

# CURRICULUM MAP 2021/22 - TOPICS COVERED EACH HALF TERM

## KS3 - Year 7

<p><b>ART</b> (Please note: these projects will be rotated between classes so may not be taught in this order)</p>	<p><b>Natural Forms project.</b> Drawing and design skills. Texture, mark making, pencil drawing, pen &amp; ink, watercolour &amp; ink wash and looking at key artists. Developing natural forms into various print making techniques &amp; building on skills learnt previously (texture etc) Responding to a theme. Researching &amp; combing imagery.</p>		<p><b>Painting project.</b> Colour theory and colour mixing – primary, secondary Tertiary. Painting skills, various paints, brush technique, mark-making. Looking at impressionist painters and their styles, learning how to copy and develop. Drawing from observation objects/places that link with the impressionist subject matter Reinforce shape / proportion / mark-making for textures. Create own painting, developing the style and techniques of one or more of the artists covered.</p>		<p><b>Cultural textiles project.</b> Learning about art and textiles in different countries, drawing for research and exploring ideas. Look at key artists. Exploring different techniques such as tie dye, weaving and hand sewing skills. Develop ideas using resist and sewing skills and linking back to pattern and symbolism.</p>	
<p><b>COMPUTING</b></p>	<p><b>Impact of technology: Collaborating online respectfully</b> Identify how to use online collaboration tools respectfully. Be able to use the computing lab appropriately. Understand the risks when using technology and how to protect against them.</p>	<p><b>Networks: from semaphores to the internet</b> Recognise networking hardware and explain how networking components are used for communication. Understand how networks can be used to retrieve and share information</p>	<p><b>Using media: gaining support for a cause</b> Able to create digital products for a real-world cause. Use software tools appropriately to support work. Select and create a range of media.</p>	<p><b>Programming essentials in Scratch part 1</b> Apply the programming constructs of sequence, selection and iteration in Scratch. Create programs independently to allow computers to solve problems.</p>	<p><b>Programming essentials in Scratch part 2</b> Use subroutines to decompose a problem that incorporate lists in Scratch. Create programs independently to allow computers to solve problems. Be able to comprehend, design, create and evaluate algorithms.</p> <p><b>Modelling data spreadsheets</b> Be able to sort and filter data using formulas and functions in spreadsheet software. Understand how data is used to represent real-world scenarios.</p>	
<p><b>PERFORMING ARTS</b></p>	<p><b>An Introduction to Performing Arts: Silent Movies</b> Performing Arts Audience Awareness Mime</p>	<p><b>Dance Through Time – and exploration of traditional African dance through the ages.</b> Style / Genre</p>	<p><b>Staging a Musical - School of Rock</b> Musical Staging / Blocking Audition Director</p>	<p><b>Theatre Through Time - a journey through the key moments in theatre's history</b></p>	<p><b>Rehearsing and Interpreting Scripts: Hansel and Gretel</b> Stage Directions Dialogue Narration Vocal Skills</p>	<p><b>Responding to a stimuli: Dance</b> Motif Development Action Space Dynamics</p>

	<p><b>Gesture</b>  <b>Facial Expression</b>  <b>Characterisation</b>  An introduction to the reason why students study Performing Arts and what it means to be a performer</p>	<p><b>Isolation</b>  <b>Motif</b>  <b>Choreography</b>  <b>Musicality</b>  <b>Projection</b>  Students will see the roots and development of dance and its cultural journey through time</p>	<p><b>Interpretation</b>  <b>Rehearsal</b>  Students will learn how a musical goes from page to stage and become performers in our own musical theatre project</p>	<p><b>Ancient Greek Theatre</b>  <b>Commedia dell'Arte</b>  <b>Elizabethan Theatre</b>  <b>Epic Theatre</b>  <b>Naturalism</b>  <b>Physical Theatre</b>  Students will understand how theatre styles have changed through time and how each style influenced the next</p>	<p><b>Intention</b>  <b>Prop</b>  Students will understand the different elements that make up a script and learn to interpret both characters and stage direction</p>	<p><b>Relationships</b>  <b>Stimulus</b>  Students will understand what a stimulus is and how it can be used to inspire movements.  Students will look at a range of strategies to create their own choreography</p>
