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Year 5 Long Term Planning

	English (TfW)	Spelling (NC Appendix)	Grammar (TfW)	Mathematics (WR)	Science (WR)	History (Key Stage History)	Geography (Oddizzi)	Art and Design (Kapow)	Design and Technology (Kapow)
Autumn 1	**Fiction** Adventure Journey Story **Non-fiction** Book Review **Poetry** Narrative Poems	Words ending 'tious' and 'ious'- ambitious, curious… Words ending 'cious'- conscious, delicious… Words ending 'cial'- artificial, beneficial… Words ending 'tial'- confidential, essential… Words ending 'cil' and 'tial'- commercial, initial Challenge Words Words ending 'ant'- brilliant, abundant… Words ending 'ance' and 'ancy'- abundance, brilliance… Words ending 'ent' and 'ence'- competence, emergent Words ending 'able' and 'ible'- comfortable, enjoyable… Words ending 'ably' and 'ibly'- comfortably, horribly Challenge Words	Using fronted adverbials (words and phrases) to add detail and for effect Using fronted adverbials (subordinate clauses) beginning with a range of conjunctions Punctuating direct speech when spoken words are split by non-spoken words Introducing relative clauses beginning with a relative pronoun (whose, that, which, whose) or an omitted relative pronoun Introducing relative clauses beginning with adverbs (where, when) Writing conventional sentences: using modal verbs in conditional sentences Identifying conjunctions, prepositions, pronouns, determiners by how they are used Using adverbs to show different degrees of possibility e.g. perhaps, surely Using modal verbs to show different degrees of possibility	**Place Value** • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • count forwards and backwards with positive and negative whole numbers, including through zero • read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit • read Roman numerals to 1000 (M) and recognise years written in Roman numerals • (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit • interpret negative numbers in context • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above **Addition and Subtraction** • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Multiplication and Division • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including	**Forces** • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. • Explain that unsupported objects fall towards the Earth because of gravity acting between the Earth and the falling object. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. • Working scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory) – Recognise which secondary sources will be most useful to research their ideas (non-statutory). – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. – using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. – Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results. – Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. – Identifying scientific evidence that has been used to support or refute ideas or arguments. – Recognise which secondary sources will be most useful to research their ideas (non-statutory). **Space** • Describe the Sun, Earth and Moon as approximately spherical bodies. • Describe the movement of the Earth,		**South America:** **Why is the Amazon important?** -The location of The Amazon and its significance. -The importance of the Amazon Basin and Rainforest. -What the threats to the Amazon are. -The human and physical features of Manaus. -Similarities and differences between the Amazon Basin, south east Brazil and where we live. South America's biggest country is Brazil. Here you'll find the Amazon Rainforest, home to a huge number of animals, plants and insects. Deforestation is a threat to the Amazon Rainforest. A lot of forest has been destroyed, for example to make space for cattle ranches, from which beef is exported worldwide. Manaus is a city in the heart of the Amazon Rainforest region and sits on the Rio Negro, one of two major rivers that flow into the River Amazon. **Amazon Adventure virtual fieldwork lessons.*		**Mechanical Systems:** **Gears and Pulleys** **Skills:** **Design** -Noticing wider-reaching problems or needs in the community. -Identifying a wide range of needs and potential barriers through market research. -Writing more complex problem statements that consider multiple factors and constraints. -Creating more complex design criteria that require considering detailed user needs, environmental impact, materials and cost. -Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. -Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. -Using a series of prototypes to refine and improve their designs. **Make** -Consistently apply safety instructions. -Select appropriate scissors to handle delicate cutting tasks and challenging materials. -Cutting patterns and drawings accurately. -In supervised groups, using hot glue guns safely. -Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly. -Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects. **Evaluate** -Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects. -Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost.

