
1.2	Gases in the Atmosphere	L
1.2a	Gases in the Atmosphere	A
1.3	The Percentage of Oxygen in the Atmosphere	EX
1.3a	The Percentage of Oxygen in the Atmosphere	A

Module 2 - The Reactivity Series		
2.1	Reactions of Metals	L
2.1a	Reactions of Metals	A
2.2	Investigating Reactions between Metals and Acids	EX
2.2a	Investigating Reactions between Metals and Acids	A
2.3.1	Reactivity	L
2.3.2	Displacement Reactions	L
2.3a	Reactivity Series	A
2.3b	Reactivity Series	A
2.4	Oxidation and Reduction in Terms of Electrons	L
2.4a	Oxidation and Reduction in Terms of Electrons	A
2.5	Corrosion	L
2.5a	Corrosion	A

Module 3 - Extraction and Uses of Metals		
3.1	Extraction of Metals	L CO
3.1a	Extraction of Metals	A CO
3.2	Uses of Metals	L CO
3.2a	Uses of Metals	A CO
3.3	Alloys	L CO
3.3a	Alloys	A CO
3.4	Balancing Equations	L CO
3.4a	Balancing Equations	A CO

Module 4 - Acids, Bases and Salts		
4.1	Acids and Alkalis	L
4.1a	Acids and Alkalis	A
4.2	Acid-Alkali Titrations	EX
4.2a	Acid-Alkali Titrations	A
4.2b	Acid-Alkali Titrations	A
4.3	Solubility Rules	L
4.3a	Solubility Rules	A
4.4	Proton Transfer	L
4.4a	Proton Transfer	A
4.5	Acids, Bases and Salts (General)	L
4.5a	Acids, Bases and Salts (General)	A
4.6	Producing Soluble Salts Experiment from an Insoluble Reactant (Theory)	L
4.6a	Producing Soluble Salts Experiment from an Insoluble Reactant (Theory)	A
4.7	Producing Soluble Salts Experiment from an Insoluble Reactant (Experiment)	EX
4.7a	Producing Soluble Salts Experiment from an Insoluble Reactant (Experiment)	A
4.8	Producing Soluble Salts Experiment from Soluble Reactants (Theory)	L CO
4.8a	Producing Soluble Salts Experiment from Soluble Reactants (Theory)	A CO
4.9	Producing Insoluble Salts	L CO
4.9a	Producing Insoluble Salts	A CO

Module 5 - Chemical Tests		
5.1	Tests for Gases	L
5.1a	Tests for Gases	A
5.2	Chemical Tests for Ions	EX
5.2a	Chemical Tests for Ions	A
5.3	Testing for Water	L
5.3a	Testing for Water	A

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Module 1 - Energetics		
1.1	Exothermic and Endothermic Reactions	EX
1.1a	Exothermic and Endothermic Reactions	A
1.1b	Exothermic and Endothermic Reactions	A
1.2	Heat and Enthalpy Changes	L
1.2a	Heat and Enthalpy Changes	A
1.3	Reaction Profiles	L
1.3a	Reaction Profiles	A CO
1.4	Calculating Energy Changes	L CO
1.4a	Calculating Energy Changes	A CO
1.4a	Cells	A CO
Module 2 - Rates of Reaction		
2.1	Rates of Reaction	L
2.1a	Rates of Reaction	A
2.2	Calculating Rates of Reaction	L
2.2a	Calculating Rates of Reaction	A
2.3.1	Investigating Rates of Reaction (Concentration)	EX
2.3.2	Investigating Rates of Reaction (Surface Area)	EX
2.3a	Investigating Rates of Reaction	A
2.4.1	Collision Theory and Activation Energy	L
2.4.2	Factors Affecting Rates of Reaction	L
2.4.3	Catalysts	L
2.4a	Factors Affecting Rates of Reaction	A
2.5	Decomposition of Hydrogen Peroxide	EX
2.5a	Decomposition of Hydrogen Peroxide	A
Module 3 - Reversible Reactions and Equilibria		
3.1	Reversible Reactions	L
3.1a	Reversible Reactions	A
3.2	Dynamic Equilibria	L CO
3.2a	Dynamic Equilibria	A CO
3.3	Factors Affecting Dynamic Equilibria	L CO
3.3a	Factors Affecting Dynamic Equilibria	A CO

