



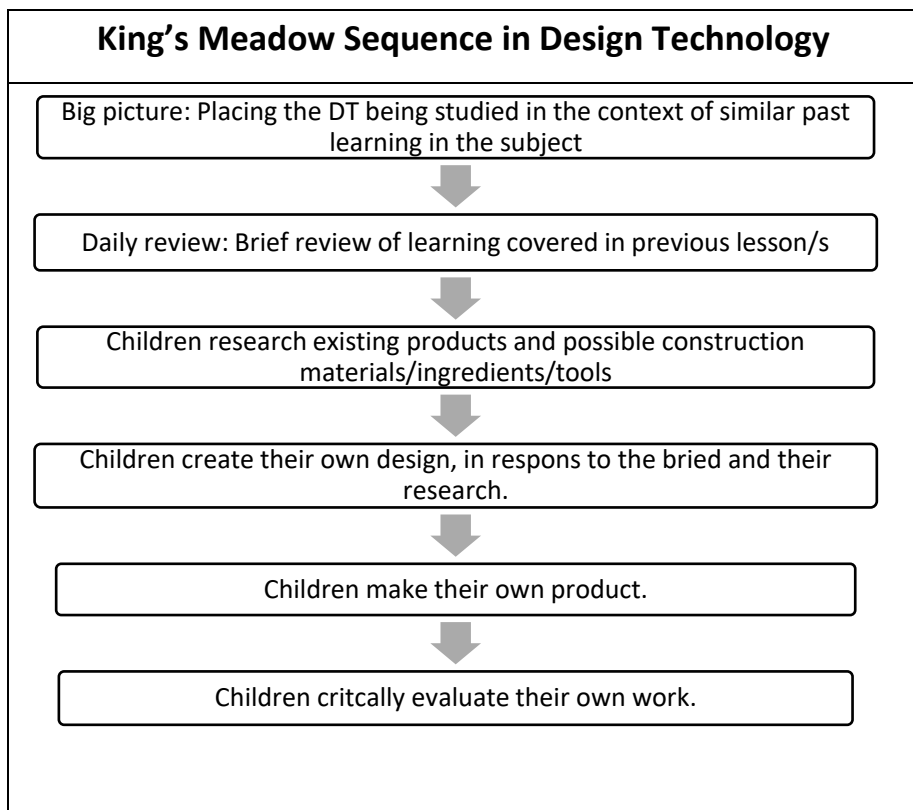
KMA PROGRESSION IN DESIGN TECHNOLOGY



Date	Review Date	Subject Leader
September 2020	July 2021	Sarah Odumala/Charlotte MacElhatton

This document aims to give guidance on the progression of Design Technology knowledge, skills and techniques across the year groups. It can also be used to differentiate work, and expectations, appropriately for pupils working above and below age-related expectations (particularly SEND pupils and GD pupils). Potential GD pupils should also be encouraged to record more independently and freely in their books as well as be encouraged to experiment with and use materials and media of their own choice. Their increasingly critical thinking and in-depth evaluation of their own and others' Design Technology work should be reflected in their books and in the designs, they create with increasing confidence and independence of thought.

In Design Technology, like all other subjects, we recognise the importance of the methods and practice of teaching (the pedagogy) we choose to use in enabling pupils to know more, understand more and remember more. In Design Technology, the following approaches will be used, and be evident in pupils' books, in order to ensure that the Design Technology learning opportunities are as effective as possible and that pupils progress throughout the year and across year groups during their Design Technology experiences in school:



Meta-cognition in Design Technology	
Activating prior knowledge	The teacher discusses with children the learnt strategies and content in previous reading lessons
Explicit strategy instruction	The teacher explicitly explains how to organise their ideas, with the emphasis on the cognitive strategy 'cause and effect' model' to help them organise and plan
Modelling of learned strategy	Use initial notes to model one part of the strategy
Memorisation of strategy	The teacher tests if pupils have memorised the key aspects of the strategy through questions and discussions
Guided practice	The teacher models one further example with the whole group, with pupils verbally contributing ideas
Independence practice	Pupils complete their own task
Structured reflection	The teacher encourages pupils to reflect on how appropriate the model was, how successfully they applied it, and how they might use it in the future.

