Design and Technology Skills and Knowledge Progression

Subject Domain	FS	YEAR 1	YEAR 2
Designing	• Experiments with design	• Work within a range of contexts e.g. story based and playgrounds • State what products they are designing and making • Say whether their products are for themselves or for others • Describe what their products are forUse existing knowledge to create their own designs • Start to develop and communicate ideas through discussing and drawing • **Generate ideas by drawing on their own experiences** • **Model ideas by exploring components and mock ups**	• Work confidently and imaginatively within a range of contexts, e.g. imaginary, local community, industry and wider environment • State what products they are designing and making • Say whether their products are for themselves or for others • Describe what their products are for • Say how their products will work and how they are suitable for intended users • Use simple design criteria to help develop their ideas • Generate ideas by drawing on their own experiences • Use knowledge of existing products to help come up with ideas • Develop and communicate ideas by talking and drawing • Model ideas by exploring machinery, materials, construction kits and by making templates and mock-ups • Use ICT, where appropriate, to develop and communicate their ideas • **Share ideas through discussion** • **Generate realistic ideas, focusing on the needs of the user**
Making	• Uses and explores a variety of materials	• Suggest what to do next through planning • Select what they need from a selection of tools, materials and machines	• Plan by suggesting what to do next • Select from a range of tools, machines and materials according to their characteristics

		• Follow safety and hygiene procedures Use a range of machines, materials, construction kits, textiles, food ingredients and mechanical products • Measure, mark out, shape and cut materials • **Assemble, join and combine materials and components**	• Explain their choices • Follow safety and hygiene procedures • Use a range of machines, materials, construction kits, textiles, food ingredients and mechanical products • Measure, mark out, shape and cut materials • Assemble, join, combine materials and components • Begin to use finishing techniques, including those from Art lessons
Evaluating	• Develops own ideas through selecting/using materials • Works on processes that interest them • Talks about ideas and processes which lead to design • Talks about features of their work recognizing differences/strengths between them	• Talk about their design ideas and what they are making • Talk about how to improve their products • Explore what products are, what they are made from, who they are for, how they are used and where they are from • Talk about what they like and dislike about existing products	• Talk about their design ideas and what they are making • Make simple judgements about their products and ideas against design criteria • Talk and write about how to improve their products • Explore what products are, what they are made from, who they are for, how they are used and where they might be used • Talk about what and why they like and dislike about existing products • **Give reasons**
Technical Knowledge	• Safely uses a variety of materials, tools and techniques • Uses what they have learnt about media and materials thinking about use and purpose • Represents own ideas, thoughts and feelings through Design and Technology	• Recognise a range of technology is used in places, e.g. homes and schools • Select and use technology for particular purposes • Know how to operate simple equipment • Show an interest in toys, buttons, flaps and simple mechanisms and operate them successfully • Understand the simple working characteristics of materials and machinery	• Understand the working characteristics of materials and machinery • Know how to make simple mechanisms move, e.g. leavers, sliders, wheels and axels • Recognise that food ingredients should be combined according to their sensory characteristics • Understand that freestanding structures can be made stronger, stiffer and more stable

	• Recognises a range of technology is used in places such as homes and schools • Selects and uses technology for a purpose • Finds out about uses of a range of everyday technology	• Know how to make simple mechanisms move, e.g. leavers, sliders, wheels and axels • Recognise that food ingredients should be combined according to their sensory characteristics • Begin to use the correct technical vocabulary for projects	• Recognise that 3D textile products can be assembled from two identical fabric shapes • Use the correct technical vocabulary for projects • **Understand and use a wide range of materials and components, e.g. electrical circuits and programming computer systems**
Cooking and Nutrition	• Knows importance of healthy diet and talks about ways to keep healthy • Making healthy choices (exc)	• Recognise that food comes from plants or animals • Know that food is farmed, grown elsewhere or caught • Name and sort foods into the five groups in 'The Eatwell Plate' • Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day • Prepare some simple dishes • Use different techniques, e.g. cutting, peeling and grating	• Know that food comes from plants or animals • Know that food is farmed, grown elsewhere (e.g. home) or caught • Name and sort foods into the five groups in 'The Eatwell Plate' • Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day • Know how to prepare simple dishes safely and hygienically, without using a heat source • Prepare a range of simple dishes • Use different techniques, e.g. cutting, peeling and grating • **Know that a healthy diet is made up from a variety and balance of different foods and drinks** • **Know that food is needed to provide energy for the body**

