Design and Technology Skills Progression – KS1 and KS2

Checked by School Leader/l Key Stage Leader	***Name/ Signature/ Date:***
Checked by School Curriculum Leader	***Name/ Signature/ Date:***

Monitoring	Each individual school is responsible for ensuring the delivery of the National Curriculum 14 intentions within the school. The school is required to regularly monitor the delivery of this Vertical Skills Progression Map. The school must complete an annual review of its School Vertical Progression Map to check the implementation of curriculum skills. Ongoing monitoring of planning, learning evidence and pupil knowledge will take place as part of good practice by subject and school leaders. Information from monitoring will be used to inform in school/ MAT CPD subject training.
Curriculum Statement **National Curriculum 2014**	**Purpose of Study** 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** 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. **Assessment** 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.

Key Stage 1	
Subject 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]. **Cooking and Nutrition Subject Content** 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.	
National Curriculum 2014 **Key Stage 1**	
Learning Intentions Pupils should be taught about:	Non-Statutory
Design design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **Make** select from and use a range of tools and equipment to perform practical tasks select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics **Evaluate** ▪ explore and evaluate a range of existing products ▪ evaluate their ideas and products against design criteria **Technical knowledge** ▪ build structures, exploring how they can be made stronger, stiffer and more stable ▪ explore and use mechanisms in their products. **Cooking and Nutrition** ▪ use the basic principles of a healthy and varied diet to prepare dishes ▪ understand where food comes from.	▪ [for example, cutting, shaping, joining and finishing] ▪ [for example, levers, sliders, wheels and axles],

Learning Progression Key Stage 1				
Designing	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Understanding contexts, users and purposes	I can state what products I am designing and making. I can say whether my products are for myself or other Users.	I can work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. I can describe what my products are for. I can say how my products will work. I can use simple design criteria to help develop my ideas.	I can say how I will make my products suitable for their intended users.
	Generating, developing, modelling and communicating ideas	I can generate ideas by drawing on my own experiences.	I can use knowledge of existing products to help come up with ideas. I can develop and communicate ideas by talking and Drawing.	I can model ideas by exploring materials, components and construction kits and by making templates and mock-ups. I can use information and communication technology, where appropriate, to develop and communicate my ideas.
Making	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Planning	I can plan by suggesting what to do next.	I can select from a range of tools and equipment, explaining my choices.	I can select from a range of materials and components according to their characteristics.
	Practical skills and techniques	I can begin to use procedures for safety and hygiene.	I can follow procedures for safety and hygiene.	I can confidently follow procedures for safety and hygiene, explaining procedures

		I can use materials and components to make a product. I can begin to assemble, join and combine materials and components.	I can use materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. I can measure, mark out, cut and shape materials and components. I can assemble, join and combine materials and components. I can use finishing techniques, including those from art and design.	to others. I can use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. I can measure, mark out, cut and shape materials and components with increasing accuracy. I can assemble, join and combine materials and components with confidence. I can use finishing techniques, including those from art and design, explaining my reasoning.
Evaluating	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Own ideas and products	I can talk about my design ideas and what I am making.	I can make simple judgements about my products and ideas against design criteria.	I can suggest how my products could be improved based on the success criteria.
	Existing products	I can explain: What products are. Who products are for. What products are for.	I can explain: What products are. Who products are for. What products are for. How products work.	I can explain how products work. I can suggest how products are used, giving reasons for my views. I can suggest where products might be used. I can suggest what materials

			I can suggest how products are used. I can suggest where products might be used. I can suggest what materials products are made from. I can explain what I like and dislike about products.	products are made from and why those materials have been chosen. I can explain what I like and dislike about products, giving reasons for my views.
Technical Knowledge	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Making products work	I can talk about the simple working characteristics of materials and components.	I can talk about the movement of simple mechanisms such as levers, sliders, wheels and axles. I can explain how freestanding structures can be made stronger, stiffer and more stable. I know that a 3-D textiles product can be assembled from two identical fabric shapes.	I know that food ingredients should be combined according to their sensory characteristics. I know the correct technical vocabulary for the projects I am undertaking.
Cooking and Nutrition	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Where food comes from	I can begin to recognise that all food comes from plants or animals. I can begin to recognise that food has to be farmed, grown elsewhere (e.g. home) or caught.	I know that all food comes from plants or animals. I know that food has to be farmed, grown elsewhere (e.g. home) or caught	I know and explain that all food comes from plants or animals, giving some examples. I know and explain that food has to be farmed, grown elsewhere (e.g. home) or caught, giving examples.

