Mellers Curriculum LKS2				
	Which skills are the children learning?	**What core knowledge will the children acquire?**	**Year 3 Learning Ladders**	**Year 4 Learning Ladders**
Science	1. to investigate and explain how scientific and technological developments affect the physical and living worlds 2. to explore and explain practical ways in which science can contribute to a more sustainable future 3. to explore and explain how time measurement relates to day and night and the Earth's place in the solar system 4. to apply scientific knowledge and understanding to grow healthy plants and explain how humans and other animals stay fit and healthy 5. to investigate the physical characteristics of the local environment and the living things in it, comparing them with those from another locality 6. to identify, group and select materials using properties and behaviours that can be tested, and identify and group living things using observable features and other characteristics 7. to apply knowledge and understanding to describe and explain the structure and function of key human body systems including reproduction 8. to investigate the structure, function, life cycle and growth of flowering plants and how these grow and are used around the world 9. to investigate, identify and explain the benefits of micro-	-to ask relevant questions and using different types of scientific enquiries to answer them -to set up simple practical enquiries, comparative and fair tests -to make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers -to gather, record, classify and present data in a variety of ways to help in answering questions -to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables -to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -to identify differences, similarities or changes related to simple scientific ideas and processes -to use straightforward scientific evidence to answer questions or to support their findings. to identify and name a variety of living things (plants and animals) in the local and wider environment, using classification keys to assign them to groups -to recognise that environments can change and that this can sometimes pose dangers to living things. to identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers -to explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant -to investigate the way in which water is transported within plants -to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. -to identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat	**Rocks** I can compare different kinds of rocks based on their appearance I can compare different kinds of rocks based on their simple physical properties I can describe how fossils are formed I can describe the fossils I have observed I can describe how soils forms I can research the different kinds of living things whose fossils are found in sedimentary rock I can observe how rocks change over time **Plants** I can identify the different parts of a flowering plant I can describe the functions and different parts of a flowering plant I can describe how the structure of the plant links to its function I can identify the requirements of a plant for life and growth I can describe how water is transported through a plant I can describe how seeds are formed I can describe how seeds are dispersed I can describe the process of pollination **Light** I can recognise that we need light in order to see things I can describe what happens when there is an absence of light I can describe what happens when light hits a mirror I can describe how light from the sun can be dangerous and the ways that I can protect my eyes I can recognise how shadows are formed when a solid object blocks the light I can investigate how the size of shadows change I can find patterns in the way that the size of shadows change **Forces and Magnets** I can describe how objects move on different surfaces I can investigate that some forces need contact between two objects e.g. push and pull I can describe how pushes and pulls can alter the movement and speed of an object	**Sound** I can identify how sounds are made I can describe how sounds travel to my ear e.g. vibrations through the air I can recognise patterns between the pitch of a sound and the features of an object that produced the sound I can recognise patterns between the volume of a sound and the strength of the vibrations that produced it I can describe what happens when you move away from the source of a sound **Materials** I can compare and describe solids, gases and liquids I can group materials by whether they are a solid, liquid or gas I can observe how materials change state when heated or cooled I can use the terms evaporation and condensation when describing the water cycle **Living Thing and their Habitats** I can group animals into vertebrates and invertebrates I can group plants into categories such as flowering plants and non-flowering plants I can use keys to identify living things in my local environment I can recognise that environments change over time I understand the impact humans have on my local environment I can research and describe the positive human effects on an environment such as creating nature reserves I can research and describe the negative human effects on an environment such as dropping litter **Electricity** I can identify common appliances that run on electricity I can identify the basic parts of a simple series electrical circuit e.g. cells, wires, bulbs, switches and buzzers I can create a simple series electrical circuit using basic parts I can describe what will happen if the circuit isn't complete I can describe the impact of an open and / or closed switch on a simple series circuit I can recognise and describe some common conductors I can recognise and describe some common insulators I can identify metals that are good conductors I can describe how to work safely with electricity