Design and Technology Skills and Knowledge Progression

Subject Domain	YEAR 3	YEAR 4

Designing	• Work confidently in a range of contexts, e.g. at home, school, leisure and industry • Describe the purpose of their products • Indicate design features of their products • Gather information about the needs and wants of individuals or groups • Develop their own design criteria • Share and clarify ideas through discussion • Model ideas using prototypes • Use annotated diagrams and some computer-aided design packages to develop and communicate ideas • Generate realistic ideas, focusing on the needs of the user • Begin to take account of the availability of resources	• Work confidently in a range of contexts, e.g. home, leisure, culture, industry and wider environment • Describe the purpose of their products • Indicate design features of their products that will appeal to intended users • Gather information about the needs and wants of individuals and groups • Develop their own design criteria and use this to inform ideas • Share and clarify ideas confidently, through discussion • Model ideas using prototypes and pattern pieces • Use annotated sketches, some cross-sectional drawings and computer-aided design packages, to develop and communicate ideas • Generate realistic ideas, focusing on the needs of the user • Make design decisions that take account of the availability of resources
Making	• Select tools and equipment suitable for the task and explain their choices • Select some materials and machinery suitable for the task • Order the main stages of making • Follow procedures for safety and hygiene • Use a wide range of materials and machinery, e.g. textiles, mechanical, construction kits, electrical and food ingredients • Measure, mark out, cut, shape materials and components with some accuracy • Assemble, join and combine many materials with some accuracy • Apply some finishing techniques	• Confidently select tools and equipment suitable to the task • Explain their choices, giving evidence • Select materials and machinery suitable to the task • Order the main stages of making in logical steps • Follow procedures for safety and hygiene • Use an extensive range of materials and machinery, e.g. textiles, mechanical, construction kits, electrical and food ingredients • Measure, mark out, cut and shape materials and components with accuracy • Assemble, join, and combine most materials accurately • Apply several finishing techniques accurately
Evaluating	• Identify the strengths and weaknesses in their ideas and products	• Identify the strengths and weaknesses in their ideas and products

	• Consider the views of others • Refer to their design criteria as they design and make • Use their design criteria to evaluate their completed products • Investigate and analyse how well products have been designed and made • Investigate and analyse which materials and methods were used and which were successful • Investigate and analyse how well the products worked • Investigate and analyse whether they achieved their purpose and the needs/wants of the users • Recognise successful inventors, designers chefs and engineers who have been influential in the design and technology industries	• Consider the views of others, including intended users, to improve their work • Refer to their design criteria as they design and make • Use their design criteria to evaluate and improve their completed products • Investigate and analyse how well products have been designed and made • Investigate and analyse why materials have been chosen • Investigate and analyse what methods of construction were used • Investigate and analyse how well the products worked • Investigate and analyse whether they achieved their purpose • Investigate and analyse the needs/wants of the users • Investigate and analyse who designed the products • Investigate and analyse where products were designed and made • Investigate and analyse when products were designed and made • Investigate and analyse whether products can be recycled or re-used • Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries • **Consider the impact and innovative qualities of their products**
Technical Knowledge	• Know how to use learning from Science and Maths to help design and make products that work • Understand that materials have functional and artistic qualities • Recognise that materials can be combined and mixed to create more useful characteristics	• Use learning from Science, Maths and other subjects to help design and make products that work • Understand that materials have functional and artistic qualities

	• Know how mechanical systems such as levers and linkages create movement • Know that simple electrical circuits and machines can be used to make functional products • Make strong, stiff shell structures • Know that a simple fabric shape can be used to make a 3D textile product • Recognise several fresh, pre-cooked and processed foods	• Apply this thinking successfully to their own products • Recognise that materials can be combined and mixed to create more useful characteristics • Know that mechanical and electrical systems have an input, process and output • Know how mechanical systems such as levers and linkages create movement • Know that simple electrical circuits and components can be used to create functional products • Program a computer to control their products • Make strong, stiff, shell structures for a purpose • Know that a single fabric shape can be used to make a 3D textile product • Recognise a range of fresh, pre-cooked and processed food
Cooking and Nutrition	• Know that food is farmed, reared, grown elsewhere (e.g. home), imported or caught locally, regionally and internationally • Know how to prepare and cook a variety of predominately savory dishes safely and hygienically, including the use of a heat source • Know how to use a range of techniques, e.g. peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • Recognise that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on 'The Eatwell Plate' • Know that to be active and healthy, food is needed to provide energy for the body	• Know that food is farmed, reared, grown elsewhere (e.g. home, allotments), exported, imported or caught, this can be a local, regional and international scale • Know how to prepare and cook a variety of savory and some sweet dishes safely and hygienically, including the use of a heat source • Know how to use a wide range of techniques, e.g. peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on 'The Eatwell Plate' • Know that to be active and healthy, food is needed to provide energy for the body • **Adapt recipes and know about substances that are needed for health, e.g. water, fibre and nutrients**