<b>DT</b>	<p><b>Night Light</b>  Why is it important to be safe in the workshop?  Why do we need to identify and understand user needs?  How to research and solve their own design problems  How to develop a design solution  How to analyse products using ACCESSFM  Why do designers/manufacturers analyse products?  How to use tools to safely shape, cut and drill.  Sustainable design. Why is this important?  How to use tools to make an electrical circuit  How to evaluate the night light?  Creating design on card for night light  Making night light  Analysing night lights  Research sustainable design and how products have been designed with the environment in mind.</p>	<p><b>Squashed tomato challenge</b>  What makes a strong structure?  How does an aerial ropeway work?  Why is Nepal good for farming tomatoes?  How to farmers of Nepal live?  What is the difference, between, 1st,2nd and 3rd order levers?  What is a pulley? How does it work?  How can levers change motion?  What is the purpose of a container?  What is a net? Why are nets used to package products?  What makes a good presentation?  Making structures  Process of completing a research into farmers of Nepal.  Design own net to hold and transport tomatoes  Make a transportation system for transporting tomatoes  Produce a presentation about transportation system that has been built  Data analysis.</p>	<p><b>Design strategies &amp; Key fob</b>  What is biomimicry, scruffiti &amp; 4x4  How to use different design approaches to generate creative designs?  How to develop innovative and functional products that responds to different needs  Develop designs using computer-based tools (2d Design)  How products can be manufactured using CAM (Computer Aided Manufacture)  Process of completing design work using creativity and imagination  Use of biomimicry, scruffiti and 4x4 to generate ideas  Use of literacy for Design and Technology through oracy and in annotation of designs  Use of (CAD) 2d Design to create a design  Use of laser cutter to manufacture a key fob</p>	<p><b>Ozobots</b>  What is a robot?  What is an input/output?  What is track  How to control a robot to fulfil a number of different commands  The benefits and disadvantages of robots and their effect on daily life and the wider world.  Problem solving using a robot  Test and refine tracks to control a robot to complete a number of different tasks  Investigate new and emerging technologies  Understand the potential impact the use of robots has on society</p>		

<p><b>ENGLISH</b></p>	<p><b>The Graveyard Book</b> Gothic conventions/tradition, theme of growing up (parent/child relationships, friendship/bullying), vocabulary of thoughts and feelings, descriptive language devices, structural features.</p> <p>Reading comprehension (fiction), analysing the effect of language devices, writing creatively, writing analytically</p>	<p><b>Shakespeare's England and Villains</b> Shakespeare's life and times, theme of villainy, Shakespeare's language, characterisation and plot, descriptive language devices.</p> <p>Reading comprehension (Early Modern English), analysing the effect of language devices, writing analytically, oracy/debate</p>	<p><b>New Worlds</b> Literature from many/diverse voices, word classes, descriptive language devices, structural features.</p> <p>Reading comprehension (fiction), analysing the effect of language devices, using language creatively and for specific effects.</p>	<p><b>Animal Poetry</b> Word classes, descriptive language devices, structural features, poets and their influences, writing analytically.</p> <p>Reading comprehension (poetry), analysing the effect of language and structural devices,</p>	<p><b>Zoos – The Debate</b> Reading comprehension (non-fiction), using language creatively, analysing the effect of rhetorical devices, oracy.</p> <p>Forming opinions and developing confidence in expressing and developing and argument through oracy.</p>
