|  | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Autumn/ Animals/ colours/ Nursery Rhymes | Festivals/ Families/ Nursery Rhymes | Winter/ Chinese New Year | Spring/ growing things/Easter/ <br> Farm animals | Traditional Stories/ Nursery Rhyme | Seaside \& Holidays |
| Nursery | *designing a fruit basket <br> * healthy eating (fruit and vegetables) | - Rice crispy cakes <br> - Hanukkah candle sticks | - Lanterns <br> - Dragon masks <br> - Food tasting | - Animal masks <br> - Design a farm <br> - Build a caterpillar | - Making sandwiches <br> - Construction role play <br> - Building houses | - Scissor skills <br> - Seaside collage <br> - Junk modelling <br> - Water/ sand play |
| Reception (ongoing development of cutting, joining, collage skills) | Marvellous me and my family tree | Celebrations | People who help us | Nocturnal animals | Growing and hatching | Shiver me timbers! |
|  | Scissor control Colour mixing | Fireworks Biscuit making Diwali clay lamps | Junk model Vehicle Chinese lanterns Chinese dragons | Mask making <br> Easter egg cakes (cooking) | Design a seed packet Fruit kebabs (cooking) | Octopus - paper folding Junk model boats |
| Year1 | Fun on the Farm | Let's Celebrate! Christmas, Diwali, Hanukah | Polar places | Once upon a time... Knights, Castles and Dragons | Where in the World... Safari Explorer's | Fun at the Seaside... |
|  | Soup tasting Soup making (cooking) | Sewing Christmas stocking | Build an igloo | Making a bird feeder | Making smoothies (cooking) | Minibeast house |
| Year 2 | The Great Fire of London | Blast from the Past | Fabulous Fairy tales | Crazy Crayons | Awesome Authors | Animal Antics |
|  | Building a fire Truck (axils) |  | Puppets |  | sandwiches (cooking) sandwich packaging |  |
| Year 3 | Prehistoric Britain | European Adventure | The Romans in Britain |  | Maps | Rivers Go With The Flow |
|  |  | Structures | Pizza |  | Lego Design challenge (including coding) |  |
| Year 4 | Anglo-Saxons \& Vikings |  |  |  |  | Ancient Egyptians |
|  |  | Christmas Card with a moving part <br> Diwali sewn designs | Bread | Lego Design challenge (including coding) |  |  |

## Purpose of Study (National Curriculum)

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

## Aims (National Curriculum)

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.


## Early Years Foundation Stage Curriculum

## Expressive Arts and Design

Creating with Materials ELG
_Children at the expected level of development will:
-Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function;
-Share their creations, explaining the process they have used;
-Make use of props and materials when role playing characters in narratives and stories.

|  | Key Stage 1 | Key Stage 2 |
| :---: | :---: | :---: |
| Skills and Content | Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. <br> When designing and making, pupils should be taught to: <br> Design <br> - design purposeful, functional, appealing products for themselves and other users based on design criteria <br> - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <br> Make <br> - select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] <br> - select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <br> Evaluate <br> - explore and evaluate a range of existing products <br> - evaluate their ideas and products against design criteria <br> Technical knowledge <br> - build structures, exploring how they can be made stronger, stiffer and more stable | Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. <br> When designing and making, pupils should be taught to: <br> Design <br> - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups <br> - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computeraided design <br> Make <br> - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <br> - 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 <br> Evaluate <br> - investigate and analyse a range of existing products <br> - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work |

- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
- understand how key events and individuals in design and technology have helped shape the world


## Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.


## Cooking and

 Nutrition
## Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.
Pupils should be taught to:

## Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.


## Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.


## Assessment \& Attainment Targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

At St Michael's we assess Design and Technology at the end of each topic.