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Key Designers/Architects/Chefs

Year 3	Year 4	Year 5	Year 6
Cath Kidston Jim Henson Ken Hom	Clare Smyth Alexander Graham Bell Nikola Tesla	Thomasina Miers Nicolas Grimshaw	Heston Blumenthal Ismail Al-Jazari Edmund Cartwright George Stephenson

Subject Specific Vocabulary KEY WORDS

Please note these definitions of key words which need to be understood in the specific context of primary Design and Technology, across all year groups

Design	<ul style="list-style-type: none"> plan to do something with a specific purpose in mind do a drawing of something before making it
Designer	<ul style="list-style-type: none"> a person who creates a plan for something they want to make KS2 – also focus on ‘designer’ as a job title/career, e.g. ‘fashion designer’ user the person who we are designing our product for, whose needs/wants must be taken into account
Technology	<ul style="list-style-type: none"> Using what we know about Science to help us make useful things
Product	<ul style="list-style-type: none"> An outcome piece with a function/that does something - not necessarily a thing which can be sold
Brief	<ul style="list-style-type: none"> The initial instructions that tell us what we need to do in our project
User	<ul style="list-style-type: none"> The person who we are designing our product for, whose needs/wants must be taken into account

Subject Specific Vocabulary BY YEAR GROUP

Use with all units across the year. Please display all words listed and revisit previous years’ content as required

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> design designer materials tools construct 	IN ADDITION TO PREVIOUS YEARS: <ul style="list-style-type: none"> tools brief product evaluate problem-solving 	IN ADDITION TO PREVIOUS YEARS: <ul style="list-style-type: none"> label technology 	IN ADDITION TO PREVIOUS YEARS: <ul style="list-style-type: none"> intended user annotated sketch component 	IN ADDITION TO PREVIOUS YEARS: <ul style="list-style-type: none"> design criteria computer-aided design 	IN ADDITION TO PREVIOUS YEARS: <ul style="list-style-type: none"> cross-sectional diagram 	IN ADDITION TO PREVIOUS YEARS: <ul style="list-style-type: none"> exploded diagram innovation

Breadth of Study

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Work on their own and collaboratively with others on projects Use ICT Investigate different kinds of design, construction and food	Work on their own and collaboratively with others on projects in 2 and 3 dimensions and on different scales. Use ICT Investigate different kinds of design, construction and food	Work on their own and collaboratively with others on projects in 2 and 3 dimensions and on different scales. Use ICT Investigate different kinds of design, construction and food	Work on their own and collaboratively with others on projects in 2 and 3 dimensions and on different scales Use ICT Investigate different kinds of design, construction and food in the locality and in a variety of genres, styles and traditions.	Work on their own and collaboratively with others on projects in 2 and 3 dimensions and on different scales. Use ICT Investigate different kinds of design, construction and food in the locality and in a variety of genres, styles and traditions.	Work on their own and collaboratively with others on projects in 2 and 3 dimensions and on different scales Use ICT Investigate different kinds of design, construction and food in the locality and in a variety of genres, styles and traditions.	Work on their own and collaboratively with others on projects in 2 and 3 dimensions and on different scales. Use ICT Investigate different kinds of design, construction and food in the locality and in a variety of genres, styles and traditions.