	Food, preparation and cooking	I can begin to name and sort foods into the five groups in the eat-well plate. I know that everyone should eat at least five portions of fruit and vegetables every day. I can begin to use techniques such as cutting, peeling and grating.	I can name and sort foods into the five groups in the eat-well plate. I know that everyone should eat at least five portions of fruit and vegetables every day, suggesting different fruits and vegetables. I can prepare simple dishes safely and hygienically, without using a heat source. I can use techniques such as cutting, peeling and grating.	I can confidentially name and sort a number of foods into the five groups in the eat-well plate. I can confidently explain why everyone should eat at least five portions of fruit and vegetables every day, suggesting different fruits and vegetables. I can explain how to prepare simple dishes safely and hygienically, without using a heat source. I can use techniques such as cutting, peeling and grating and confidently carry these techniques out when producing a product.

Key Stage 2

Subject 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, school, leisure, culture, enterprise, industry and the wider environment].

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.

National Curriculum 2014
Key Stage 2

Learning Intentions Pupils should be taught about	Non-Statutory
Design ▪ 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 ▪ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** ▪ select from and use a wider range of tools and equipment to perform practical tasks accurately ▪ 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** ▪ 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 **Technical knowledge** ▪ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ▪ understand and use mechanical systems in their products ▪ understand and use electrical systems in their products ▪ apply their understanding of computing to program, monitor and control their products. **Cooking and Nutrition** ▪ 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.	▪ for example, [cutting, shaping, joining and finishing] ▪ [for example, gears, pulleys, cams, levers and linkages] ▪ [for example, series circuits incorporating switches, bulbs, buzzers and motors]

Learning Progression Lower Key Stage 2				
Designing	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**

	Understanding contexts, users and purposes	I can work within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. I can begin to describe the purpose of my products.	I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. I can describe the purpose of my products. I can indicate the design features of my products that will appeal to intended users. I can explain how particular parts of my products work. I can gather information about the needs and wants of particular individuals and groups.	I can develop my own design criteria and use these to inform my ideas.
	Generating, developing, modelling and communicating ideas	I can share and clarify ideas through discussion. I can use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas.	I can share and clarify ideas through discussion. I can model my ideas using prototypes and pattern pieces. I can use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate my ideas. I can use computer-aided design to develop and communicate my ideas. I can generate realistic ideas,	I can make design decisions that take account of the availability of resources.

			focusing on the needs of the user.	
Making	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Planning	I can select tools and equipment suitable for the task. I can select materials and components suitable for the task.	I can select tools and equipment suitable for the task. I can begin to explain my choice of tools and equipment in relation to the skills and techniques I will be using. I can select materials and components suitable for the task. I can begin to explain my choice of materials and components according to functional properties and aesthetic qualities. I can order the main stages of making.	I can explain my choice of tools and equipment in relation to the skills and techniques I will be using. I can explain my choice of materials and components according to functional properties and aesthetic qualities. I can confidently order the main stages of making.
	Practical skills and techniques	I can follow procedures for safety and hygiene. I can use materials and components from KS1. I can measure, mark out, cut and shape materials and components. I can assemble, join and combine materials and	I can follow procedures for safety and hygiene. I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. I can measure, mark out, cut	I can correctly follow procedures for safety and hygiene. I can confidently use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. I can measure, mark out, cut and

		components. I can apply a finishing technique.	and shape materials and components with some accuracy. I can assemble, join and combine materials and components with some accuracy. I can apply a range of finishing techniques.	shape materials and components with accuracy. I can assemble, join and combine materials and components with accuracy. I can apply a range of finishing techniques, including those from art and design, with some accuracy.
Evaluating	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Own ideas and products	I can identify the strengths and areas for development in my products.	I can identify the strengths and areas for development in my ideas and products. I can consider the views of others to improve my work. I can refer to my design criteria as I design and make. I can use my design criteria to evaluate my completed products.	I can consider the views of others, including intended users, to improve my work. I can refer to my design criteria as I design and make to inform the marking process. I can use my design criteria to evaluate my completed products considering the intended user.
	Existing products	I can investigate and analyse: ▪ How well products have been designed ▪ How well products have been made ▪ Why materials have been chosen ▪ How well products work ▪ How well products achieve their purposes	I can investigate and analyse: ▪ How well products have been designed ▪ How well products have been made ▪ Why materials have been chosen ▪ What methods of construction have been used	I can investigate and analyse: ▪ How well products have been designed for the intended user ▪ How well products have been made, based on research. ▪ Why materials have been chosen explaining their reasoning.