	organisms and the harm they can cause 10. to investigate and explain how plants and animals are interdependent and are diverse and adapted to their environment as a result of evolution 11. to identify, group and select materials using properties and behaviours that can be tested, and identify and group living things using observable features and other characteristics 12. to investigate what happens when materials are mixed, and whether and how they can be separated again 13. to explore, explain and use reversible and non-reversible changes that occur in the world around them and how changes can be used to create new and useful materials 14. to investigate how light and sound travel and how shadows and sounds are made 15. to investigate the properties and behaviour of light and sound in order to describe and explain familiar effects 16. to investigate the effects of different forces and how they can use these to move mechanical parts or objects in specific ways 17. to investigate combinations of forces 18. to investigate and explain the effect of changes in electrical circuits	-to identify that humans and some animals have skeletons and muscles for support, protection and movement. describe the simple functions of the basic parts of the digestive system in humans -to identify the different types of teeth in humans and their simple functions -to construct and interpret a variety of food chains, identifying producers, predators and prey. -to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties -to describe in simple terms how fossils are formed when things that have lived are trapped within rock -to recognise that soils are made from rocks and organic matter to compare and group materials together, according to whether they are solids, liquids or gases -to observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) -to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. -to notice that light is reflected from surfaces -to find patterns that determine the size of shadows. to identify how sounds are made, associating some of them with something vibrating -to find patterns between the pitch of a sound and features of the object that produced it -to find patterns between the volume of a sound and the strength of the vibrations that produced it. -to notice that some forces need contact between two objects, but magnetic forces can act at a distance -to observe how magnets attract or repel each other and attract some materials and not others -to compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials -to describe magnets as having two poles -to predict whether two magnets will attract or repel each other, depending on which poles are facing. to identify common appliances that run on electricity	I can observe how magnets attract and repel each other I can investigate how magnets attract some materials and not others I can describe how magnets have two poles I can predict whether two magnets will repel or attract one another depending on their poles **Animals Including Humans** I can identify that animals, including humans, get their nutrition from what they eat I can describe why animals need the right type and amount of nutrition I can research and design my own balanced diet using different food groups I can describe the function of a skeleton in humans I can describe the function of muscles in humans I can identify animals with and without skeletons I can describe what would happen if a human did not have a skeleton **Working Scientifically** I can gather, record, classify and present data in a variety of ways to help answer questions I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables I can identify differences, similarities or changes to simple scientific ideas and processes I can talk about criteria for grouping, sorting and classifying, and use a simple key	**Animals Including Humans** I can identify and describe the basic parts of the human digestive system I can identify and describe the different types of teeth in humans and how they function I can compare the teeth of herbivores and omnivores I can describe how to look after my teeth I can identify and describe a producer in a food chain I can identify and describe a predator in a food chain I can identify and describe prey in a food chain I can interpret a food chain I can create my own food chain **Working Scientifically** I can use simple scientific evidence to answer questions or to support my findings I can use results to make simple conclusions, make predictions and suggest improvements I can report on findings from enquiries, including oral and written explanations, displays or presentations I can set up simple practical enquiries, comparative and fair tests

		-to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers -to identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery -to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit -to recognise some common conductors and insulators, and associate metals with being good conductors.		
ART	1. To explore and refine a range of techniques, materials, processes and media, including digital media, to draw, sculpt, model, design, paint and print 2. To design and create images and artefacts, expressing ideas for clearly defined purposes	- to create sketch books to record their observations and use them to review and revisit ideas -to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (e.g. pencil, charcoal, paint, clay) - to find out about great artists, architects and designers in history.	I can demonstrate control when using different materials I can review my sketches and ideas, gathering information and resources to help me develop my art work I can create sketches to record my observations I can describe the works of different artists, craft workers and designers I can evaluate the success of the materials and techniques I have used	I can explain how a particular technique I used achieves a desired effect and the impact this has on my work I can develop my technical skills when using new materials or techniques I can research using a variety of resources to help develop ideas for my artwork I continue to use sketches to record my observations I can describe artists', architects' and designers' ideas and techniques I can recognise how great artists, architects and designers had an impact on art history I can compare my work to that of my peers and other artists to see how to improve my creations