<p><b>FOOD</b></p>	<p><b>Basic Skills and 5-a-Day</b> Equipment in the kitchen Washing up. Knife Skills Food safety – watching bad food live Grime scene – identify hazards Personal hygiene Work on 5-a-day Using the cooker, grill and hob Learning about organisation, timings, pace of lessons and getting routines established. Sensory evaluation (crumble) Understanding the reasons behind the above cooking skills and being able to adapt to their own dishes. Discussion about 5-a-day and creating personal menus. Thinking about the science behind enzymic browning and exploring other ways we see it in Food.</p>	<p><b>Foods from around the World:</b> Why do we eat food? Food choice, different factors Cuisines from around the world Fairtrade. Food miles Exploring breadmaking in detail, looking at breads around the world, how gluten works? Making bread – functions of ingredients and skills. How does yeast work? Labelling and food packaging, sensory evaluation and quality control Exploring different cultures and their cuisines. Giving students the opportunity to explore all the various factors that food choice offers.</p>	<p><b>Let's go on a Picnic</b> What is a picnic and foods we eat? Low and high-risk foods. Food spoilage Storing of foods to keep us safe Food poisoning Hydration and the importance of drinking water The senses and their role in evaluating foods What are sweet and savoury foods? Learning about the key nutritional groups Introduction into energy balance Sensory Evaluation (cupcakes) Students are encouraged to explore fully the creativity of designing and making their own cupcakes. They research ideas, learn new techniques to use, create a unique range of cakes. Completing an escape room type activity, students learn about food poisoning and the wider risk to health. Relating food storage and spoilage to the wider audience (home)</p>		

<p><b>GEOGRAPHY</b></p>	<p><b>What is our World like?</b>          To know the nature of Geography          To know the different types of maps using an Atlas          To know how to locate places on OS Maps          To know how to interpret OS maps (relief and distance)          To know How to interpret Data on Maps          To know the locational context of the UK          To know how to interpret Geographical Images          To know the locational context of Europe          To know the locational context of the world          To know How the UK is linked to the wider world          To know how to read Geographical Graphs</p> <p>Contextual knowledge of location (UK, Europe).          Graphical literacy.          Interpretation of 2D imagery.          Application of tier 3 terminology.          Cost/benefit analysis and judgement.</p>		<p><b>Why is our weather so changeable?</b>          What is the difference between weather and climate?          How do we measure weather?          What is the climate of the UK?          Why does it rain?          What is a microclimate?          How do we carry out a geographical enquiry?</p> <p>Process of completing a geographical enquiry.          Use of fieldwork equipment.          Application of tier 3 terminology.          Data analysis.</p>	<p><b>What challenges and opportunities does Africa face?</b>          What are our perceptions of Africa?          What are Africa’s main physical features?          What biomes exist in Africa?          How has colonisation affected Africa?          What are the benefits and problems of population change in Africa?          How developed are African countries?          What are the challenges facing the Horn of Africa?          How do the people in the Horn of Africa deal with their challenges?</p> <p>Contextual knowledge of location (Horn of Africa).          Cost/benefit analysis and judgement.          Graphical literacy.          Concept of misperceptions leading to bias.</p>		
<p><b>HISTORY</b></p>	<p><b>What made the Roman Army Successful?</b>          Features of Iron Age Britain          Invasion in 43AD          Bouddica’s rebellion 61AD          Roman towns and public health – The Romans Baths          Living conditions and housing          Theatre and entertainment          Politics, role of Emperor and the Senate          End of Roman rule c.400AD</p>	<p><b>William I – How Significant was William’s control over the English?</b>          Dark Ages/Invasions/Kingdoms pre-1066          Battle of Hastings 1066 and why William won          Castles/Motte and Bailey features and examples          Terror/Harrying of the North 1069          Feudal system          Domesday Book 1086,          Role of the Church.</p> <p>Literacy for History and writing an essay          Assessing change and continuity          Validity of sources (Bayeux Tapestry)</p>	<p><b>King John – How did the monarchy’s control lose its grip?