		▪ When products were designed and made ▪ Whether products can be recycled or reused.	▪ How well products work ▪ How well products achieve their purposes ▪ How well products meet user needs and wants ▪ Who designed and made the products ▪ Where products were designed and made ▪ When products were designed and made ▪ Whether products can be recycled or reused.	▪ What methods of construction have been used considering if other methods of construction would have been better ▪ How well products work ▪ How well products achieve their purposes for the intended user ▪ How well products meet user needs and wants ▪ Who designed and made the products ▪ Where products were designed and made and whether this has impacted on the product outcome ▪ When products were designed and made and whether this has impacted on the product outcome ▪ Whether products can be recycled or reused and its impact on the environment.
	Key events and individuals	I begin to know of inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	I know inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	I confidently talk about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.
Technical Knowledge	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Making things work	I can investigate how materials can be combined and mixed to create more useful characteristics. I can investigate how materials	I can use learning from science to help design and make products that work. I can use learning from mathematics to help design	I can investigate and explain how mechanical and electrical systems have an input, process and output. I can program a computer to

		have both functional properties and aesthetic qualities.	and make products that work. I can use correct technical vocabulary for the projects I am undertaking. I can investigate how mechanical systems such as levers and linkages or pneumatic systems create movement. I can investigate how simple electrical circuits and components can be used to create functional products I can investigate how to make strong, stiff shell structures. I can demonstrate that a single fabric shape can be used to make a 3D textiles product I can explain that food ingredients can be fresh, pre-cooked and processed.	control my products.
Cooking and Nutrition	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Where food comes from	I can show that a recipe can be adapted a by adding or substituting one or more ingredients. I can explain that food is grown, reared and caught in the UK, Europe and the wider	I can show that a recipe can be adapted a by adding or substituting one or more ingredients. I can explain that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs,	I can show that a recipe can be adapted a by adding or substituting one or more ingredients to change the flavour to the product. I can explain that food is grown (such as tomatoes, wheat and

		world.	chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.	potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world, reasoning why food can be sourced in different countries.
	Food preparation, cooking and nutrition	I am beginning to know how to prepare and cook a savoury dish safely and hygienically including, where appropriate, the use of a heat source. I am starting to know techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. I am aware that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat-well plate. I know that to be active and healthy food and drink are needed to provide energy for the body.	I can prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat-well plate. I can explain that to be active and healthy food and drink are needed to provide energy for the body.	I can confidently prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. I can explain that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat-well plate. I can explain that to be active and healthy food and drink are needed to provide energy for the body giving explanations about why.
Learning Progression Upper Key Stage 2				
Designing	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Understanding contexts, users and purposes	I can describe the purpose of my products. I can indicate the design	I can work confidently within a different context, such as the home, school, leisure, culture, enterprise, industry and the	I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the

		features of my products that will appeal to intended users. I can develop a simple design specification to guide my thinking.	wider environment. I can describe the purpose of my products. I can consider the design features of my products that will appeal to intended users. I can think about how particular parts of my products work. I can carry out research, using surveys, interviews, questionnaires and web-based resources. I can consider the needs, wants, preferences and values of particular individuals and groups I can develop a simple design specification to guide their thinking.	wider environment. I can describe the purpose of my products to an audience using persuasive techniques. I can indicate the design features of my products that will appeal to intended users. I can explain how particular parts of my products work. I can carry out in-depth research, using surveys, interviews, questionnaires and web-based resources. I can identify and explain my needs, wants, preferences and values of particular individuals and groups. I can develop a design specification to guide my thinking.
	Generating, developing, modelling and communicating ideas	I can share through discussion. I can begin to model my ideas using prototypes and pattern pieces. I can begin to use annotated sketches, cross-sectional drawings and exploded	I can share and clarify ideas through discussion. I can model my ideas using prototypes and pattern pieces. I can use annotated sketches, cross-sectional drawings and exploded diagrams to develop	I can share and clarify ideas through discussion, taking on board the views of others. I can model my ideas using prototypes and pattern pieces, exploring many different approaches.

		diagrams to develop and communicate my ideas. I can generate ideas for products.	and communicate my ideas. I can use computer-aided design to develop and communicate my ideas. I can generate innovative ideas. I can make design decisions, taking account of constraints such as time and resources.	I can confidently use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate my ideas. I can confidently use computer-aided design to develop and communicate my ideas. I can generate innovative ideas, drawing on research. I can make design decisions, taking account of constraints such as time, resources and cost.
Making	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Planning	I can select tools and equipment suitable for the task. I can select materials and components suitable for the task. I can explain my choice of materials and components. I can produce appropriate lists of tools, equipment and materials that I need.	I can select tools and equipment suitable for the task. I can explain my choice of tools and equipment in relation to the skills and techniques I will be using. I can select materials and components suitable for the task. I can explain my choice of materials and components according to functional properties. I can request appropriate tools,	I can explain my choice of tools and equipment in relation to the skills and techniques I will be using. I can confidently select materials and components suitable for the task, naming the specific name of the materials and components. I can explain my choice of materials and components according to functional properties and aesthetic qualities. I can produce appropriate lists of tools, equipment and materials