Module 1 - Energetics		
1.1	Hydrocarbons	L
1.1a	Hydrocarbons	A
1.2	Reactions with Hydrocarbons	L
1.2a	Reactions with Hydrocarbons	A
1.3	Fractions of Crude Oil	L
1.3a	Fractions of Crude Oil	A
1.4	Combustion of Hydrocarbons	L
1.4a	Combustion of Hydrocarbons	A
1.4b	Combustion of Hydrocarbons (Balancing Equations)	A
1.5	Cracking	L
1.5a	Cracking	A
1.6.1	Alkanes	L
1.6.2	Alkenes	L
1.6a	Alkanes and Alkenes	A
Module 2 - Alcohols, Carboxylic Acids, Esters and Polymers		
2.1.1	Alcohols	L CO
2.1.2	Carboxylic Acids	L CO
2.1.3	Esters	L CO
2.1a	Alcohols, Carboxylic Acids and Esters	A CO
2.2	Addition Polymerisation	L
2.2a	Addition Polymerisation	A
2.3	Condensation Polymerisation	L CO
2.3a	Condensation Polymerisation	A CO

EX	= Experiment
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A	= Assessment
PO	= Physics only

Module 1 - Motion		
1.1	Distance, Displacement, Speed and Velocity	L
1.1a	Distance, Displacement, Speed and Velocity	A
1.2	Calculating Speed	L
1.2a	Calculating Speed	A
1.3	Investigating Motion	EX
1.3a	Investigating Motion	A
1.4	Distance-Time Graphs	L
1.4a	Distance-Time Graphs	A
1.5	Acceleration	L
1.5a	Acceleration	A
1.6	Velocity-Time Graphs	L
1.6a	Velocity-Time Graphs	A
1.7	Calculating Distance from Velocity-Time Graphs	L
1.7a	Calculating Distance from Velocity-Time Graphs	A
1.8	$v^2 = u^2 + 2as$	L
1.8a	$v^2 = u^2 + 2as$	A
Module 2 - Effects of Forces		
2.1	Effects of Forces	L
2.1a	Effects of Forces	A
2.2	Representing Forces as Vectors	L
2.2a	Representing Forces as Vectors	A
2.2b	Representing Forces as Vectors	A
2.3	$F = ma$	L
2.3a	$F = ma$	A
2.4	Weight	L
2.4a	Weight	A
2.5	Falling Objects and Terminal Velocity	L
2.5a	Falling Objects and Terminal Velocity	A
2.6	Stopping Distances	L
2.6a	Stopping Distances	A
2.7	Hooke's Law	L
2.7a	Hooke's Law	A
2.7b	Hooke's Law	A
2.8	Investigating Force and Extension	EX
2.8a	Investigating Force and Extension	A

Module 3 - Momentum		
3.1	Momentum	L PO
3.1a	Momentum	A PO
3.2	Conservation of Momentum	L PO
3.2a	Conservation of Momentum	A PO
3.3	$F = \Delta p/t$	EX PO
3.3a	$F = \Delta p/t$	A PO
3.4	Momentum and Safety	L PO
3.4a	Momentum and Safety	A PO
3.5	Newton's 3rd Law	L PO
3.5a	Newton's 3rd Law	A PO
Module 4 - Moments		
4.1	Calculating Moments	L
4.1a	Calculating Moments	A
4.2.1	The Principle of Moments	L
4.2.2	Moments and Light Beams	L
4.2a	The Principle of Moments	A

### SECTION 2 ELECTRICITY

### SECTION 3 WAVES

EX	= Experiment
L	= Lecture Video
A	= Assessment
PO	= Physics only

Module 1 - Domestic Electricity		
1.1.1	A.C and D.C	L
1.1.2	Mains Electricity	L
1.1a	Domestic Circuits	A
1.2.1	Electrical Power	L
1.2.2	Electrical Energy	L
1.2a	Electrical Power and Energy	A
Module 2 - Simple Circuits		
2.1.1	Standard Circuit Diagram Symbols	L
2.1.2	Electrical Charge and Current	L
2.1a	Circuit Symbols, Charge and Current	A
2.2	Energy, Charge and Potential Difference	L
2.2a	Energy, Charge and Potential Difference	A
2.3.1	Current, Resistance and Potential Difference	L
2.3.2	Applications of Thermistors and LDRs	L
2.3a	Current, Resistance and Potential Difference	A
2.4.1	Finding Resistance (General Principles)	EX
2.4.2	Finding Resistance (Resistance vs Length)	EX
2.4.3	Finding Resistance (Combinations)	EX
2.4a	Finding Resistance	A
2.4b	Finding Resistance	A
2.5.1	I-V Characteristics (Resistor)	EX
2.5.2	I-V Characteristics (Filament Lamp)	EX
2.5.3	I-V Characteristics (Diode)	EX
2.5a	I-V Characteristics	A
2.6.1	Series Circuits	L
2.6.2	Parallel Circuits	L
2.6a	Series and Parallel Circuits	A
Module 3 - Electric Charge		
3.1	Charging by Friction	EX PO
3.1a	Charging by Friction	A PO
3.2	Explaining Charging	L PO
3.2a	Explaining Charging	A PO
3.3	Uses and Hazards of Static Electricity	L PO
3.3a	Uses and Hazards of Static Electricity	A PO