</b>          Magna Carta          Barons – Their relationship with John          Pope – Disagreement with John and Excommunication –          The role of the church on ordinary people.          Civil War          Avignon Empire          Plantagenet</p> <p>Making a Judgement.          Similarity and Difference          Being able to make comparison.</p>	<p><b>The Black Death – How did the Black Death Change Daily Lives</b>          Black Death and its impact on society          The nature of the Disease and its effects          Buboes/ 4 Humours          Superstitions/Natural          Flagellants          Peasant Revolt          Hierarchal system/Feudal System.</p> <p>Developing and applying Knowledge. Evidence/Cause and Consequence/Comparison</p>	<p><b>Chepstow What does Chepstow Castle tell us about the changing natures of Castles</b>          Chepstow Castle          River Wye          Defence/Comfort          Keeps          Baileys          Concentric Castle          Palace castle          Murder Holes.          Control          War</p> <p>Understanding Local History/using sites.          Interpretation and Inference/Change and Continuity/Corroborating evidence.</p>	

	Literacy for History and writing an essay Use of evidence and analysing sources Assessing change and continuity Comparing factors and success					
<b>MATHS</b>  <b>PLEASE NOTE:</b> <b>The units covered may not be in this order</b>	<b>Directed Number</b> Understand negative numbers and use to put them in order and identify on a number line. Calculate with negative numbers.	<b>Powers &amp; Roots</b> Recognise square & cube numbers and the associated roots. Calculate powers and roots with and without a calculator. Recognise triangular numbers.	<b>Sequences</b> Find the rule for a sequence and use it to find further terms. Represent sequences in tables, diagrams and graphs. Understand the difference between linear & non-linear sequences.	<b>Algebraic Notation</b> Understand algebraic notation. Simplify algebraic expressions.	<b>Functions &amp; Substitution</b> Know & use the correct order of operations. Find the inputs & outputs of a given function machine. Given the input & output find a function. Substitute values, including negatives, into simple algebraic expressions.	<b>Equations</b> Understand the meaning of equality & equivalence. Solve simple linear equations.
	<b>Rounding &amp; Estimation</b> Round numbers to powers of 10 and decimals places.	<b>Place value</b> Understand place value of integers & decimals and use to put these in order and identify on a number line or scale. Write numbers in standard form.	<b>Fractions, Decimals &amp; %</b> Represent fractions, decimals and % on a number line. Identify equivalent fractions & cancel fractions to simplest form. Understand % as part of 100 and fractions as division. Convert between fractions, decimals and % including thirds, eighths and thousandths.	<b>Addition &amp; Subtraction</b> Know and use mental & written methods for addition & subtraction. Understand the properties of addition & subtraction. Solve problems involving addition & subtraction.	<b>Multiplication &amp; Division</b> Know and use mental & written methods for multiplication & division. Understand the properties of multiplication & division. Solve problems involving multiplication & division.	<b>Coordinates &amp; linear graphs</b> Work with co-ordinates in 4 quadrants. Plot linear graphs from a table.
	<b>Fractions and % of amounts</b> Convert between fractions and mixed numbers. Find fractions and % of amounts with and without a calculator	<b>Primes, multiples &amp; factor</b> Recognise prime numbers. Recognise square & triangular numbers. Find multiples & factors of numbers. Find the Highest Common	<b>Add &amp; subtract fractions</b> Add & subtract fractions & mixed numbers	<b>Multiply &amp; Divide Fractions</b> Multiply & divide fractions & mixed numbers	<b>Metric Measures</b> Convert metric units. Compare & order metric measures. Measure & draw line segments.	<b>Angles</b> Identify different types of angle. Draw & measure angles using a protractor. Identify parallel & perpendicular lines. Know & use angle rules, including vertically opposite angles, angles round a point, angles

		Factor (HCF) and Lowest Common Multiple (LCM) of two or more numbers.				on a straight line & angles in triangles & quadrilaterals.