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				long multiplication for two-digit numbers • multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates **Fractions, Decimals and Percentages** • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = =1 1/5] • compare and order fractions whose denominators are all multiples of the same number • add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	and other planets, relative to the Sun in the solar system. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. • Describe the movement of the Moon relative to the Earth. • Working scientifically – Identifying scientific evidence that has been used to support or refute ideas or arguments. – Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. – Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. – Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. – Identifying scientific evidence that has been used to support or refute ideas or arguments. **Planetarium visit or desert stargazing camp.* **Global Warming** • Working scientifically – Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact (non-statutory). – Identifying scientific evidence that has been used to support or refute ideas or arguments. **Beach Clean-up to link with Plastics sustainability unit in summer term.*				-Considering alternative materials, tools or techniques that could enhance the product. -Providing feedback that is helpful, specific, and encouraging. -Incorporating feedback from peers or users to improve their product further, explaining the changes they made and the impact they had. **Knowledge:** -Mechanical systems that use gears in everyday objects (e.g. bicycle, clock, etc.). -Gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another. -Gears allow us to increase the output of a mechanism. -Market research is a way of collecting information about problems or needs. -Constraints are things that might stop our ideas from being successful. -Original and innovative ideas are different from what has been made before. -Annotations are detailed labels and comments on diagrams. -Risks are things that might happen. -Hot glue creates a strong bond quickly. -It is often better to choose safer equipment. -Sustainability means thinking about the materials that were used to make a product and how the product was made. -Their final product can still be improved by different materials or techniques. -Evaluating their designs in detail will help them understand their successful and less successful parts. -Feedback should be positive, helpful and specific. -That explaining how they used feedback to improve their design can help them create better products in the future.
Autumn2						**Myan Civilisation** -In the year 1000 settlements like Chichen Itza were among the largest		**Drawing: I need Space** **Skills:** Generating ideas: -Develop ideas more independently from their	

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						settlements anywhere in the world and Chichen Itza is probably the best preserved of any city in the world from this time. -After about the year AD830 very little new construction took place at Chichen Itza. The last glyph with a date on comes from AD910.The reasons why the Mayan declined at that time (they weren't entirely wiped out) was probably due to drought and overworking of the soil. -The Mayans farmed on land they terraced and made fertile. Their staple diet was maize and even worshiped maize as a god. They drank chocolate but not as we know it. It was unsweetened and spiced with chilli peppers. They even had a frother! -They built pyramids with temples on top and even had an amazing astronomical observatory -The Maya worshipped many gods and believed they needed offerings of blood. -We know about the Maya from their writings in hieroglyphics, their advanced number system and the buildings such as the ball court that are still there today.		own research. Explore and record their plans, ideas and evaluations to develop their ideas towards an outcome. Using sketchbooks: -Confidently use sketchbooks for purposes including recording observations and research, testing materials and working towards an outcome more independently. Making skills: -Work with a range of media with control in different ways to achieve different effects, including experimenting with the techniques used by other artists. -Combine a wider range of media, e.g. photography and digital art effects. -Create in a more sustained way, revisiting artwork over time and applying their understanding of tone, texture, line, colour and form. Knowledge of artists: -Research and discuss the ideas and approaches of artists across a variety of disciplines, being able to describe how the cultural and historical context may have influenced their creative work. -Discuss how artists create work with the intent to create an impact on the viewer. -Consider what choices can be made in their own work to impact their viewer. Evaluating and analysing: -Discuss the processes used by themselves and by other artists, and describe the particular outcome achieved. -Use their knowledge of tools, materials and processes to try alternative solutions and make improvements to their work. **Knowledge:** Formal elements: -Shape: Shapes can be used to place the key elements in a composition. -Line: Lines can be used by artists to control what the viewer looks at within a composition, eg by using diagonal lines to	