Module 1 - Properties of Waves		
1.1.1	Transverse and Longitudinal Waves	L
1.1.2	Wavelength and Amplitude	L
1.1.3	Period and Frequency	L
1.1.4	$v = f\lambda$	L
1.1a	Waves	A
1.2	The Doppler Effect	L
1.2a	The Doppler Effect	A
Module 2 - The Electromagnetic Spectrum		
2.1.1	The Electromagnetic Spectrum	L
2.1.2	The Uses and Applications of Electromagnetic Waves	L
2.1a	The Electromagnetic Spectrum	A
2.2	The Hazards of Electromagnetic Radiation	L
2.2a	The Hazards of Electromagnetic Radiation	A
Module 3 - Light		
3.1.1	Waves at a Boundary	L
3.1.2	Reflection	L
3.1a	Ray Diagrams	A
3.2	Investigating Reflection and Refraction	EX
3.2a	Investigating Reflection and Refraction	A
3.3	Refractive Index	L
3.3a	Refractive Index	A
3.4	Investigating Refractive Index	EX
3.4a	Investigating Refractive Index	A
3.5	Total Internal Reflection	L
3.5a	Total Internal Reflection	A
Module 4 - Sound		
4.1	The Speed of Sound in Air	EX PO
4.1a	The Speed of Sound in Air	A PO
4.2	Pitch and Loudness	EX PO
4.2a	Pitch and Loudness	A PO

## SECTION 4 ENERGY

Module 1 - Energy Transfers		
1.1	Energy Conservation (Qualitative)	L
1.1a	Energy Conservation (Qualitative)	A
1.2.1	Sankey Diagrams	L
1.2.2	Efficiency	L
1.2a	Sankey Diagrams and Efficiency	A
1.3.1	Thermal Conduction	L
1.3.2	Convection	L
1.3.3	Thermal Radiation	L
1.3a	Thermal Energy Transfers	A
1.4	Specific Latent Heat	L
1.4a	Energy of Particles	A
Module 2 - Work and Power		
2.1	$W = F \times d$	L
2.1a	$W = F \times d$	A
2.1b	$W = F \times d$	A
2.2	GPE	L
2.2a	GPE	A
2.3	KE	L
2.3a	KE	A
2.4	Conservation of Energy	L
2.4a	Conservation of Energy	A
2.5	Power	L
2.5a	Power	A
Module 3 - Energy Resources and Electricity Production		
3.1	Energy Transfers in Electricity Production	L PO
3.1a	Energy Transfers in Electricity Production	A PO
3.2.1	Evaluating Methods to Produce Electricity	L PO
3.2.2	Evaluating Methods to Produce Electricity	L PO
3.2a	Evaluating Methods to Produce Electricity	A PO

## SECTION 5 STATES OF MATTER

Module 1 - Density and Pressure		
1.1.1	Calculating Density	L
1.1.2	The Particle Model and Density	L
1.1.3	Changes of State	L
1.1a	Density and State	A
1.2	Determining Density	EX
1.2a	Determining Density	A
1.3	Pressure	L
1.3a	Pressure	A
1.4	$P = \rho gh$	L
1.4a	$P = \rho gh$	A
Module 2 - Changes of State		
2.1	Specific Heat Capacity	L PO
2.1a	Specific Heat Capacity	A PO
2.2	Measuring Specific Heat Capacity	EX PO
2.2a	Measuring Specific Heat Capacity	A PO
2.3.1	Specific Heat Capacity of Water	EX PO
2.3.2	Temperature-Time Graph for Melting Ice	EX PO
2.3a	Thermal Properties of Water	A PO
Module 2 - Changes of State		
3.1	Particle Motion in Gases	L
3.1.2	Kelvin Scale and Absolute Zero	L
3.1a	The Kelvin Scale of Temperature	A
3.2.1	Pressure in Gases	L
3.2.2	$pV = \text{constant}$	L
3.2a	$pV = \text{constant}$	A
3.3	$p/T = \text{constant}$	L
3.3a	$p/T = \text{constant}$	A

Each unit contains a lecture video and at least 1 (usually 2 or 3) assessments.