	<b>Area &amp; Perimeter</b> Calculate & solve problems with perimeter of shapes and area of rectangles & parallelograms & triangles.	<b>Number sense</b> Use appropriate strategies for calculation with integers, decimals & fractions. Know and use the correct order of operations.	<b>Data Presentation</b> Draw & interpret frequency trees, bar charts, vertical line graphs, time series graphs & pie charts. Read & interpret ungrouped frequency tables.	<b>Measures of average &amp; spread</b> Find the mean, median, mode & range of a data set.	<b>Sets &amp; Probability</b> Understand sets. Draw & interpret Venn diagrams. Understand the probability scales and associated vocabulary. Calculate the theoretical probability for a single event. Understand that probabilities sum to 1 and calculate the probability an outcome does not occur. Use systematic methods, including sample space, to list outcomes. Calculate probabilities from sample space, two-way tables & Venn diagrams	<b>Symmetry</b> Recognise & use line & rotational symmetry
	<b>Properties of shape</b> Recognise & know the properties of different types of triangle & quadrilateral. Recognise different polygons	<b>Construction</b> Construct triangles				
<b>MFL</b>	All students do a carousel of 4 languages. Then students make choices of the language that they will study through year 7, 8 and 9. This is followed by sessions					
	<b>French</b>	<b>Introductions and family</b>	<b>School</b>	<b>School (continued)</b>	<b>Free-time</b>	<b>Free-time (continued)</b>
	<b>German</b>	<b>Introductions and describing people</b>	<b>Family and pets</b>	<b>Free time</b>	<b>My town</b>	<b>My town</b>
	<b>Mandarin</b>	<b>Greetings and introductions</b>	<b>Family and home</b>	<b>Hobbies</b>	<b>Hobbies/School</b>	<b>School</b>
	<b>Spanish</b>	<b>Introductions and school subjects</b>	<b>Free time activities</b>	<b>Free time activities</b>	<b>Family</b>	<b>Animals/Culture</b>

<p><b>MUSIC</b></p>	<p><b>The Voice and Musical Futures Band Performance</b> Development of PERFORMING skills by learning chords to pop songs as a class. Learning about the voice, and singing rounds and a folk song, a musical song and pop songs. Development of musical element knowledge through listening</p>	<p><b>The Power of the Pentatonic</b> Individual PERFORMING and development of keyboard skills, music based on the pentatonic scale. COMPOSING through improvisation using the pentatonic scale. Development of notation and musical elements.</p>	<p><b>Descriptive Music - Danse Macabre</b> Group COMPOSING descriptive music based on 'Danse Macabre' by Saint Saens. Small ensembles using instruments. Development of ensemble performance techniques APPRAISING/LISTENING examples of descriptive music.</p>	<p><b>Descriptive Music - Journey into Space</b> Paired COMPOSING music based on 'The Planet Suite' by Holst using garage band and Sibelius software. Development of software production skills APPRAISING examples of descriptive music.</p>	<p><b>Pop Song Performance Ensemble PERFORMANCE.</b> Development of instrumental and performance skills through a performance of a pop song. LISTENING/APPRAISING Understanding instrumentation, structure, lyrics and context. Singing pop song chorus in 2 parts</p>	<p><b>Pop Song Composition</b> Paired COMPOSING Pop songs. Chords, Harmony, Structure/Form, Texture, Melody, Instrumentation. 4 Chords in C major/A minor Pentatonic Riff and root note bass. Midi input and sequencing. Using microphones, it captures audio of melody lines and or rapping LISTENING/APPRAISING Understanding instrumentation, structure, lyrics and context of pop songs.</p>
<p><b>PE</b></p>	<p><b>Invasion</b> Technical Knowledge Attempting a Range of basic passing, movement with/without ball, attacking and defending skills.  Game Knowledge Attempting to understand Knowledge of rules, awareness of basic attacking/defensive strategies in small sided conditioned games and some knowledge of basic tactics.  Students will also develop Social, Emotional Physical and Leadership skills</p>	<p><b>Net and Wall</b> Technical Knowledge Attempting a Range of basic Forehand, backhand, serves and volley shots.  Game Knowledge Attempting to understand basic Knowledge of rules and attacking and defensive principles in a half court conditioned game and some knowledge of basic tactics.  Students will also develop Social, Emotional Physical and Leadership skills throughout the curriculum.</p>	<p><b>Health &amp; Wellbeing</b> Technical Knowledge Attempting a range of Exercise/Training methods to improve Cardiovascular fitness and general Health and Wellbeing.  