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								draw your eye into the centre of a drawing. -Texture: How to create texture on different materials. Making skills: -To know what print effects different materials, make. -How to analyse an image that considers impact, audience and purpose. -How to draw the same image in different ways with different materials and techniques. -How to make a collagraph plate. -How to make a collagraph print. -How to develop drawn ideas for a print. -How to combine techniques to create a final composition. -How to decide what materials and tools to use based on experience and knowledge. Knowledge of artists: -Artists are influenced by what is going on around them, for example, culture, politics and technology. -Artists 'borrow' ideas and imagery from other times and cultures to create new artworks. -Artists can choose their medium to create a particular effect on the viewer. -Artists can combine materials, for example, digital imagery, with paint or print. Evaluating and analysing: -People make art to fit in with popular ideas or fashions. -People can explore and discuss art in different ways, for example, by visiting galleries, discussing it, writing about it, using it as inspiration for their own work or sharing ideas online. -Talking about plans for artwork, or evaluating finished work, can help improve what artists create.	
Spring 1	**Fiction** Narrative - Suspense story – can children use their senses to build tension and reach a problem.	Words ending in 'able', where the 'e' from the root word remains- agreeable, changeable… Adverbs of time- afterwards, earlier…	Linking ideas across paragraphs using linking adverbials to show time, place, number Using devices to build cohesion within a paragraph-adverbial,	**Multiply and Divide** • multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including long multiplication for two-digit numbers	**Properties of Materials** • Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency,		**Climate Zones** -How to identify lines of latitude. -The location of climate zones. -Comparison of climates.		**Textiles: Stuffed Toys** **Skills:** -Designing a stuffed toy considering the main component shapes required and creating an appropriate template.

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	Non-fiction Newspaper report on WW2 **Poetry** Free Verse	Words with suffixes where the base word ends in 'fer'- difference, inference… Silent first letter- knife, knight… Silent letters- build, autumn 'ie' after 'c'- society, glacier… Words where 'ei' makes 'ee' sound- either, neither… Words where 'ough' makes 'or' sound- afterthought, bought… Words containing 'ough'- although, bough Adverbs of possibility and frequency- certainly, definitely… Challenge words	pronouns and conjunctions Using possessive pronouns to show possession Identifying pronouns by their function Introducing different types of pronouns Recognising ambiguity in the use of pronouns Rewording sentences to clarify pronoun references Using noun-phrases to convey information concisely Introducing indirect speech and comparing it to direct speech Using verb forms with auxiliary verbs- e.g. progressive and perfect forms Using present and perfect verb forms to mark relationships of time and clause Secure use of compound sentences using coordination conjunctions Develop multi-clause sentences- main and subordinate clauses with a full range of conjunctions Expanded –ed clauses as a starters and drop in –ed clauses Revisit simile and introduce metaphor, personification and onomatopoeia	• multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **Fractions, Decimals and Percentages** • add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • read and write decimal numbers as fractions [for example, 0.71 = 71/100] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of 1/2,1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25 **Measurement** • convert between different units of metric measure	conductivity (electrical and thermal) and response to magnets. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. • Working scientifically – Use and develop keys and other information records to identify, classify and describe living things and materials (non-statutory). – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. – Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. – Using test results to make predictions to set up further comparative and fair tests. – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). **Animals Including Humans** ***Note: Teach within the boundaries defined by The State of Qatar*** • Describe the changes as humans develop to old age. • Working scientifically – Explore ideas and raise different kinds of questions (non-statutory). – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. – Explore ideas and raise different kinds of		-The weather patterns in a climate zone. -How to write a weather forecast. The characteristics of climate zones. Climate is the average daily and seasonal weather patterns over a long period of time. The Equator is an invisible line that runs around the centre of the Earth. The closer you live to the Equator, the hotter it is. As the Earth is tilted on an axis, the Northern and Southern Hemispheres experience different types of weather at the same time of the year. **Africa:** **KS2 Locational knowledge Short Unit** – To locate the world's continents and countries. Explore the World – Places – Africa Africa – Continent Overview – Sneak a Peek Plus 19 country spotlights Kenya – Landscape, Climate, Wildlife, People, Economy, Key Facts Zambia – Key Facts, Living in Zambia, Natural Sights, Conservation Explore the World – Global Knowledge – Virtual Safari Virtual Safari – 19 animal profile pages Global Knowledge – Mugurameno Village Contrasting locality – take a tour of a rural village in Zambia – Mugurameno Village Watch a film of the different features of Africa Take a flight over South Africa How farmers in Africa keep green beans cool? How farmers in Ghana transport fresh food The journey of a green bean from Kenya Visit Ravine Roses in Kenya		-Considering the proportions of individual components. -Creating a 3D stuffed toy from a 2D design. -Measuring, marking and cutting fabric accurately and independently. -Creating strong and secure blanket stitches when joining fabric. -Threading needles independently. -Using appliqué to attach pieces of fabric decoration. -Sewing blanket stitch to join fabric. -Applying blanket stitch so the spaces between the stitches are even and regular. -Testing and evaluating a product and giving points for further improvements. **Knowledge:** -To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. -To understand that it is easier to finish simpler designs to a high standard. -To know that soft toys are often made by creating appendages separately and then attaching them to the main body. -To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.