Design and Technology Skills and Knowledge Progression

Subject Domain	YEAR 5	YEAR 6
Designing	• Work confidently in a wide range of contexts, e.g. home, school, leisure, culture, industry, enterprise and wider environment • Describe in detail the purpose of their products • Indicate design features of their products that will appeal to intended users • Gather information about the needs and wants of individuals or groups • Develop their own design criteria and use this to inform their ideas • Carry out research, e.g. surveys and interviews to identify users' needs, wants and preferences • Develop a simple design specification to guide their thinking • Share and clarify ideas confidently, through discussion • Model ideas using prototypes and pattern pieces • Use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design packages to develop and communicate ideas • Generate realistic ideas, focusing on the needs of the user • Make design decisions based on time, cost and resource constraints	• Work confidently in a wide range of contexts, e.g. home, school, leisure, culture, industry, enterprise and wider environment • Describe in detail the purpose of their products • Indicate design features of their products that will appeal to intended users • Gather information about the needs and wants of individuals or groups • Develop their own design criteria and use this to inform their ideas • Carry out research, e.g. surveys and interviews, questionnaires and web-based resources to identify users' needs, wants and preferences • Develop a detailed design specification to guide their thinking and planning • Share and clarify ideas confidently, through discussion • Model ideas using prototypes and pattern pieces • Use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design packages to develop and communicate ideas • Generate realistic ideas, focusing on the needs of the user • Make design decisions that take account of the availability of resources • Generate innovative ideas drawing on research • Make informed design decisions based on time, cost and resource constraints • **Combine ideas from a variety of sources** • **Use a variety of approaches to generate creative ideas**

Making	• Select tools and equipment suitable to the task confidently • Explain their choices, giving evidence • Select materials and components suitable to the task • Produce appropriate lists of tools, equipment and materials that they will need • Order the stages of the making process, in logical steps • Formulate step-by-step plans as guide to making • Follow procedures for safety and hygiene • Use an extensive range of materials and components, e.g. textiles, mechanical, construction kits, electrical and food ingredients • Measure, mark out, cut, and shape materials and components with accuracy • Assemble, join and combine most materials accurately • Apply a range of finishing techniques accurately, including those from Art lessons • Use techniques that involve a number of steps • Use resourcefulness when tackling practical problems	• Select tools and equipment suitable to the task confidently • Explain their choices, giving evidence • Select materials and components suitable to the task • Produce appropriate lists of tools, equipment and materials that they will need • Order the stages of the making process, in logical steps • Formulate step-by-step plans as guide to making • Follow procedures for safety and hygiene • Use an extensive range of materials and components, e.g. textiles, mechanical, construction kits, electrical and food ingredients • Measure, mark out, cut, and shape materials and components with accuracy • Assemble, join and combine most materials accurately • Apply a range of finishing techniques accurately, including those from Art lessons • Use techniques that involve a number of steps • Use resourcefulness, resilience and innovation, when tackling practical problems • Explain next steps in learning, drawing from prior experience
Evaluating	• Identify the strengths and weaknesses in their ideas and products confidently • Consider the views of others, including intended users, to improve their work • Refer to their design criteria as they design and make • Use their design criteria to evaluate and improve their completed products • Evaluate critically the quality of the design, manufacture and fitness for purpose of their products	• Identify the strengths and weaknesses in their ideas and products confidently • Consider the views of others, including intended users, to improve their work • Refer to their design criteria as they design and make • Use their design criteria to evaluate and improve their completed products • Evaluate critically the quality of the design, manufacture and fitness for purpose of their products