Students will also develop Social, Emotional Physical and Leadership skills throughout the curriculum.</p>	<p><b>Aesthetic</b> Technical Knowledge Students will work individual and partner floor work working on basic gym skills and movements. Will then progress onto vaulting attempting a variety of different vaults.  Performance Knowledge To execute the skills aesthetically well, demonstrating good control and tension as part of the performance.  Students will also develop Social, Emotional Physical</p>	<p><b>Striking and Fielding</b> Technical Knowledge Attempting a Range of basic bowling, batting, fielding and wicketkeeping (Throwing and Catching) skills.  Game Knowledge Attempting to understand basic Knowledge of rules and awareness of basic tactics in small sided conditioned games.  Students will also develop Social, Emotional Physical and Leadership skills throughout the curriculum.</p>	<p><b>Athletics</b> Technical Knowledge Attempting a Range of basic Running, Jumping and Throwing Techniques.  Performance Knowledge Attempting to understand the basic rules of each event and tactics and strategies for the individual events.  Students will also develop Social, Emotional Physical and Leadership skills throughout the curriculum.</p>

	throughout the curriculum.			and Leadership skills throughout the curriculum.		
<b>PSHE Curriculum</b>	Achieve your ambition/Future Relationships		Money Prevent/Democracy Campaigning for change Hurtful Language / A modern citizen Stability and what it offers (Families)			
<b>Health Day</b>						Healthy Life styles – Sugar / Dental Health Basic First Aid (Epi-pens, de-fib, inhaler) Basic First Aid (Choking) FGM
<b>Specialist Team</b>		Bereavement	Extremism & Terrorism			
<b>RE</b>	<p><b>Religion: A short introduction</b> What does it mean to belong? How to define and recognise Theism, Atheism and Agnosticism. What is religious truth? The different ways of looking at religions How old is religion? Guidance and ritual. What is ritual and who does it?</p> <p>Literacy for Religious Education, writing one's opinion clearly, coherently and directly Critically analysing opinions Avoiding cognitive dissonance by allowing for other ideas and principles without compromising one's own beliefs</p>	<p><b>Hinduism: Origins of faith</b> The Bhagavad Gita and the 4 paths leading to Moksha (Jnana yoga, Raja yoga, Bhakti yoga and Karma yoga) Hindu festivals, celebrations and practices Beliefs about the nature of God (Many manifestations of the one) Diverse views on the nature of reality (Advaita Vedanta and Dvaita Vedanta) Atman, the nature of the soul.</p> <p>Literacy regarding Hindu teachings and beliefs Assessing different world views Ability to raise and suggest answers to relevant questions in response to Hindu beliefs, support answers using reasons and/or information Avoiding cognitive dissonance by allowing for other ideas and principles without compromising one's own beliefs</p>	<p><b>Sikhism: What is Authority</b> Knowledge of the term Guru and Sikh examples (extending to other eastern faiths) Origins of Sikhism, the story of Guru Nanak The Mul Mantra and key Sikh beliefs The nature of God in Sikhism Martyrdom and the story of Guru Arjan Dev Idea of unconditional charity: The Gurdwara Key features of the life of Guru Gobind Rai (Guru Gobind Singh) Persecution of the Sikhs, how this has shaped the religion and its practices (5 Ks) Sikh rites of passage (Amrit ceremony)</p> <p>Literacy regarding Sikh teachings and beliefs Assessing different world views Ability to raise and suggest answers to relevant questions in response to Sikh beliefs, support answers using reasons and/or information</p>	<p><b>Buddhism: How helping myself first, helps others</b> The 3 Jewels: Buddha, Dharam and the Sangha The story of the Buddha, his enlightenments and subsequent teachings The 3 marks of existence and the 4 noble truths. Metta and Karuna (compassion) Sangha (community of spiritual friends) Role of women in the Sangha – contemporary and historical examples Meditation – Vipassana and Samatha</p> <p>Literacy regarding Buddhist teachings and beliefs Assessing different world views Ability to raise and suggest answers to relevant questions in response to Buddhist beliefs, support answers using reasons and/or information Applying religious ideas of compassion and understanding to one's own life</p>		



				Applying religious ideas of “unconditional charity” to one’s own life	Critically assess one’s own state of mind in relation to the world around oneself.	