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				• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes • estimate volume [for example, using blocks to build cuboids] and capacity [for example, using water] **Statistics** • complete, read and interpret information in tables, including timetables • solve comparison, sum and difference problems using information presented in a line graph	questions (non-statutory). – Identifying scientific evidence that has been used to support or refute ideas or arguments. – Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. **Life Cycles** • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Working scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas' (non-statutory). – recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. – Reporting and presenting f indings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.		Visit Mugurameno village in Zambia Go on a Zambian safari! Discover how wildlife in Africa is protected Meet Douglas the orphaned baby hippo Take a virtual tour of Egypt's Giza pyramids Learn why Egyptians celebrate the ancient holiday Sham al-Naseem Make a traditional dish from Uganda Make a traditional dish from Nigeria Watch a traditional Nigerian Efik marriage ceremony Learn about the Nigerian New Yam Festival Watch the 'Naming of a Child' ceremony from Nigeria Learn about the Igue, New Year Festival from Southern Nigeria		
Spring 2						**Benin** -Benin, in modern day Nigeria was an advanced society as long ago as a thousand years, in many ways more advanced than Saxon and Viking society at the time. -It's really important that people living in Britain today recognise how African societies such as Benin developed in their own right and not as a result of contact with Europeans. This helps combat some prejudices people have today thinking that all the important developments in world history took place in in the West. -Benin society was organised around the all-important Oba who lived in his own palace within a well-defended city. -The society is best remembered for its magnificent bronzes -At the end of the Victorian period soldiers of the British empire clashed with the inhabitants of Benin and looted a vast number of these superb bronzes many of which are still held in British museums		**Painting and Mixed Media: Portraits** **Skills:** Generating ideas: -Develop ideas more independently from their own research. Explore and record their plans, ideas and evaluations to develop their ideas towards an outcome. Using sketchbooks: -Confidently use sketchbooks for purposes including recording observations and research, testing materials and working towards an outcome more independently. Making skills: -Work with a range of media with control in different ways to achieve different effects, including experimenting with the techniques used by other artists. -Combine a wider range of media, e.g. photography and digital art effects. -Create in a more sustained way, revisiting artwork over time and applying their understanding of tone, texture, line, colour and form. Knowledge of artists: -Research and discuss the ideas and approaches of artists across a variety of disciplines, being able to describe how the cultural	

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						-The debate about whether the Benin bronzes should be returned still rumbles on. There are arguments on both side.		and historical context may have influenced their creative work. -Discuss how artists create work with the intent to create an impact on the viewer. -Consider what choices can be made in their own work to impact their viewer. Evaluating and analysing: -Discuss the processes used by themselves and by other artists, and describe the particular outcome achieved. -Use their knowledge of tools, materials and processes to try alternative solutions and make improvements to their work. **Knowledge:** Formal elements: -Colour: Artists use colour to create an atmosphere or to represent feelings in an artwork, for example by using warm or cool colours. -Pattern: Artists create pattern to add expressive detail to art works, for example Chila Kumari Singh Burman using small everyday objects to add detail to sculptures. -Tone: Tone can help show the foreground and background in an artwork. Making skills: -How to develop a drawing into a painting. -How to create a drawing using text as lines and tone. -How to experiment with materials and create different backgrounds to photograph, exploring different angles. -How to adapt an image to create a new one. -How to combine materials to create an effect. -How to choose colours to represent an idea or atmosphere. -How to develop a final composition from sketchbook ideas. Knowledge of artists: -Artists are influenced by what is going on around them, for example, culture, politics and technology.	