## Design and Technology in the Early Years

## Nursery and Reception

| Construction | Paying with everyday objects such as empty boxes. blocks and construction materials. <br> Learning to construct with a purpose in mind, e.g. using scissors, glue, string and a hole-punch to make a bag to store items collected during a Forest School session. <br> Producing items that look and function more like purposeful objects. Children may begin to want to make bags for their shop, create signs for their library, put a lighting system into their cardboard house or explore ways of channelling water. |
| :---: | :---: |
| Structure and Joins | Making use of fixing and joining materials such as sellotape, masking tape, string, pipe cleaners. <br> Producing items which represent other objects, early efforts at making things, as with drawings, are often quite ambiguous. The box covered in glue with scraps of paper, paint and fabric stuck to it might be a house or a car - or a trap for monsters. Observing closely and replicating a structure. |
| Using a Range of Tools | Learning about planning and adapting initial ideas to make them better, e.g. a child might choose to use scissors, a stapler, elastic bands and glue to join bits together to make a toy vehicle. But they might then modify their initial idea by using masking tape. Children should use a range of tools including scissors, hole punch, stapler, glue spreader, rolling pin, cutter and grater. |
| Cooking | Beginning to understand some of the tools, techniques and processes involved in food preparation. E.g. taking turns stirring the mixture for a cake and then watching it rise while cooking. Children should practise stirring, mixing, pouring and blending ingredients during cookery activities <br> Early interest in playing with dough (or even pastry) (during free choice) may become more focused on producing something which can actually be eaten. |
| Exploration | Open-ended play enables children to explore materials, to work with tools and to observe and play with natural and manufactured objects. <br> Learning about how everyday objects work by dismantling things and looking closely at their component parts. |
| Discussion | Opportunities to discuss reasons that make activities safe or unsafe e.g. hygiene and electrical awareness. Opportunities to discuss appropriate use of senses e.g. when tasting different foods. Opportunities to use the language of designing and making, e.g. words such as 'join', 'build' and 'shape' as well as evaluative and comparative language - 'longer', 'shorter', 'lighter', 'heavier' and 'stronger'. Children should also learn to record their experiences by, for example, drawing, writing, voice recording or modelling. |

Progression of skills and knowledge in Design and Technology

|  | Technical knowledge <br> Materials/structures | Technical <br> knowledge - <br> Mechanisms | Technical knowledge - <br> Textiles | Technical knowledge - <br> Food and nutrition | Technical knowledge - <br> Electrical systems | Possible Enquiry <br> Questions (The <br> question will lead to <br> an authentic |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
| outcome.) |  |  |  |  |  |  |



| Year 4 <br> Lego Challenge | *measure carefully to avoid mistakes *attempt to make product strong *continue working on product even if original didn't work <br> *make a strong, stiff structure Christmas card with moving part <br> Diwali design | *select most <br> appropriate tools / <br> techniques <br> *explain alterations <br> to product after <br> checking it <br> *grow in confidence about trying new / different ideas. *use levers and linkages to create movement <br> Christmas card with moving part | *join different textiles in different ways <br> *choose textiles considering appearance and functionality *begin to understand that a simple fabric shape can be used to make a 3D textiles project | *explain how to be safe/hygienic *think about presenting product in interesting/ attractive ways <br> *understand ingredients can be fresh, pre-cooked or processed <br> *begin to understand about food being grown, reared or caught in the UK or wider world <br> *describe eat well plate and how a healthy diet=variety / balance of food and drinks *explain importance of food and drink for active, healthy bodies <br> *prepare and cook some dishes safely and hygienically *use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking <br> Bread (savoury and sweet) <br> * Links to Forest School | *use number of components in circuit *program a computer to control product Lego Challenge |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Progression of Skills and Knowledge Nursery, EYs and Key Stage 1

|  | Nursery | Early Years | Year 1 | Year 2 |
| :--- | :--- | :--- | :--- | :--- |
| Aspects |  |  |  |  |
| Design | *Select appropriate resources <br> from a given selection <br> *Use gestures, talking and <br> arrangements of materials and <br> components to show design | *Select appropriate resources <br> *Use gestures, talking and <br> arrangements of materials and <br> components to show design <br> *Use contexts set by the <br> teacher and themselves | * have own ideas <br> * explain what I want to do <br> *explain what my product is for, <br> and how it will work <br> * use pictures and words to plan, <br> begin to use models | * have own ideas and plan <br> what to do next <br> end describe how I may do it |