Research

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use what they have learnt about media and materials in original ways, thinking about uses and purposes.	Explore a range of existing products, discussing how they are made and how they work. Discuss how these products could help them with their own design	Explore a range of existing products, discussing how they are made and how they work. Discuss how these products could help them with their own design	Learn about how key events and individuals in design and technology have helped shape the world. Investigate and analyse a range of existing products, discussing their features, construction, purpose and intended users.	Learn about how key events and individuals in design and technology have helped shape the world Investigate and analyse a range of existing products, discussing their features, construction, purpose and intended users.	Learn about how key events and individuals in design and technology have helped shape the world. Investigate and analyse a range of existing products, discussing their features, construction, purpose and intended users.	Learn about how key events and individuals in design and technology have helped shape the world. Investigate and analyse a range of existing products, discussing their features, construction, purpose and intended users.

Design

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
RESEARCH	Talk about what they want to make, in relation to the design brief and their research.	Talk about what they want to make, in relation to the design brief and their research.	Talk about what they want to make, in relation to the design brief and their research.	Use their research to develop some of their own design criteria.	Use their research to develop some of their own design criteria.	Use their research to develop their own design criteria.	Use their research to develop their own design criteria.
DRAWING	Draw a simple picture of their product and add some words, e.g. its parts/materials	Draw a simple picture of their product and add some words, e.g. its parts/materials.	Draw a labelled picture of their product, which may include parts, components, materials.	Draw a fully labelled sketch/diagram of their product, including some measurements. Indicate where a mechanism will go and briefly explain how it will function.	Draw a fully labelled sketch/diagram of their product, including some measurements. Indicate where Electrical components will go and briefly explain how they will function.	Draw a fully labelled/annotated sketch/diagram of their product, including measurements and cross-sections. Indicate where/how materials will be joined in order to create a stable structure.	Draw a fully Labelled /annotated sketch/ diagram of their product, including measurements and cross-sections. Indicate where/how materials will be joined in order to create a stable

							Indicate where Electrical components will go and explain how they will function. Explain how computer programming will control the product. Indicate where mechanisms will go and explain how they will function structure
RESOURCES	Choose the materials /ingredients/tools they will use, from a limited selection.	Choose the materials /ingredients/tools they will use, from a limited selection.	Choose the materials/ ingredients/tools they will use, from a selection.	Choose the materials/ ingredients/tools they will use, based on their suitability for the task	Choose the materials /ingredients/tools they will use, based on their suitability for the task	Choose the materials/ ingredients/tools they will use, based on their suitability for the task, including sourcing their own materials where appropriate.	Choose the materials/ Ingredient ts/tools they will use, based on their suitability for the task, including sourcing their own materials where appropriate
LISTS/ INSTRUCTIONS	Write a list of the resources they have used	Write down some of the materials/ ingredients/tools they will need, using a word bank to help them.	Write a list of the materials/ ingredients /tools they will need	List the materials/ ingredients/tools they will need. Order the main stages of making	List the materials/ ingredients/tools they will need. Order the main stages of making. Use computer aided design.	List the materials/ ingredients/tools they will need. Write (brief) instructions for how they intend to make their product	List the materials/ ingredients/tools they will need. Write (brief) instructions for how they intend to make their product.
FOOD AND COOKERY	Create a record of foods that are healthy/unhealthy	Understand the basic principles of a healthy and varied diet and that they are designing a healthy dish. Create a basic recipe, using drawings.	Understand that the basic principles of a healthy and varied diet feature within their design. Create a basic recipe, using drawings and labels.	Use the principles of a healthy and varied diet to help inform their design decisions. Create/adapt a recipe, including some weight/volume measurements.	Use the principles of a healthy and varied diet to help inform their design and decisions. Understand seasonality and locality of food and use this knowledge when designing their product. Create/adapt a recipe, including some weight/volume measurements.	Independently apply the principles of a healthy and varied diet to inform their design decisions. Apply their knowledge of seasonality and locality of food to inform their design decisions. Create/adapt a recipe, including weight/volume measurements.	Independently apply the principles of a healthy and varied diet to inform their design decisions. Apply their knowledge of seasonality and locality of food to inform their design decisions. Create/adapt a recipe, including weight/volume measurements.

