



Lower Heath 
CE Primary School
Part of the **Marches Academy Trust**



Supportive
Meaningful
Nurturing
Compassionate
Confident



Design & Technology

Progression of Knowledge and Skills

EYFS-Year 6



EYFS Reception

Informed by new Development Matters (2020) publication

	Physical Development	Expressive Art and Design
Year Reception	<ul style="list-style-type: none">• Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.• Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating, toothbrushing, sensible amounts of screen time, having a good sleep routing, being a safe pedestrian.	<ul style="list-style-type: none">• Return to and build on their previous learning, refining ideas and developing their ability to represent them.• Create collaboratively sharing ideas, resources and skills.• Provide children with a range of materials to construct with.• Encourage children to think about and discuss what they want to make.• Discuss problems and how they might be solved as they arise.• Reflect with children on how they have achieved their aims.• Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue.• Provide a range of materials and tools and teach children to use them with care and precision.• Promote independence, taking care not to introduce too many new things at once.
ELG	<ul style="list-style-type: none">• Use a range of small tools, including scissors, paintbrushes and cutlery.• Begin to show accuracy and care when drawing.	<ul style="list-style-type: none">• 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

Year 1

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.

As part of their work with food, pupils should be taught to use the basic principles of a healthy and varied diet to prepare dishes and to understand where food comes from.

	Design	Make	Evaluate	Technical Knowledge Structures/Materials	Technical Knowledge Electrical Control	Technical Knowledge Mechanisms	Technical Knowledge Textiles	Technical Knowledge Food and Nutrition
Year 1	<ul style="list-style-type: none"> have own ideas explain what I want to do explain what my product is for, and how it will work use pictures and words to plan, begin to use models design a product for myself following design criteria research similar existing products 	<ul style="list-style-type: none"> explain what I'm making and why consider what I need to do next select tools/equipment to cut, shape, join, finish and explain choices measure, mark out, cut and shape, with support choose suitable materials and explain choices try to use finishing techniques to make product look good work in a safe and hygienic manner 	<ul style="list-style-type: none"> 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 talk about existing products, and say what is and isn't good talk about things that other people have made begin to talk about what could make product better 	<ul style="list-style-type: none"> begin to measure and join materials, with some support describe differences in materials suggest ways to make material/product stronger 		<ul style="list-style-type: none"> explore and begin to use levers and sliders 	<ul style="list-style-type: none"> measure, cut and join textiles to make a product, with some support choose suitable textiles 	<ul style="list-style-type: none"> describe textures wash hands & clean surfaces think of interesting ways to decorate food say where some foods come from, (i.e. plant or animal) describe differences between some food groups (i.e. sweet, vegetable etc.) discuss how fruit and vegetables are healthy cut, peel and grate safely, with support



Key Stage 1

Year 2

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.

As part of their work with food, pupils should be taught to use the basic principles of a healthy and varied diet to prepare dishes and to understand where food comes from.

	Design	Make	Evaluate	Technical Knowledge Structures/Materials	Technical Knowledge Electrical Control	Technical Knowledge Mechanisms	Technical Knowledge Textiles	Technical Knowledge Food and Nutrition
Year 2	<ul style="list-style-type: none"> have own ideas and plan what to do next explain what I want to do and describe how I may do it 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 choose best tools and materials, and explain choices use knowledge of existing products to produce ideas 	<ul style="list-style-type: none"> explain what I am making and why it fits the purpose make suggestions as to what I need to do next. join materials/components together in different ways measure, mark out, cut and shape materials and components, with support. describe which tools I'm using and why choose suitable materials and explain choices depending on characteristics. use finishing techniques to make product look good work safely and hygienically 	<ul style="list-style-type: none"> describe what went well, thinking about design criteria talk about existing products considering: use, materials, how they work, audience, 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 	<ul style="list-style-type: none"> measure materials describe some different characteristics of materials join materials in different ways use joining, rolling or folding to make it stronger use own ideas to try to make product stronger 		<ul style="list-style-type: none"> use levers or slides begin to understand how to use wheels and axles 	<ul style="list-style-type: none"> measure textiles join textiles together to make a product, and explain how I did it carefully cut textiles to produce accurate pieces explain choices of textile understand that a 3D textile structure can be made from two identical fabric shapes. 	<ul style="list-style-type: none"> explain hygiene and keep a hygienic kitchen describe properties of ingredients and importance of varied diet say where food comes from (animal, underground etc.) describe how food is farmed, home-grown, caught draw eat well plate; explain there are groups of food describe "five a day" cut, peel and grate with increasing confidence



Key Stage 2

Year 3

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).