MUSIC	1. To listen carefully, recognise and use repeated patterns and increase aural memory 2 To perform with control and awareness of audience and what others are playing or singing 3. To compose and perform simple melodies and accompaniments recognising different musical elements and how they can be used together to compose music 4. To recall, plan and explore sounds using symbols and ICT	-to play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression -to improvise and compose music for a range of purposes using the inter-related dimensions of music -to listen with attention to detail and recall sounds with increasing aural memory -to use and understand staff and other musical notations -to appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians -to develop an understanding of the history of music.	I can represent sounds with symbols Within a group, I can create and play layered music with an awareness of how the layers fit together I can choose and order sounds within simple structures such as beginning, middle, end, and in response to given starting points I can begin to discuss how music has developed over time I can identify instruments I hear and recognise how they are played I can identify some of the structural and expressive aspects of music heard (e.g. starts quiet and gets gradually louder) I can develop an awareness of the music's context and purpose I can maintain an independent part within a group	I can improvise and compose with an awareness of context and purpose I can improvise and compose within known structures featuring musical changes I can recognise different compositions and name their composer I can give opinions, using appropriate musical vocabulary to justify these I can identify some of the structural and expressive aspects of music heard (e.g. rhythmic repetition on the drum) I can develop an awareness of the music's context, purpose and the composer's intent I can listen to music with layered parts, noticing how the layers fit together I can maintain an independent part within a group, using controlled playing techniques

			I can keep to a steady beat I can copy and match simple patterns in 2, 3, and 4 metre I can use the correct technique for a range of percussion instruments, keyboards, and my own instruments if necessary I can sing rounds and partner songs, maintaining my part	I can maintain rhythmic and melodic repetition in 2, 3, and 4 metre I can sing rounds and partner songs, maintaining my part
Languages	1. to foster curiosity and deepen understanding about the world 2. to communicate for practical purposes, responding to spoken and written language from authentic sources 3. to develop confidence in speaking fluently and spontaneously in another language 4. to discover and develop an appreciation of a range of writing from other languages studied	-to listen attentively to spoken language and show understanding by joining in and responding -to explore the patterns and sounds of language through songs and rhymes and link the spelling, sound and meaning of words -to engage in conversations; ask and answer questions; express opinions and respond to those of others; seek clarification and help -to speak in sentences, using familiar vocabulary, phrases and basic language structures -to develop accurate pronunciation and intonation so that others understand when they are reading aloud or using familiar words and phrases -to present ideas and information orally to a range of audiences -to read carefully and show understanding of words, phrases and simple writing -to appreciate stories, songs, poems and rhymes in the language -to broaden their vocabulary and develop their ability to understand new words that are introduced into familiar written material, including through using a dictionary -to write phrases from memory, and adapt these to create new sentences, to express ideas clearly -to describe people, places, things and actions orally and in writing -to understand basic grammar appropriate to the language being studied, including (where relevant): feminine, masculine and neuter forms and the conjugation of high-frequency verbs; key features and patterns of the language; how to apply these,	I can link sounds to meanings I can recognise question forms and negatives I can identify specific sounds, phonemes and words I can make links between some phonemes, rhymes and spellings and read aloud familiar words I can notice the spelling of familiar words I can recognise how sounds are represented in written form I can identify specific sounds, phonemes and words I can communicate with others using simple words and phrases I can use the correct pronunciation in spoken work I can recognise question forms and negatives I can write some familiar simple words accurately using a model I can write some familiar simple words from memory	I can listen to and identify words and short phrases I can communicate by answering a wider range of questions I can sort words according to sounds I can recognise negative statements I can recognise categories of words (e.g. colours) and word classes I can read and understand familiar words and short written phrases I can follow a short text while listening and reading, saying some of the text I can read a wider range of words, phrases and sentences aloud I can apply phonic knowledge to decode text I can recognise and apply simple agreements (e.g. gender, plural, singular) I can recognise negative statements I can recognise categories of words (e.g. colours) and word classes I can use question forms I can use phonic knowledge to support accurate pronunciation and to say simple words and phrases I can write some familiar words and phrases (noun & gender and adjectives) from memory I can copy simple structures I can use question forms I can use phonic knowledge to support accurate pronunciation and to write simple words and phrases I can recognise and apply simple agreements (e.g. gender, plural, singular)

		for instance, to build sentences; and how these differ from or are similar to English		
DANCE / DRAMA	1. To explore a range of actions, dynamics, space and relationships, and how to create dance motifs and compose simple dances 2. To learn, practise, refine and perform dance phrases with physical control, expression, rhythmic timing, musicality and an awareness of other performers 3. To adopt, sustain and develop a range of roles for different purposes using a range of dramatic conventions 4. To create and perform in order to make and convey meaning	-to perform dances using a range of movement patterns		
Mellers Curriculum				
	Which skills are the children learning?	**What core knowledge will the children acquire?**	**Year 3 Learning Ladders**	**Year 4 Learning Ladders**
