

Science

KS3 – Year 7 & 8

Students study:

Year 7

☑ All About Life - Biology

	Lesson Outline
1	Processes of life Cells – tissues – organs – organs systems
2	Animal and plant cells 1
3	Plant and animal cells 2
4	Respiration
5	Respiration and exercise
6	Female reproductive system and male reproductive system
7	Menstrual Cycle
8	Fertilisation and sex
9	Pregnancy
10	Birth and growth

☑ Staying Alive - Biology

	Lesson Outline
1	Review of Cells/Intro to Cells
2	Overview of organ systems within the body
3	Skeleton
4	Muscles
5	Food and Digestion: diet, food groups, deficiency diseases
6	Food and Digestion: energy in foods
7	Food and Digestion: structure and function of the digestive system
8	Food and Digestion: enzymes, bacteria in the digestive system
9	Lungs: Structure and Function
10	Lungs: Breathing
11	Lungs: Diseases
12	Heart: Structure and Function
13	Heart: Blood (transport)
14	Health : Drugs

☑ Colourful Chemistry - Chemistry

	Lesson Outline
1	Safety in Science
2	How do we identify acids and alkalis?
3	Where do indicators come from?
4	What happens when acids and alkalis react?
5	How do acids react with metals?
6	What use are acids and alkalis?
7	Which antacid is the best?
8	What is matter made from?
9	How do we explain the properties of matter?
10	What happens when a substance changes state?
11	What are the differences between elements, compounds, and mixtures?
12	What is a chemical formula?
13	How does mass change in a chemical reaction?
14	What is the difference between pure substances and mixtures?
15	How does something dissolve?
16	What is diffusion?
17	How can we separate parts of a mixture?
18	What is distillation?
19	What is chromatography?

☒ Reactive - Chemistry

	Lesson Outline
1	Introducing chemical reactions
2	Combustion
3	Chemical formulae
4	Balancing equations
5	Thermal decomposition
6	Write up of thermal decomposition
7	Oxidation, Corrosion and rusting
8	Write up of rusting practical
9	The reactivity series
10	Displacement reactions
11	Metal extraction using carbon - reduction
12	Extracting copper from copper oxide using carbon
13	Polymers
14	Ceramics
15	Composites

☒ Energy – Physics

	Lesson Outline
1	Energy Types and Transfers
2	Testing Fuels
3	Energy Transfers – Efficiency of Bounce
4	Energy Resources
5	Conduction – Convection - Radiation
6	Thermos – best insulator
7	Energy in Food
8	Energy in the Home – electrical bills
9	Pulleys and Levers- Machines
10	Conductors and Non-conductors – Complete Circuits
11	Series Circuits – Current and Voltage
12	Parallel Circuits – Current and Voltage
13	Switches
14	Resistance in a Wire
15	Static Electricity
16	Magnetism
17	Electromagnetism
18	Revision
19	Test

☐ Exploring Space – Physics

	Lesson Outline
1	Structure of the Universe
2	Solar System
3	Planet Formation
4	Gravity $F=mg$
5	Earth Sun and Moon Orbits – Day Night month year : Modelling Orbits
6	Shadows
7	Seasons
8	Helio centrism and Geo centrism - Debate
9	Making a Telescope
10	Stars, Galaxies, Lightyears
11	Habitable Zone – Aliens - SETI
12	Moon Formation – Evaluating Evidence
13	Moon Phases and Eclipses
14	Life cycle of star
15	Comets – Dinosaurs Extinction

Year 8

☐ Genetics - Biology

	Lesson Outline
1	Variation between species
2	Variation within a species
3	Investigating variation
4	DNA and genes
5	Genetic crosses
6	Variation leading to natural selection
7	Extinction
8	Biodiversity

☐ Plants for Life - Biology

	Lesson Outline
1	Plant structure
2	Photosynthesis
3	Investigating photosynthesis
4	Adaptations
5	The importance of plants
6	Sexual reproduction in plants
7	Food chains/ food webs
8	Organisms and their environment

☐ All About Waves - Physics

	Lesson Outline
1	Introduction to Waves (Key terms/properties) Superposition (What happens when waves meet)
2	How sound travels (Vibrations causing sound, transmission and vacuum). How we hear sound (the structure of the ear and a comparison of different sounds)
3	Echo location Speakers and Microphones
4	Auditory Range and using sound to repel unwanted things (small pests and children)
5	Basic properties and definitions of light. Simple ray diagrams, Investigating mirrors
6	The spectrum, colour mixing, light through filters
7	Pinhole Cameras
8	Lenses
9	Long sighted and short sightedness
10	Refraction
11	The Speed of Light The uses of light Total Internal Reflection and Fibre Optics
12	Complex Ray Diagrams

☐ Periodic Table, Reactions and Equations - Chemistry

	Lesson Outline
1	Investigating Metals and Non-metals
2	Metal and non-metal oxides
3	The Periodic Table symbols, groups, periods
4	Formation of Periodic Table
5	Mendeleev's Periodic Table
6	Comparing different groups
7	Revise Particle Model of States
8	Energy changes on changes of state
9	Endothermic and Exothermic Reactions
10	Catalysts

☐ Alert - Biology

	Lesson Outline
1	The eye
2	Sensing stimuli
3	Taste, smell and flavour
4	Reflexes and reaction times
5	Ears and hearing
6	Conditions for germination
7	Growing plants
8	Testing soil
9	Using plants

☐ Restless Earth - Chemistry

	Lesson Outline
1	Composition and Structure
2	Igneous Rock
3	Metamorphic Rock
4	Sedimentary Rock
5	The Rock Cycle
6	Reuse & Recycle
7	Burning Fossil Fuels
8	Carbon Cycle
9	Composition of Atmosphere
10	Global Warming Crisis
11	End of Unit Test

☐ Matter and Energy - Physics

	Lesson Outline
1	Matter – Changes of State
2	Matter – Particle Model and Diffusion
3	Matter – Physical Changes
4	Matter – Chemical Changes and Conservation of Mass
5	Forces – Contact forces
6	Forces – Non-contact forces
7	Forces – Force Arrows and Balanced Forces
8	Forces – Stretching Forces and Plotting the Extension of a Spring
9	Forces – Moments
10	Forces – Speed and Distance-Time Graphs
11	Forces – Pressure

Each unit include a number of practical investigations, key skills development and assessments leading to GCSE.

Suggested Biology Revision: <http://www.bbc.co.uk/education/subjects/z4882hv>

Suggested Chemistry Revision: <http://www.bbc.co.uk/education/subjects/znxytd>

Suggested Physics Revision: <http://www.bbc.co.uk/education/subjects/zh2xsbk>