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								-Artists use self-portraits to represent important things about themselves. -Artists can choose their medium to create a particular effect on the viewer. -Artists can combine materials, for example, digital imagery, with paint or print. Evaluating and analysing: -People make art to portray ideas about identity. -Talking about plans for artwork, or evaluating finished work, can help improve what artists create. -Comparing artworks can help people understand them better. -How to use a photograph as a starting point for a mixed-media artwork. -How to take an interesting portrait. **Local artist visit or museum of Islamic Art visit.*	
Summer 1	**Fiction** Film Narrative **Non-fiction** Instructions **Poetry** Tanka	Homophones and near homophones- advice, advise… Homophones- aisle, isle… Homophones- bridal, bridle… Homophones and near homophones- cereal, serial Homophones and near homophones- affect, effect Words with hyphens- co-ordinate, co-author Challenge Words Revision words	Sentence reshaping techniques- lengthening or shortening sentences for meaning/ or effect Recognising and correcting double negatives in sentences Using a range of determiners to specify known or unknown nouns Using brackets, dashes and commas to indicate parenthesis Using commas to clarify meaning and avoid ambiguity Introducing relative clauses that refer to a whole clause rather than a noun Drop in relative clauses using who /which /whose /that Using different types of sentence-varying sentence length, order and focus Converting noun and adjectives into verbs using suffixes (-ly, -ise, -en, -ate) Understanding how prefixes (dis-, mis-, over-, re-, de-) change the meaning of words	**Place Value** • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • count forwards and backwards with positive and negative whole numbers, including through zero **Fractions, Decimals and Percentages** • read and write decimal numbers as fractions [for example, 0.71 =71/100] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places **Measurement** • convert between different units of metric measure • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • use all four operations to solve problems involving measure [for example, length, mass, volume,	**Reproduction** ***Note: Teach within the boundaries defined by The State of Qatar*** • Describe the life process of reproduction in some plants and animals. • Working scientifically – Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). – Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs. – Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. – Identifying scientific evidence that has been used to support or refute ideas or arguments.		**Mountains** **What are mountains like?** -What a mountain is. -The features of a mountain. -How mountains are formed. -Mountain climates. -The UK and world's highest mountains. The importance of the Himalayas. A mountain is a landform that sticks up, high above the surrounding land. It is much taller than a hill (600 metres or above, in the UK) and is often found grouped with others in a mountain range. Mountains are formed when two of the earth's plates collide and land is pushed upwards or folded. Mountains have their own climates. *Virtual fieldwork lesson – Base Camp, Everest.*		**Structures: Bridges** **Skills:** -Designing a stable structure that is able to support weight. -Creating a frame structure with focus on triangulation. -Making a range of different shaped beam bridges. -Using triangles to create truss bridges that span a given distance and support a load. -Building a wooden bridge structure. -Independently measuring and marking wood accurately. -Selecting appropriate tools and equipment for particular tasks. -Using the correct techniques to saw safely. -Identifying where a structure needs reinforcement and using card corners for support. -Explaining why selecting appropriate materials is an important part of the design process. -Understanding basic wood functional properties. -Adapting and improving own bridge structure by identifying points of weakness and