<b>SCIENCE</b> <b>(please note - different classes will do the modules in a different order)</b>  <b>Ecology is the last topic taught for all classes.</b>	<b>Cells</b> Structure of plant and animal cells Microscope parts and use- slide preparation Specialised cells- egg, sperm, red blood cell, root hair cell. Structure of bacteria Bacterial culture using agar- aseptic technique Uses of microorganisms- fermentation, yoghurt, digestive health.	<b>Reproduction and health</b> Male and female reproductive organs Puberty changes Role of hormones (oestrogen, progesterone, testosterone) Menstrual cycle Sexual intercourse Journey of a sperm Fertilisation- haploid gametes fusing to form a diploid zygote Plant reproduction Flower structure Pollination methods Seed formation and dispersal Importance in human food security	<b>Reproduction and health</b> DNA structure- double helix and GATC code Chromosome definition and number Work of Watson, Crick and Francis Classification Definition of Species Hierarchy: Kingdom, Phylum, Class, Order, Family, Genus, Species Vertebrate classes and characteristics Environmental vs Genetic variation Continuous/ Discontinuous variables Adaptation Features of organisms living in extreme environments. How these lead to survival Features of typical predator/ defences of prey	<b>Life processes and ecology</b> Characteristics of living things: MRS GREN Respiration (word equation) Definition of Autotroph/ Heterotroph Definitions of ecosystem, habitat, community, population. Biotic and Abiotic factors- examples Human impacts on ecosystems Photosynthesis (word equation) Examples of interdependence. Competition Predator/ prey relationships Food Chains Ecology: sampling methods including quadrats, transects and others such as pitfall traps. Human effects on interdependence- e.g. overfishing.	<b>Atoms and elements</b> Structure of the atom Subatomic particles- protons, neutrons and electrons. Model of a nucleus surrounded by clouds of electrons. Molecules- definition and examples Chemical formulae Definition of element- made of 1 type of atom. Recognition of common elements Properties of elements Introduction to the Periodic Table: Groups and Periods Metals and Non-metals Symbols and Numbers	<b>Chemical Reactions</b> identifying chemical reactions vs physical changes Reactants -> Products. Construction of simple word equations. Gas tests (Hydrogen, Carbon Dioxide, Oxygen- as demo) Observation of other features involved with chemical reactions- energy/ colour changes) Identification of commonly used acids. Properties of acids. Definition of base/ alkali (as a soluble base) Examples of indicators Why we need different types of indicator Natural indicators- preparation of red cabbage indicator. Hazard symbols Risks associated with each hazard Everyday Applications
	<b>Particles and states of matter</b> Particle models of solids, liquids and gases.	<b>The Earth: Rocks and atmosphere</b> Metamorphic. Properties of different rock types Fossil formation	<b>Forces and motion</b> Basic force definitions Forces as a push or pull Free body diagrams- direction and magnitude Use of Newton meter	<b>Waves and energy</b> Wave definitions: speed, wavelength, frequency, amplitude.	<b>Space</b> Scale and organisation of space Planets of the solar system. Order and simple descriptions	<b>Electricity and magnetism</b> Simple circuit components and energy transfers involved. Concept of complete circuits- circuit repairs.