## SECTION 6 MAGNETISM

## SECTION 7 RADIOACTIVITY

EX	= Experiment
L	= Lecture Video
A	= Assessment
PO	= Physics only

### Module 1 - Magnets and Magnetic Fields

<b>1.1.1</b>	Permanent and Induced Magnets	L	
<b>1.1.2</b>	Magnetic Fields	L	
<b>1.1a</b>	Magnetic Fields	A	
<b>1.2.1</b>	The Magnetic Fields Around Wires	L	PO
<b>1.2.2</b>	The Magnetic Fields Around Solenoids	L	PO
<b>1.2.3</b>	Electromagnetic Devices	L	PO
<b>1.2a</b>	Electromagnetism	A	PO
<b>1.3.1</b>	Fleming's Left Hand Rule	L	
<b>1.3.2</b>	Electric Motors	L	
<b>1.3.3</b>	Loudspeakers	L	
<b>1.3a</b>	Uses of Electromagnets	A	

### Module 2 - Electromagnetic Induction

<b>2.1.1</b>	Electromagnetic Induction	L	
<b>2.1.2</b>	Electricity Generation	L	
<b>2.1a</b>	Electromagnetic Induction	A	
<b>2.2.1</b>	Structure and Action of a Transformer	L	PO
<b>2.2.2</b>	Turns Ratio Equation	L	PO
<b>2.2a</b>	Transformers and the Turns Ratio Equation	A	PO
<b>2.3.1</b>	Step Up and Step Down Transformers	L	PO
<b>2.3.2</b>	Input and Output Currents	L	PO
<b>2.3a</b>	Transformers	A	PO

### Module 1 - Radioactive Emissions

<b>1.1.1</b>	Atomic Structure	L
<b>1.1.2</b>	Mass Number, Atomic Number and Isotopes	L
<b>1.1a</b>	The Atom	A
<b>1.2.1</b>	Radioactive Decay and Activity	L
<b>1.2.2</b>	Natures and Properties of Nuclear Radiations	L
<b>1.2.3</b>	Nuclear Equations	L
<b>1.2.4</b>	Half-Lives	L
<b>1.2a</b>	Radioactive Decay	A

### Module 2 - Uses and Hazards of Radioactivity

<b>2.1</b>	Radioactive Contamination	L
<b>2.1a</b>	Radioactive Contamination	A
<b>2.2.1</b>	Background Radiation	L
<b>2.2.2</b>	Uses of Radioactivity	L
<b>2.2.3</b>	Hazards of Radioactivity	L
<b>2.2a</b>	Hazards and Uses of Radioactivity	A
<b>2.3.1</b>	Nuclear Fission	L
<b>2.3.2</b>	Nuclear Fusion	L
<b>2.3a</b>	Nuclear Fission and Fusion	A

## SECTION 8 ASTROPHYSICS

### Module 1 - Motion in the Universe and Stellar Evolution

<b>1.1.1</b>	The Structure and Location of the Solar System	L	
<b>1.1.2</b>	Natural and Artificial Satellites	L	
<b>1.1.3</b>	Orbital Speed	L	
<b>1.1a</b>	The Structure of Space	A	
<b>1.2.1</b>	Colour and Surface Temperature	L	
<b>1.2.2</b>	Stellar Evolution	L	
<b>1.2a</b>	Stellar Evolution	A	
<b>1.3</b>	The Hertzsprung-Russel Diagram	L	PO
<b>1.3a</b>	The Hertzsprung-Russel Diagram	A	PO

### Module 2- Stellar Evolution

<b>2.1.1</b>	Red-Shift	L	PO
<b>2.1.2</b>	The Big Bang Theory	L	PO
<b>2.1a</b>	Red-Shift and the Big Bang	A	PO

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# ABOUT US

With a wealth of real-life teaching experience, the EzyScience team are passionate about helping teachers improve student grades through the use of technology.



## PETER JORDAN

Peter Jordan founded EzyEducation after becoming frustrated at the lack of meaningful digital learning aids available whilst teaching economics at The Portsmouth Grammar School. Before entering the classroom, Peter had several senior marketing roles within the financial services sector, including at Old Mutual Wealth and Scottish Widows.



## MARK SIMPSON

Mark leads the development of the Science courses at EzyEducation. He holds a BSc (Hons) in Applied Mathematics and Physics and has been teaching for over 34 years. Mark spent 11 years as Head of Science at Wavell school, where he was responsible for the development of the school's internal digital science resources.

Our excellent support team are on-hand to support you and will make setting up and using EzyScience a breeze.

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