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				money] using decimal notation, including scaling • use all four operations to solve problems involving measure [for example, money] • solve problems involving converting between units of time • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes • estimate volume [for example, using blocks to build cuboids] and capacity [for example, using water] **Geometry** • distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • use the properties of rectangles to deduce related facts and find missing lengths and angles • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees • identify: ¬angles at a point and one whole turn (total 360°) ¬angles at a point on a straight line and a 1/2 turn (total 180°) ¬other multiples of 90° • identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	– Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. – Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. – Using test results to make predictions to set up further comparative and fair tests. **Reversible and Irreversible Changes** • Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, and the action of acid on bicarbonate of soda. • Working scientifically – Using test results to make predictions to set up further comparative and fair tests. – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. – Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate. – Use relevant scientific language and illustrations to discuss, communicate and justify				reinforcing them as necessary. -Suggesting points for improvements for own bridges and those designed by others. **Knowledge:** -To understand some different ways to reinforce structures. -To understand how triangles can be used to reinforce bridges. -To know that properties are words that describe the form and function of materials. -To understand why material selection is important based on their properties. -To understand the material (functional and aesthetic) properties of wood.
Summer 2						**Tudors** -Henry VIII and his daughter Elizabeth I between them ruled powerfully for over three quarters of the period. -Henry VIII famously married 6 times and was very keen to produce a male heir. He was such a strong ruler that he would even have two of his wives beheaded. -One of the most important and long-lasting changes was what was known as the Reformation where Protestantism largely replaced Catholicism. -Elizabeth I was a powerful and successful ruler, showing how strong women could be as rulers. -During the later period the exploits of Francis Drake helped to make Britain a strong country, especially after Britain defeated the Spanish Armada, and set up colonies in America -The later period saw the flowering of the arts, especially the theatre and the plays of Shakespeare.		**Drawing: Depth, Emotion and Movement** **Skills:** **Generating ideas:** -Developing ideas more independently from their own research. -Exploring and recording their plans, ideas and evaluations to develop their ideas towards an outcome. **Using sketchbooks:** -Confidently using sketchbooks for purposes including recording observations and research, testing materials and working towards an outcome more independently. **Making skills:** -Working with a range of media with control in different ways to achieve different effects, including experimenting with the techniques used by other artists. -Creating in a more sustained way, revisiting artwork over time and applying their understanding of tone, texture, line, colour and form. **Knowledge of artists:** -Researching and discussing the ideas and approaches of artists across a variety of disciplines, being able to describe how the cultural and historical context may have influenced their creative work. -Discussing how artists create work with the	

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					their scientific ideas (non-statutory). – Identifying scientific evidence that has been used to support or refute ideas or arguments. **Secondary Science teacher visit or visit to secondary school science lab to learn about reversible/irreversible changes*. **Plastic Pollution** • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. **Beach clean-up to be done at end of term 1/start of term 2* **Sustainability Unit of Work**			intent to create an impact on the viewer. -Considering what choices can be made in their own work to impact their viewer. **Evaluating and analysing:** -Discussing the processes used by themselves and by other artists and describing the particular outcome achieved. -Considering how effectively pieces of art express emotion and encourage the viewer to question their own ideas. -Using their knowledge of tools, materials and processes to try alternative solutions and make improvements to their work. **Knowledge:** **Formal elements:** -**Shape:** Shapes can be used to place the key elements in a composition. -**Line:** Lines can be used by artists to control what the viewer looks at within a composition, eg by using diagonal lines to draw your eye into the centre of a drawing. -**Pattern:** Artists create pattern to add expressive detail to art works, for example Chila Kumari Singh Burman using small everyday objects to add detail to sculptures. -**Texture:** How to create texture on different materials. **-Making skills:** Use lines and marks in a creative way that might look more expressive and gestural, e.g. showing the essence of movement or emotion. -Capture the essence of a subject through lines and marks rather than precise form, e.g. communicating emotion or emphasising certain elements of a composition. -Describe the quality of lines, including identifying the movement conveyed by different lines, e.g. sweeping lines to suggest a flowing motion, sharp to suggest speed. -Identify qualities and techniques that resonate and begin to develop	

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								personal style and preferences. -Refine tonal shading to show greater graduations in tone. -Blend to smooth transitions in tone. -Use shading techniques such as cross hatching, to create texture as well as depth. -Use sketching to experiment with ideas, layout and shading. -Consider balance and symmetry / asymmetry in compositions. -Start using size to develop a foreground, midground and background in compositions. **-Knowledge of artists:** Artists are influenced by what is going on around them; for example, culture, politics and technology. -How an artwork is interpreted will depend on the life experiences of the person looking at it. -Artists can choose their medium to create a particular effect on the viewer. -**Evaluating and analysing:** People make art to express emotion. -People make art to portray ideas about identity.	