GEOGRAPHY	1. to understand how identities, communities, places, cultures and traditions have changed and are changing over time 2. to identify patterns in communities, places and past events by searching for and locating information using keywords, and carrying out searches, fieldwork and surveys 3. to discover where significant places are located in the UK, Europe and the wider world 4. to identify the similarities and differences between places and environments, and	**Location knowledge** -to locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities -to name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time -to identify the position and significance of latitude, longitude, Equator,	I can use simple fieldwork and observational skills to study the geography of the key human and physical features of the schools surrounding environment I can begin to use Geographical word I can observe and describe physical and human features of the local area and other places I can begin to compare these features to another place beyond the local area I can begin to understand how people effect the environment I know about the local area I can describe simply where places are beyond the local area	I can use skills and evidence to answer a range of geographical questions I can begin to investigate answers and use the correct vocabulary to share findings I can begin to describe physical and human features and begin to offer reasons for observations and opinions about places and environments I can recognise how people try to improve and keep environments safe I can begin to describe and compare features of different locations and offer explanations for the locations of some of those features I know about the local area and begin to appreciate the importance of wider geographical location in understanding places

	understand how they are linked 5. to appreciate the relationship between the physical, built and economic and social environments 6. to know how different ways in which people live around the world sometimes have consequences for the environment and the lives of others from local to global scales	Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night) **Place knowledge** -to understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America **Human and physical geography** -to describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water **Geographical skills and fieldwork** -to use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied -to use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world -to use fieldwork to observe, measure and record the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies.	I can describe what gives the local area character and simply describe what other places are like beyond this area	I am aware that different places may have both similar and different characteristics
HISTORY	1. to explore the different ways we can find out about the past and how to understand the evidence 2. to know how significant events, developments or individuals and groups have influenced their locality, the UK	-**to recognise changes in Britain from the Stone Age to the Iron Age, this could include:** late Neolithic hunter-gatherers and early farmers, e.g. Skara Brae, Bronze Age religion, technology and travel, e.g. Stonehenge, Iron Age hill forts: tribal kingdoms, farming, art and culture **-to understand the impact of the Roman Empire on Britain, this could include:**	I am aware of the different periods of the past and can identify some of the differences and similarities between the periods I have knowledge and understanding of some of the main events, people and changes from the past I can identify some of the different ways in which the past is represented.	I am aware of how people's lives have shaped this nation I can describe and compare different periods from the past I can explain some of the main events and give reasons for, and results of, the changes I can make connections between local, regional, national and international history I can understand that aspects of the past have been represented and interpreted in different ways

	and beyond in the recent and distant past 3. to understand about the movement and settlement of people in different periods of British history, and the impact these have had	Julius Caesar's attempted invasion in 55-54 BC, the Roman Empire by AD 42 and the power of its army successful invasion by Claudius and conquest, including Hadrian's Wall, British resistance, e.g. Boudica, "Romanisation" of Britain: sites such as Caerwent and the impact of technology, culture and beliefs, including early Christianity -**to understand Britain's settlement by Anglo-Saxons and Scots, this could include:** Roman withdrawal from Britain in c. AD 410 and the fall of the western Roman Empire, Scots invasions from Ireland to north Britain (now Scotland), Anglo-Saxon invasions, settlements and kingdoms: place names and village life, Anglo-Saxon art and culture, Christian conversion Canterbury, Iona and Lindisfarne -**to know about the Viking and Anglo-Saxon struggle for the Kingdom of England to the time of Edward the** **Confessor, this could include:** Viking raids and invasion resistance by Alfred the Great and Athelstan, first king of England, further Viking invasions and Danegeld, Anglo-Saxon laws and justice, Edward the Confessor and his death in 1066 **-to complete a local history study, for example:** a depth study linked to one of the British areas of study listed above a study over time tracing how several aspects of national history are reflected in the locality (this can go beyond 1066), a study of an aspect of history or a site dating from a period beyond 1066 that is significant in the locality. **-to extend pupils' chronological knowledge beyond 1066 through a study of an aspect or theme in British history, for example:** the changing power of monarchs using case studies such as John, Anne and Victoria, changes in an aspect of social history, such as crime and punishment from the Anglo-Saxons to the present	I can give reasons for and results of the main events and changes using simple concepts such as cause and effect	I can understand more complex, abstract concepts

		or leisure and entertainment in the 20th Century, the legacy of Greek or Roman culture (art, architecture or literature) on later periods in British history, including the present day, a significant turning point in British history, e.g. the first railways or the Battle of Britain, the achievements of the earliest civilizations **–to complete an overview of where and when the first civilizations appeared** **and a depth study of one of the following:** Ancient Sumer; The Indus Valley; Ancient Egypt; The Shang Dynasty of Ancient China, Ancient Greece – a **–to study Greek life and achievements and their influence on the western world** **-to contrast a non-European society with British history** - one study chosen from: early Islamic civilization, including a study of Baghdad c. AD 900; Mayan civilization c. AD 900; Benin (West Africa) c. AD 900-1300.		