Make

Construction	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
MEASURE		Mark materials before cutting.	Mark materials before cutting and sometimes measure.	Measure and mark materials before cutting.	Measure and mark materials before cutting.	Measure and mark materials with increased accuracy, before cutting.	Measure and mark materials with increased accuracy, before cutting.
CUT	Cut paper and other materials with some control Use scissors to cut along straight and curved lines	Cut paper and other materials safely and with some accuracy	Cut paper and other materials safely and with increasing accuracy.	Cut materials accurately, using appropriate tools	Cut materials accurately, using appropriate tools Score and fold paper/ card accurately.	Cut materials accurately, using appropriate tools.	Cut materials accurately, using appropriate tools.
JOIN	Experiment with joining paper and other materials using a variety of methods: Gluing, taping, clipping, tying	Join paper and other materials using a variety of basic methods such as gluing, taping, clipping, tying.	Begin to choose the most effective joining methods for the task/materials.	Join a range of materials using a variety of methods, usually choosing the method most suited to the task.	Join a range of materials using a variety of methods, usually choosing the method most suited to the task	Join a range of materials using a variety of suitable methods.	Join a range of materials using a variety of suitable methods.
COMPONENTS	Use simple components, such as split pins	Use simple components, such as split pins Create a basic mechanism (lever/slider).	Use simple components, such as split pins. Create a basic mechanism (lever/slider).	Create a working mechanism (levers and linkages) and incorporate it into their product	Create a basic electrical circuit and incorporate it into their product.	Create a polished and well-finished product.	Create a working mechanism (pulleys and gears) and incorporate it into their product Create a basic electrical circuit and incorporate it into their product Create a polished and well-finished product.
TEST	Test their product as they work	Test their product as they work	Test their product as they work, to see if it meets the requirements of the intended user.	Test their product as they work, making informed adjustments to ensure their product meets the design criteria.	Test their product as they work, making informed adjustments to ensure their product meets the design criteria	Test their product as they work, making informed adjustments and sometimes anticipating problems.	Test their product as they work, making informed adjustments and striving to address any anticipated Programme a computer to control their product

STABILIZING STRUCTURE	Experiment with ways to make a structure stiffer/more stable as they work	Experiment with ways to make a structure stiffer/more stable as they work	Apply their knowledge of materials to make a structure stiffer/ more stable as they work.	Apply their prior knowledge and understanding to make structures stiffer / more stable as they work. Pay attention to the finishing of their product.	Apply their prior knowledge and understanding to make structures Stiffer / more stable as they work. Pay attention to the finishing of their product	Apply their prior knowledge and understanding to make structures stiffer/ more stable as they work	Apply their prior knowledge and understanding to make structures stiffer/ more stable as they work control their product.
KEY VOCABULARY	make cut join strong	AS PREVIOUSLY TAUGHT PLUS: moving picture mechanism lever slider pivot construct structure bridge stable Isambard Kingdom Brunel	AS PREVIOUSLY TAUGHT PLUS: boat buoyant (Science) water-proof (Science) stable Isambard Kingdom Brunel	AS PREVIOUSLY TAUGHT PLUS: moving part mechanism lever linkage fixed pivot loose pivot puppeteer Jim Henson	AS PREVIOUSLY TAUGHT PLUS: net scoring tab accuracy packaging product designer graphic designer shelf-appeal battery circuit switch bulb electrical engineer Alexander Graham Bell Nikola Tesla	AS PREVIOUSLY TAUGHT PLUS: frame structure triangulation strengthen reinforce greenhouse agricultural engineering architect Nicolas Grimshaw	AS PREVIOUSLY TAUGHT PLUS: mechanical system pulley driver follower load transport mechanical engineer Ismail Al-Jazari Edmund Cartwright George Stephenson battery circuit switch monitor control program electrical engineer Edith Clarke