As part of their work with food, pupils should be taught to understand and apply the principles of a healthy and varied diet. They should be taught to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They should also learn to understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	Design	Make	Evaluate	Technical Knowledge Structures/Materials	Technical Knowledge Electrical Control	Technical Knowledge Mechanisms	Technical Knowledge Textiles	Technical Knowledge Food and Nutrition
Year 3	<ul style="list-style-type: none"> 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 make design decisions that take into account the availability of resources generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks (eg cutting, shaping, joining and finishing) select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities 	<ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> use appropriate materials work accurately to make cuts and holes join materials begin to make strong structures apply their understanding of how to strengthen, stiffen and reinforce more complex structures use the correct technical vocabulary for their project use learning from science and maths to help design and make products that materials have both functional and aesthetic qualities 	<ul style="list-style-type: none"> use a simple circuit in product begin to learn how to program a computer to control product. 	<ul style="list-style-type: none"> investigate pneumatic systems to design and make an object that has a moving part controlled by pneumatics select appropriate tools / techniques alter product after checking, to make it better begin to try new/different ideas use simple lever and linkages to create movement 	<ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities <i>that materials can be combined and mixed to create more useful characteristics</i> <i>use the correct technical vocabulary for their project</i> <i>use learning from science and maths to help design and make products</i> join different textiles in different ways choose textiles considering appearance and functionality begin to understand that a simple fabric shape can be used to make a 3D textiles project 	<ul style="list-style-type: none"> carefully select ingredients use equipment safely make product look attractive think about how to grow plants to use in cooking begin to understand food comes from UK and wider world describe how healthy diet= variety/balance of food/drinks explain how food and drink are needed for active/healthy bodies. prepare and cook some dishes safely and hygienically grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking



Key Stage 2

Year 4

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).

As part of their work with food, pupils should be taught to understand and apply the principles of a healthy and varied diet. They should be taught to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They should also learn to understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	Design	Make	Evaluate	Technical Knowledge Structures/Materials	Technical Knowledge Electrical Control	Technical Knowledge Mechanisms	Technical Knowledge Textiles	Technical Knowledge Food and Nutrition
Year 4	<ul style="list-style-type: none"> use research for design ideas show design meets a range of requirements and is fit for purpose begin to create own design criteria have at least one idea about how to create product and suggest improvements for design. produce a plan and explain it to others say how realistic plan is. include an annotated sketch make and explain design decisions considering availability of resources explain how product will work make a prototype begin to use computers to show design. 	<ul style="list-style-type: none"> select suitable tools and equipment, explain choices in relation to required techniques and use accurately select appropriate materials, fit for purpose; explain choices work through plan in order. realise if product is going to be good quality measure, mark out, cut and shape materials/components with some accuracy assemble, join and combine materials and components with some accuracy apply a range of finishing techniques with some accuracy 	<ul style="list-style-type: none"> refer to design criteria while designing and making use criteria to evaluate product begin to explain how I could improve original design evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose discuss by whom, when and where products were designed research whether products can be recycled or reused know about some inventors/designers/engineers/chefs/manufacturers of ground-breaking products 	<ul style="list-style-type: none"> measure carefully to avoid mistakes attempt to make product strong continue working on product even if original didn't work make a strong, stiff structure 	<ul style="list-style-type: none"> use number of components in circuit program a computer to control product 	<ul style="list-style-type: none"> select most appropriate tools / techniques explain alterations to product after checking it grow in confidence about trying new / different ideas. use levers and linkages to create movement use pneumatics to create movement 	<ul style="list-style-type: none"> think about user when choosing textiles think about how to make product strong begin to devise a template explain how to join things in a different way understand that a simple fabric shape can be used to make a 3D textiles project 	<ul style="list-style-type: none"> explain how to be safe/hygienic think about presenting product in interesting/attractive ways understand ingredients can be fresh, pre-cooked or processed begin to understand about food being grown, reared or caught in the UK or wider world 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 prepare and cook some dishes safely and hygienically use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking



Key Stage 2

Year 5

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).