|  |  | *Use language of designing and making (join, build, shape, longer, shorter, heavier etc.) | * design a product for myself following design criteria *research similar existing products | * explain purpose of product, how it will work and how it will be suitable for the user * describe design using pictures, words, models, diagrams, begin to use ICT * design products for myself and others following design criteria <br> * choose best tools and materials, and explain choices * use knowledge of existing products to produce ideas |
| :---: | :---: | :---: | :---: | :---: |
| Make | - Construct with purpose and explain what they have made <br> * Use simple tools to cut and join <br> * Explain their makes | *Construct with a purpose, using <br> a variety of resources <br> *Use simple tools and techniques <br> *Build / construct with a wide range of objects <br> *Select tools \& techniques to shape, assemble and join <br> *Replicate structures with materials / components <br> *Discuss how to make an activity safe and hygienic <br> *Record experiences by drawing, writing, voice recording <br> *Understand different media can be combined for a purpose | *explain what I'm making and why <br> * consider what I need to do next <br> *select tools/equipment to cut, shape, join, finish and explain choices <br> *measure, mark out, cut and shape, with support <br> *choose suitable materials and explain choices <br> *try to use finishing techniques to make product look good *work in a safe and hygienic manner | *explain what I am making and why it fits the purpose *make suggestions as to what I need to do next. <br> *join materials/components together in different ways *measure, mark out, cut and shape materials and components, with support. <br> *describe which tools I'm using and why <br> *choose suitable materials and explain choices depending on characteristics. <br> *use finishing techniques to make product look good *work safely and hygienically |
| Evaluate |  | *Discuss how they would adapt their work <br> *Dismantle, examine, talk about existing objects/structures <br> *Consider and manage some risks | *talk about my work, linking it to what I was asked to do * talk about existing products considering: use, materials, how they work, audience, where they might be used | * describe what went well, thinking about design criteria * talk about existing products considering: use, materials, how they work, audience, |


|  |  | *Practise some appropriate safety measures independently *Talk about how things work *Look at similarities and differences between existing objects / materials / tools *Show an interest in technological toys *Describe textures | *talk about existing products, and <br> say what is and isn't good <br> * talk about things that other people have made *begin to talk about what could make product better | where they might be used; express personal opinion *evaluate how good existing products are *talk about what I would do differently if I were to do it again and why |
| :---: | :---: | :---: | :---: | :---: |
| Key Vocabulary <br> Making, construction and structure <br> Textiles <br> Food and healthy eating |  |  | planning, investigating design, evaluate, make, user, purpose, ideas, product, cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder <br> stitch, fabric, material, thread, cotton, needle, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, | investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder <br> stitch, fabric, material, thread, cotton, needle, joining and finishing techniques, tools, fabrics and components, template, <br> pattern pieces, mark out, join, decorate, <br> finish <br> fruit and vegetable names, names of equipment and |


|  |  |  | juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients | utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients |
| :---: | :---: | :---: | :---: | :---: |

Progression of Skills and Knowledge Nursery, EYs and Key Stage 1

|  | Year 3 | Year 4 |
| :---: | :---: | :---: |
| Aspects |  |  |
| Design | *begin to research others' needs <br> * show design meets a range of requirements <br> * describe purpose of product <br> * follow a given design criteria <br> * have at least one idea about how to create product <br> * create a plan which shows order, equipment and tools <br> *describe design using an accurately labelled sketch and words <br> * make design decisions <br> *explain how product will work <br> * make a prototype <br> * begin to use computers to show design | * use research for design ideas <br> * show design meets a range of requirements and is fit for purpose <br> *begin to create own design criteria <br> *have at least one idea about how to create product and suggest improvements for design. <br> * produce a plan and explain it to others <br> *say how realistic plan is. <br> *include an annotated sketch <br> *make and explain design decisions considering availability of resources <br> *explain how product will work <br> * make a prototype <br> *begin to use computers to show design. |
| Make | *select suitable tools/equipment, explain choices; begin to use them accurately <br> * select appropriate materials, fit for purpose. <br> * work through plan in order <br> *consider how good product will be <br> * begin to measure, mark out, cut and shape materials/components with some accuracy <br> * begin to assemble, join and combine materials and components with some accuracy <br> * begin to apply a range of finishing techniques with some accuracy | * select suitable tools and equipment, explain choices in relation to required techniques and use accurately <br> *select appropriate materials, fit for purpose; explain choices <br> * work through plan in order. <br> * realise if product is going to be good quality <br> * measure, mark out, cut and shape materials/components with some accuracy <br> *assemble, join and combine materials and components with some accuracy <br> *apply a range of finishing techniques with some accuracy |
| Evaluate | * look at design criteria while designing and making <br> *use design criteria to evaluate finished product <br> * say what I would change to make design better | *refer to design criteria while designing and making <br> *use criteria to evaluate product <br> * begin to explain how I could improve original design |


|  | *begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose <br> * begin to understand by whom, when and where products were designed <br> * learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products | *evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose <br> * discuss by whom, when and where products were designed <br> * research whether products can be recycled or reused <br> * know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products |
| :---: | :---: | :---: |
| Key Vocabulary <br> Making, construction and structure <br> Textiles | user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, <br> Running stitch, back stitch, over stitch, fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance <br> name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, | evaluating, design brief <br> design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations, shell structure, three dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, <br> Running stitch, back stitch, over stitch, fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance <br> name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, |