Mellers Curriculum				
	Which skills are the children learning?	**What core knowledge will the children acquire?**	**Year 3 Learning Ladders**	**Year 4 Learning Ladders**
P.E.	1. to control and coordinate their bodies and movements with increasing skill and confidence 2. to follow and apply more complex rules in a range of competitive and cooperative games and physical activities 3. to develop physical skills and techniques by observation, evaluation and refinement; and to use repetition and practice to reach higher standards 4. to use tactics, strategies and compositional ideas to achieve set objectives and improve performance	-to use running, jumping, throwing and catching in isolation and in combination -to play competitive games, modified where appropriate, such as badminton, basketball, cricket, football, hockey, netball, rounders and tennis, and apply basic principles suitable for attacking and defending -to develop flexibility, strength, technique, control and balance, for example through athletics and gymnastics -to perform dances using a range of movement patterns -to take part in outdoor and adventurous activity challenges both individually and within a team -to compare their performances with previous ones and demonstrate improvement to achieve their personal best.	I can demonstrate a wider range of dance movements I can take part in activities that develop my flexibility, strength, control and balance I can play competitive games, explain the rules and how to succeed I can run, jump, throw and catch in isolation and combination	I can take part in outdoor and adventurous activities both individually and in a team I can create my own dances and suggest improvements I can continue to develop my flexibility, strength, control and balance through relevant activities I can apply the principles of defending and attacking when playing team sports I can continue to run, jump, throw and catch in isolation and combination

	5. to recognise ways in which stamina and flexibility can be improved through daily physical activity 6. to use a range of strokes effectively	- to swim competently, confidently and proficiently over a distance of at least 25 metres		
P.S.H.E. (non-statutory)	1.to know about the relationship and balance between physical activity and nutrition in achieving a physically and mentally healthy lifestyle 2. to plan and help prepare simple healthy meals 3. to recognise the impact of some harmful and beneficial substances on their body 4. to understand the physical and emotional changes that take place as they grow and approach puberty 5. to know how to form and maintain relationships with a range of different people 6. to have strategies for managing and controlling strong feelings and emotions	**Developing confidence and responsibility and making the most of their abilities** - to talk and write about their opinions, and explain their views, on issues that affect themselves and society - to recognise their worth as individuals by identifying positive things about themselves and their achievements, seeing their mistakes, making amends and setting personal goals -to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action - to recognise, as they approach puberty, how people's emotions change at that time and how to deal with their feelings towards themselves, their family and others in a positive way -to know about the range of jobs carried out by people they know, and to understand how they can develop skills to make their own contribution in the future - to look after their money and realise that future wants and needs may be met through saving. **Developing a healthy, safer lifestyle** -to know what makes a healthy lifestyle, including the benefits of exercise and healthy eating, what affects mental health, and how to make informed choices -to recognise that bacteria and viruses can affect health and that following simple, safe routines can reduce their spread -to understand about how the body changes as they approach puberty -to know which commonly available substances and drugs are legal and illegal, their effects and risks - to recognise the different risks in different situations and then decide how to behave responsibly, including sensible road use, and judging what kind of physical contact is acceptable or unacceptable -to recognise that pressure to behave in an unacceptable or risky way can come from a variety of sources, including people they know, and how to ask for help and use basic techniques for resisting pressure to do wrong -to know school rules about health and safety, basic emergency aid procedures and where to get help. **Developing good relationships and respecting the differences between people** -to know that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view - to think about the lives of people living in other places and times, and people with different values and customs - to be aware of different types of relationship, including marriage and those between friends and families, and to develop the skills to be effective in relationships - to realise the nature and consequences of racism, teasing, bullying and aggressive behaviours, and how to respond to them and ask for help -to recognise and challenge stereotypes -to know that differences and similarities between people arise from a number of factors, including cultural, ethnic, racial and religious diversity, gender and disability - to know where individuals, families and groups can get help and support.		