As part of their work with food, pupils should be taught to understand and apply the principles of a healthy and varied diet. They should be taught to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They should also learn to understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	Design	Make	Evaluate	Technical Knowledge Structures/Materials	Technical Knowledge Electrical Control	Technical Knowledge Mechanisms	Technical Knowledge Textiles	Technical Knowledge Food and Nutrition
Year 5	<ul style="list-style-type: none"> use internet and questionnaires for research and design ideas take a user's view into account when designing begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose create own design criteria have a range of ideas produce a logical, realistic plan and explain it to others. use cross-sectional planning and annotated sketches make design decisions considering time and resources. clearly explain how parts of product will work. model and refine design ideas by making prototypes and using pattern pieces. use computer-aided designs 	<ul style="list-style-type: none"> use selected tools/equipment with good level of precision produce suitable lists of tools, equipment/materials needed select appropriate materials, fit for purpose; explain choices, considering functionality create and follow detailed step-by-step plan explain how product will appeal to an audience mainly accurately measure, mark out, cut and shape materials/components mainly accurately assemble, join and combine materials/components mainly accurately apply a range of finishing techniques use techniques that involve a small number of steps begin to be resourceful with practical problems 	<ul style="list-style-type: none"> evaluate quality of design while designing and making evaluate ideas and finished product against specification, considering purpose and appearance. test and evaluate final product evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose begin to evaluate how much products cost to make and how innovative they are research how sustainable materials are talk about some key inventors/designers/engineers/chefs/manufacturers of ground-breaking products 	<ul style="list-style-type: none"> select materials carefully, considering intended use of product and appearance explain how product meets design criteria measure accurately enough to ensure precision ensure product is strong and fit for purpose begin to reinforce and strengthen a 3D frame 	<ul style="list-style-type: none"> incorporate switch into product confidently use number of components in circuit begin to be able to program a computer to monitor changes in environment and control product 	<ul style="list-style-type: none"> refine product after testing grow in confidence about trying new/different ideas investigate cam mechanisms, draw on and extend earlier work on levers and sliders 	<ul style="list-style-type: none"> think about user and aesthetics when choosing textiles use own template think about how to make product strong and look better think of a range of ways to join things begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. 	<ul style="list-style-type: none"> explain how to be safe / hygienic and follow own guidelines present product well - interesting, attractive, fit for purpose begin to understand seasonality of foods understand food can be grown, reared or caught in the UK and the wider world describe how recipes can be adapted to change appearance, taste, texture, aroma explain how there are different substances in food / drink needed for health prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.



Key Stage 2

Year 6

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).

As part of their work with food, pupils should be taught to understand and apply the principles of a healthy and varied diet. They should be taught to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They should also learn to understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	Design	Make	Evaluate	Technical Knowledge Structures/Materials	Technical Knowledge Electrical Control	Technical Knowledge Mechanisms	Technical Knowledge Textiles	Technical Knowledge Food and Nutrition
Year 6	<ul style="list-style-type: none"> draw on market research to inform design use research of user's individual needs, wants, requirements for design identify features of design that will appeal to the intended user create own design criteria and specification come up with innovative design ideas follow and refine a logical plan. use annotated sketches, cross-sectional planning and exploded diagrams make design decisions, considering, resources and cost clearly explain how parts of design will work, and how they are fit for purpose independently model and refine design ideas by making prototypes and using pattern pieces use computer-aided designs 	<ul style="list-style-type: none"> use selected tools and equipment precisely produce suitable lists of tools, equipment, materials needed, considering constraints select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics create, follow, and adapt detailed step-by-step plans explain how product will appeal to audience; make changes to improve quality accurately measure, mark out, cut and shape materials/components accurately assemble, join and combine materials/components accurately apply a range of finishing techniques use techniques that involve a number of steps be resourceful with practical problems 	<ul style="list-style-type: none"> evaluate quality of design while designing and making; is it fit for purpose? keep checking design is best it can be. evaluate ideas and finished product against specification, stating if it's fit for purpose test and evaluate final product; explain what would improve it and the effect different resources may have had do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose evaluate how much products cost to make and how innovative they are research and discuss how sustainable materials are consider the impact of products beyond their intended purpose discuss some key inventors/designers/engineers/chefs/manufacturers of ground-breaking products 	<ul style="list-style-type: none"> select materials carefully, considering intended use of the product, the aesthetics and functionality. explain how product meets design criteria reinforce and strengthen a 3D frame 	<ul style="list-style-type: none"> use different types of circuit in product think of ways in which adding a circuit would improve product program a computer to monitor changes in environment and control product 	<ul style="list-style-type: none"> refine product after testing, considering aesthetics, functionality and purpose incorporate hydraulics and pneumatics be confident to try new / different ideas use cams, pulleys, linkages and gears to create movement 	<ul style="list-style-type: none"> think about user's wants/needs and aesthetics when choosing textiles make product attractive and strong make a prototype use a range of joining techniques think about how product might be sold think carefully about what would improve product understand that a single 3D textiles project can be made from a combination of fabric shapes. 	<ul style="list-style-type: none"> understand a recipe can be adapted by adding / substituting ingredients explain seasonality of foods learn about food processing methods name some types of food that are grown, reared or caught in the UK or wider world *adapt recipes to change appearance, taste, texture or aroma. describe some of the different substances in food and drink, and how they can affect health prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.