Make

Textiles	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DESIGN			Create a design on fabric using pens/paint.	Create a design on fabric using applique.		Create designs on fabric using applique /pen/paint.	
CUTTING			Cutting fabric carefully.	Cutting fabric with Increasing accuracy.		Include a seam allowance. Cut fabric accurately.	
PATTERN			Make/use simple paper pattern pieces.	Make/use a paper pattern (front and back pieces).		Make/use a paper pattern (front and back pieces).	
SEWING			<ul style="list-style-type: none"> • Threading a needle • Knotting your thread, • Finishing off Running stitch attempting to produce neat, equal stitches	AS PREVIOUSLY TAUGHT PLUS: Sewing on simple components – buttons/sequins/ribbons. Sewing using running stitch and cross stitch Using stuffing		AS PREVIOUSLY TAUGHT PLUS Sewing neatly using running stitch/back stitch . Incorporating a fastening component –button Turning out so stitching is hidden.	
KEY VOCABULARY			textiles needle thread pin pattern piece applique William Morris	pattern piece running stitch cross stitch applique embroidery textile designer Cath Kidston		pattern pieces back stitch tension seam allowance turn out fastener fashion designer ethical product corporate social responsibility	

MAKE

FOOD	EYFS	Year 1	Year 2 Creating a wrap	Year 3 Make a pasta sauce	Year 4 Make bread	Year 5	Year 6
FOOD HYGIENE	Observe basic food hygiene procedures with support –washing hands; washing fruit/veg; keeping meat separate; cleaning surfaces before and after preparing food. Clean/wash up after themselves.			Observe basic food hygiene procedures– washing hands, washing fruit/veg; avoiding cross contamination when preparing raw meat; cleaning surfaces before and after preparing food. Clean/wash up after themselves			
UTENSILS	Use a knife and chopping board safely.	Use a knife and chopping board safely. Peel fruit where necessary.	Use a knife and chopping board to neatly chop ingredients	Use appropriate tools to peel, chop, slice, grate and mix ingredients.	Use appropriate tools to peel, chop, slice, grate and mix ingredients.		
PRODUCTS			Use a spoon to add condiments.	Cook the product in the oven, ensuring it is fully cooked.			
METHOD	Use a knife with increasing control	Use a knife with control	Carefully roll up their wrap.	Make a simple sauce.	Knead and roll out dough.		
SERVE	Serve food in an appealing way.						
KEY VOCABULARY	Ingredients Healthy Cook taste	ingredients healthy chopping board hygiene chef	ingredients hygiene balanced nutritious appealing Jamie Oliver	hygiene utensils slice dice recipe Chinese cuisine street food texture oven temperature Ken Hom	hygiene grown reared local producer seasonal produce dough knead bake Clare Smyth	hygiene cross contamination local produce seasonality bake fry spices Mexican cuisine Thomasina Miers	hygiene cross contamination local produce seasonality cooking technique deconstructed food Heston Blumenthal

EVALUATE

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
PRODUCT	Describe what went well and which aspects of their product they are pleased with.	Describe what went well and which aspects of their product they are pleased with.		Identify and discuss the strengths of their product.			
IMPROVEMENTS	Describe anything that didn't work as well and any changes they had to make.	Describe anything that didn't work as well and any changes they had to make.		Identify any areas for development/ improvements that could be made.			
FIT FOR PURPOSE	Discuss whether they think their intended user will like/did like the product and why. <i>(Can be done verbally or written).</i>	Discuss whether they think their intended user will like/did like the product and why. <i>(Can be done verbally or written).</i>	Discuss what the intended user might think about the product.	Discuss whether the product meets the requirements of the brief/the needs of the user – is it fit for purpose?			
IMPROVEMENTS	Suggest how their product could be improved	Suggest how their product could be improved	Suggest how their product could be improved	Take part in peer evaluation, giving and receiving feedback from fellow pupils			