			equipment and materials that I need. I can formulate step-by-step plans as a guide to making.	that I need. I can formulate step-by-step plans as a guide to making for others to confidently follow.
	Practical skills and techniques	I know the procedures for safety and hygiene. I can use a wider range of materials and components than KS1. I can measure, mark out, cut and shape materials and components. I can assemble, join and combine materials and components. I can apply a range of finishing techniques, including those from art and design. I am beginning to use techniques that involve a number of steps.	I can follow procedures for safety and hygiene. I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. I can accurately measure, mark out, cut and shape materials and components. I can accurately assemble, join and combine materials and components. I can accurately apply a range of finishing techniques, including those from art and design. I can use techniques that involve a number of steps. I can demonstrate resourcefulness when tackling practical problems.	I can follow procedures for safety and hygiene and also support others to do so. I can accurately use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. I can accurately measure, mark out, cut and shape materials and components to fine measurements. I can accurately assemble, join and combine materials and components to fine measurements. I can accurately apply a range of finishing techniques suitable for the product, including those from art and design. I can confidently use techniques that involve a number of steps. I can demonstrate

				resourcefulness when tackling practical problems and show support to others.
	Own ideas and products	I can identify the strengths and areas for development in my ideas. I can consider the views of others, including intended users, to improve my work. I can begin to evaluate my ideas and products against my original design specification.	I can identify the strengths and areas for development in my ideas and products. I can consider the views of others, including intended users, to improve my work. I can begin to critically evaluate the quality of the design, manufacture and fitness for purpose of my products as I design and make. I can evaluate my ideas and products against my original design specification.	I can identify the strengths and areas for development in my ideas and products and use this to refine my products. I can consider the views of others, including intended users, to improve my work and use this to refine my products. I can critically evaluate the quality of the design, manufacture and fitness for purpose of my products as I design and make. I can evaluate my ideas and products against my original design specification, identifying successes and next steps.
	Existing products	I can investigate and analyse: ▪ How well products have been designed ▪ How well products have been made ▪ Why materials have been chosen ▪ What methods of construction have been used ▪ How well products work ▪ How well products achieve	I can investigate and analyse: ▪ How well products have been designed ▪ How well products have been made ▪ Why materials have been chosen ▪ What methods of construction have been used ▪ How well products work ▪ How well products achieve	I can investigate and analyse: ▪ How sustainable the materials in products are ▪ What impact products have beyond their intended purpose.

		their purposes ▪ How well products meet user needs and wants.	their purposes ▪ How well products meet user needs and wants ▪ How much products cost to make ▪ How innovative products are ▪ How sustainable the materials in products are ▪ What impact products have beyond their intended purpose.	
	Key events and individuals	I can talk about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	I can investigate different inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	I can independently explore inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.
Technical Knowledge	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Making products work	I can use learning from science to help design and make products that work. I can use learning from mathematics to help design and make products that work. I know that materials have both functional properties and aesthetic qualities. I know that materials can be combined and mixed to create more useful characteristics. I know how mechanical systems such as cams or pulleys	I know that mechanical and electrical systems have an input, process and output. I can use the correct technical vocabulary for the projects I am undertaking. I know how more complex electrical circuits and components can be used to create functional products. I know that a 3D textiles product can be made from a combination of fabric shapes. I know that a recipe can be	I can program a computer to monitor changes in the environment and control my products. I can reinforce and strengthen a 3D framework.

		or gears create movement.	adapted by adding or substituting one or more ingredients.	
Cooking and Nutrition	**Progression Statement**	**Working Towards**	**Working At**	**Working Beyond**
	Where food comes from	I know that a recipe can be adapted a by adding or substituting one or more ingredients. I know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.	I know that seasons may affect the food available. I know how food is processed into ingredients that can be eaten.	I can explain that seasons may affect the food available, recognise what foods are available in different seasons. I know how food is processed into ingredients that can be eaten or used in cooking.
	Food preparation, cooking and nutrition	I can prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	I know that recipes can be adapted to change the appearance, taste, texture and aroma. I know that different food and drink contain different substances.	I know that recipes can be adapted to change the appearance, taste, texture and aroma, put this into practice in my own cooking. I know that different food and drinks contain different substances – nutrients, water and fibre – that are needed for health.