	• Evaluate their ideas and products against their original design specification • Investigate and analyse how well products have been designed and made • Investigate and analyse why materials have been chosen • Investigate and analyse what methods of construction were used • Investigate and analyse how well the products worked • Investigate and analyse whether they achieved their purpose and the needs/wants of the users • Investigate and analyse who designed the products • Investigate and analyse where products were designed and made • Investigate and analyse when products were designed and made • Investigate and analyse whether products can be recycled or re-used • Consider cost and sustainability • Consider the impact and innovative qualities of their products • Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries	• Evaluate their ideas and products against their original design specification • Investigate and analyse how well products have been designed and made • Investigate and analyse why materials have been chosen • Investigate and analyse what methods of construction were used • Investigate and analyse how well the products worked • Investigate and analyse whether they achieved their purpose and the needs/wants of the users • Investigate and analyse who designed the products • Investigate and analyse where products were designed and made • Investigate and analyse when products were designed and made • Investigate and analyse whether products can be recycled or re-used • Investigate and analyse how much products cost to make • Investigate and analyse how innovative products are • Investigate and analyse how sustainable the materials in products are • Investigate and analyse what impact products have beyond their intended purpose • Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries
Technical Knowledge	• Use learning from Science, Maths, other subjects and sources to help design and make products that work • Understand that materials have functional and artistic qualities	• Use learning from Science, Maths, other subjects and sources to help design and make products that work • Understand that materials have functional and artistic qualities

	• Apply this thinking successfully to their own products • Recognise that materials can be combined and mixed to create more useful characteristics • Know that mechanical and electrical systems have an input, process and output • Know how mechanical systems, e.g. levers and linkages create movement • Know that simple electrical circuits and components can be used to create functional products • Program a computer to control their products • Make strong, stiff shell structures for a purpose • Know that a single fabric shape can be used to make a 3D textile product • Recognise a range of fresh, pre-cooked and processed foods • Know that mechanical systems, e.g. cams, pulleys or gears create movement • Explore more complex electrical circuits and components • Program a computer to monitor changes in the environment and control their products • Reinforce and strengthen a 3D framework • Know that 3D textile products can be made from a combination of fabric shapes • Adapt recipes by adding or substituting one or more ingredients	• Apply this thinking successfully to their own products • Recognise that materials can be combined and mixed to create more useful characteristics • Know that mechanical and electrical systems have an input, process and output • Know how mechanical systems, e.g. levers and linkages create movement • Know that simple electrical circuits and components can be used to create functional products • Program computer systems and devices to control their products • Make strong, stiff shell structures for a purpose • Know that a single fabric shape can be used to make a 3D textile product • Recognise a wide range of fresh, pre-cooked and processed foods • Know that mechanical systems, e.g. cams, pulleys or gears create movement • Explore more complex electrical circuits and components • Program computers and devices to monitor changes in the environment and control their products • Reinforce and strengthen a 3D framework • Know that 3D textile products can be made from a combination of fabric shapes • Recreate and adapt existing and new recipes by adding or substituting a range of ingredients • **Know the physical properties and how to classify materials by structure** • **Understand simple electronic components** • **Know textile fibre sources**
Cooking and Nutrition	• Know that food is farmed, reared, grown elsewhere (e.g. home, allotments), exported, imported or caught locally, regionally and on an internationally	• Know that food is farmed, reared, grown elsewhere (e.g. home, allotments), exported, imported or caught locally, regionally and on an internationally

	• Know the seasons and weather affect food availability • Know how food is processed into ingredients that can be eaten or used in cooking • Know how to prepare and cook a variety of savory and some sweet dishes safely and hygienically, including the use of a heat source • Know how to use a wide range of techniques, e.g. peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • Know that a healthy diet is made up of a variety and balance of different foods and drink, as depicted in 'The Eatwell Plate' • Know that to be active and healthy, food is needed to provide energy for the body • Know that recipes can be adapted to change the taste, texture, aroma, and appearance • Know that different foods contain substances that are needed for health, e.g. water, fibre, vitamins and nutrients	• Know the seasons and weather affect food availability • Know how food is processed into ingredients that can be eaten or used in cooking • Know how to prepare and cook a variety of savory and some sweet dishes safely and hygienically, including the use of a heat source • Know how to use a wide range of techniques, e.g. peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • Know that a healthy diet is made up of a variety and balance of different foods and drink, as depicted in 'The Eatwell Plate' • Know that to be active and healthy, food is needed to provide energy for the body • Know that recipes can be adapted to change the taste, texture, aroma, and appearance • Know that different foods contain substances that are needed for health, e.g. water, fibre, vitamins and nutrients • Understand that healthy diets must incorporate the correct amounts of food types and substances • Understand that exercise is also important for our wellbeing and fitness • **Know the importance of balanced diets and how to store, prepare and cook food safely and hygienically** • **Know how to minimise food waste and litter**