	<p>State changes as examples of physical changes.</p> <p>Properties of common substances.</p> <p>Fluids- definition.</p> <p>Review of particle model.</p> <p>Definition and examples of diffusion.</p> <p>Brownian Motion.</p> <p>Factors affecting diffusion</p>	<p>Fossils found in Sedimentary Rocks</p> <p>The Fossil Record</p> <p>Fossil fuels- definition and examples</p> <p>Crude oil formation.</p> <p>Separation of crude oil.</p> <p>Properties and uses of fractions.</p> <p>Definition of finite resource and examples e.g. oil, metals, rocks.</p> <p>Definitions of sustainable/ renewable</p> <p>Recycling methods.</p> <p>Evaluation of recycling: challenges vs need to conserve resources/ energy.</p> <p>Structure of the atmosphere- layers.</p> <p>Appreciation of depth.</p> <p>Air as a mixture.</p> <p>Composition (%) of atmospheric gases.</p> <p>The carbon cycle- contribution/ effects of different processes including: photosynthesis, combustion, respiration, death, decomposition, feeding, excretion, fossilisation.</p> <p>Biofuels. Concept of "carbon neutral".</p>	<p>Balanced/ unbalanced forces</p> <p>Equilibrium</p> <p>Resultant force- calculation</p> <p>Extension of a spring- calibration to N meter.</p> <p>Calculation of speed:</p> <p>Use of speed = distance/ time</p> <p>Unit as m/s- link to other units</p> <p>Relative and average speeds</p> <p>Distance-time graphs</p> <p>Air resistance and friction as forces which oppose motion</p>	<p>Wave as an energy transfer with no net transfer of matter.</p> <p>Comparison of longitudinal and transverse</p> <p>Sound definitions to include pitch and volume- linked to frequency and amplitude.</p> <p>Explanation of why longitudinal (sound) waves travel at different speeds in solids, liquids and gases.</p> <p>Speed of sound in air- experimental measurement and value.</p> <p>Luminous and non-luminous objects.</p> <p>Light travelling in rays</p> <p>Reflection and scattering from surfaces</p> <p>Shadow formation.</p> <p>Definitions of translucent, transparent and opaque.</p> <p>Energy defined as "something that is needed to make things happen or change".</p> <p>Principle of conservation of energy.</p>	<p>Orbits of earth around the sun, moon around the Earth.</p> <p>Definition of year and day.</p> <p>Rotation and tilt of Earth on its axis- link to seasons.</p> <p>Explanation of phases of the moon.</p>	<p>Construction of circuit diagrams.</p> <p>Dangers of electricity</p> <p>Role of fuse and Earth wire</p> <p>Cost of 1 unit (kWh)</p> <p>Magnetic/ non-magnetic materials</p> <p>Description of field around a bar magnet</p> <p>Permanent and temporary magnetism</p> <p>Earth's magnetic field</p>
--	---	---	---	---	--	--

				<p>Energy stores. Energy transfers. <b>Heat transfer.</b> <b>Definitions,</b> <b>explanations and</b> <b>examples of:</b></p> <ul style="list-style-type: none"><li>- <b>Conduction</b></li><li>- <b>Convection</b></li><li>- <b>Radiation</b></li></ul> <p><b>Explanation of why</b> <b>heat is transferred in</b> <b>different ways</b> <b>through solids,</b> <b>liquids, gases and a</b> <b>vacuum.</b></p>		
--	--	--	--	---	--	--