Mellers Curriculum				
	Which skills are the children learning?	**What core knowledge will the children acquire?**	**Year 3 Learning Ladders**	**Year 4 Learning Ladders**
D.T.	1. to apply knowledge, skills and understanding when designing and making products	**Design** -to use research and develop design criteria to inform the design of innovative, functional,	I can recognise where and how ingredients are grown, reared, caught and processed I can follow a recipe and use simple cooking techniques	I can describe seasonality in food production I know the difference between food that is grown and food that is processed

	using construction materials and textiles 2. to use a variety of methods to explore design alternatives and to test fitness for purpose of materials, components and techniques 3. to apply knowledge of mechanical and electrical control when designing and making functional products 4. to refine sequences of instructions to control events or make things happen using ICT	appealing products that are fit for purpose, aimed at particular individuals or groups -to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** -to select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately -to select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** -to investigate and analyse a range of existing products -to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work -to understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** -to apply their understanding of how to strengthen, stiffen and reinforce more complex structures -to understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages -to understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors -to apply their understanding of computing to programme, monitor and control their products. **Food** -to understand and apply the principles of a healthy and varied diet -to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	I can create a menu that is varied and healthy I can develop my ideas using prototypes and pattern pieces I can explain how design features of my product will work I can describe the purpose of my products I can adapt my design criteria as I develop my product to meet my needs I can look at existing products and decide why and how they have been made I can accurately measure and form the sections of my product I can select from, and use, a wider range of materials and components e.g. construction material, textiles and ingredients I can select a wider range of tools to use when making my product I can investigate what a mechanical system could add to my product When creating a complex structure, I can decide how to strengthen, stiffen and reinforce it	I can write a simple recipe and use my cooking techniques to create the dish I can create fit for purpose products by researching the needs of my user I can recognise if I need to make my product more appealing by changing features I can discuss how my product features will be appealing to myself and others I can consider the views of others as I create my product I can discuss inventors and their contribution to design and technology I understand where and how products were made I can accurately add finishing touches to my product I can recognise the benefits and disadvantages to using my selected tools and materials I can discuss why I have selected the tools and materials for my products I can suggest improvements when using a mechanical system I can add a mechanical system to my product

		-to understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.		
COMPUTING	1. to understand and apply the fundamental principles of computer science 2. to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. 3. to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. 4. to be responsible, competent, confident and creative users of information and communication technology	**Computing** -to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts -to use sequence, selection, and repetition in programs; work with variables and various forms of input and output -to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs -to understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration -to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content -to use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour -to select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	**Computer Science** I can describe how technology works and how computers process instructions and commands I can investigate how sequences, selections and repetition affects pre-made programs I can investigate how different variables can be changed and the effect this has on applications **Digital Literacy** I can use a search engine, understanding how results are selected and ranked I can use desktop tools to create pieces of work I can work collaboratively to produce documents, including presentations I can understand the uses for and features of simple databases I can create simple databases I can retrieve information from simple databases I can use data in pre-made databases to create charts and graphs With articles I have searched for, I can skim read to check their suitability and modify my search if necessary **E-Safety** I can recognise when behaviour online is unacceptable and know who to tell I understand that multiple people can contribute to a cloud-based system I understand how to communicate with others through digital technology (e.g. email)	**Computer Science** I can develop my understanding of how technology works and how computers process instructions and commands I can investigate how programs I create are affected by variables and differing inputs and outputs I can write and debug programs to accomplish a specific goal I can create programs to simulate real life situations **Digital Literacy** I can design and create a simple website I can evaluate and improve my website designs, understanding the impact on my target audience I can collect data and create my own basic database I can use a database to answer questions by constructing queries I understand computer networks including the internet, and how they provide multiple services such as the world wide web I can explain how computer networks offer the ability to communicate and collaborate **E-Safety** I know how emails work, can send an email with a subject and email addresses in 'to', 'cc' and 'bcc' fields I can recognise that information I use needs to be appropriate for my reader I understand that anyone can be an author on the internet and they can produce content that is offensive, rude and upsetting I can follow the school rules if I read anything that I think is offensive, rude and upsetting