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Design and Technology Progression Map

Key Area	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Design	Know that a picture can give information and ideas to make a product. Know that different materials/ ingredients/ tools can be used to create a design.	Know that a plan/design draws together ideas to make a product Know that there are different ways of creating a design.	Know that a plan/design can be created and adapted. Know how to design purposeful and appealing products based on criteria. Know that some ways of developing, modelling and communicating ideas are more appropriate than others in the design process.	Know that research can inform plans/design criteria which can be altered and improved for a range of purposes. Know some ways to communicate their design ideas.	Know that the outcome from a design will be affected by the designer's choice. Know how to design products that are fit for purpose and be able to communicate their design ideas.	Know that the design of a product can be revisited and re-shaped in stages and sections. Know how to design products that are fit for purpose, aimed at particular individuals or groups. Know how to communicate their ideas through discussion, sketches and diagrams.	Know that purpose and audience subsequently shapes the design of a product. Know how to design innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Know how to communicate ideas through discussion, annotated sketches, diagrams, prototypes, pattern pieces.

Making	Know how to use a selection of tools and materials safely to make products. Know how to use a variety of natural, recycled and manufactured materials for sculpting, e.g. clay, straw and card	Know that there are a range of different tools and materials which can be used to create a product. [for example, cutting, shaping, joining and finishing]. Know how to build structures and explore how to make them stronger. Know how to use a mechanism [for example, a lever, slider, wheel], in their products.	Know that some tools and materials are more useful than others when creating a product. Know how to select from and use a range of tools, materials and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Know how to build structures, exploring how they can be made stronger, stiffer and more stable Know how to use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Know that the characteristics of tools and materials informs their use in the making process. Know how to select materials for their aesthetic qualities. Know how to use a mechanical system in their product [for example, gears, pulleys]	Know that the success of the making process is reliant on the accurate selection and use of appropriate tools and materials. Know how to select materials for their functional and aesthetic qualities. Know how to use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Know and select from a wider range of tools and equipment to perform practical tasks. Such as cutting, shaping, joining, finishing. Know that a prototype is an experimental process and that preliminary versions can inform the final product. Know and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	Know and accurately select from and use a wide range of tools and materials. Know that a prototype can be refined, is a key part of the making process and can be tested out on a wide range of users so that the final product is fit for purpose. Know and understand electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

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Evaluating	Know that discussing how their product went well and the changes they would make will improve it.	Know that a simple evaluation can be used to improve a product.	Know that in order to evaluate ideas and products a set of design criteria is needed. Know how to explore and evaluate a range of existing products.	Know that the purpose of evaluation is for reflection and to help inform any changes required to make a product more effective.	Know that their own evaluation and the views of others can lead to modifications to the criteria and the creation of a new and improved design.	Know that products have evolved over time as a result of constant evaluation and modification in line with the changing world.	Know that evaluation of past and present DT leads to an understanding about its impact on modern day life. Know how the views of others can improve their work.

Cooking and Nutrition	Know that there are healthy and unhealthy foods. Know the names of some fruits and vegetables. Know how to describe taste and smell. Know that there are lots of different foods linked to tradition, culture and religion. Know how to use a knife and chopping board safely.	Know that food can contribute towards a healthy diet. Know about the balanced plate. Know the names of a variety of fruits and vegetables. Know adjectives to describe taste, smell, texture. Know how to cut with a knife, grate and peel. Know where food comes from. Know how to design and make (pizza)	Know about the food groups for a balanced diet. Know that food choices have an impact on health. Know that some fruits and vegetables need to be washed, cut, cored, peeled or grated before they can be eaten. Know how to cut with a knife, grate and peel. Know that food comes from different sources. Know how to design, make and evaluate (pizza).	Know that food can be classified into groups and that each group can contribute towards a balanced diet. Know what seasonal food is. Know how to follow a recipe. Know that food has a limited lifespan without intervention and that there are methods which can prolong and preserve food.	Know that your own food choices have a direct impact on your own health. Know that parts of the world have different seasonal food. Know that there are a range of techniques that can be used in preparing and cooking different types of food.	Know that most foods we buy have nutrition labels to help us make informed choices about what we eat. Know that there are different processes that food goes through to get to the final product. Know how to design a meal using the knowledge learned.	Know that most foods we buy have nutrition labels to help us make informed choices. Know that calories come from fats, proteins and carbohydrates. Know how to use a range of preparation/cooking techniques. Know how to adapt a recipe for a purpose. Know how to add ingredients that reflect global cuisine.

Inventions and Achievements	Pupils will know about and explore a range of products Finger puppets books/Pop out books Moveable parts	Pupils will know about and explore a range of products, inventions and ideas including the following: Puppets (finger, glove) Vehicles Sliding mechanisms Moving mechanisms Toy and garage structures	Know about a famous invention/inventor and explain it. Charles Babbage Ada Lovelace Steve Jobs Alexander Graham - Bell Tim Berners-Lee W B Wilkinson	Know about a famous invention/inventor and explain it in detail. Charles Babbage Ada Lovelace Steve Jobs Alexander Graham - Bell Tim Berners-Lee W B Wilkinson	Know and explain the importance of an invention and the inventor. Charles Babbage Ada Lovelace Steve Jobs Alexander Graham -Bell Tim Berners-Lee W B Wilkinson	Know and understand how key events, inventions and individuals in design and technology have helped shape the world. Charles Babbage Ada Lovelace Steve Jobs Alexander Graham - Bell Tim Berners-Lee W B Wilkinson

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KEY VOCABULARY 	Puppets, make, fruits, vegetables, recipe, materials, tools, scissors, paint brushes, cutlery, colour, design, discuss, improve, change, healthy, un healthy , split pins, Sellotape, paper clips, stapler, Selections, tools,	Puppets Vehicles Card, split pin, purpose, vehicle, wheels, features, stable, structure, purpose, recipe, balanced, healthy, diet, fruits, vegetables, cut, peel, grate, make, movement, pictogram, popular, recipe, materials, sewing	Puppets Vehicles Sliding mechanisms, card, split pin, purpose, vehicle, axles, chassis and wheels, features, stable, structure, purpose, recipe, balanced, healthy, diet, fruits, vegetables, cut, core, peel, grate, make, movement, pictogram, recipe, materials, sewing	Inventor, invention, waterproof, World Wide Web, design, prototype, absorbency, opacity, mechanical computer, programmer, mechanism, linkage, pivot, rotate and lever, graphic, font, mechanism, transition, motion, memory chip, algorithm, illuminated, bulb, circuit, LED, frame, measure, clamp, saw, sand, join wood, beam, pillar, nutrition, seasonal, slicing, dicing, beating, whisking, folding, sieving, rolling and grating	Inventor, invention, waterproof, World Wide Web, design, prototype, absorbency, opacity, mechanical computer, programmer, mechanism, linkage, pivot, rotate and lever, graphic, font, mechanism, transition, motion, memory chip, algorithm, illuminated, bulb, circuit, LED, frame, measure, clamp, saw, sand, join wood, beam, pillar, nutrition, seasonal, slicing, dicing, beating, whisking, folding, sieving, rolling and grating	Inventor, invention, waterproof, World Wide Web, design, prototype, absorbency, opacity, mechanical computer, programmer, mechanism, linkage, pivot, rotate and lever, graphic, font, mechanism, transition, motion, memory chip, algorithm, illuminated, bulb, circuit, LED, incandescent, frame, measure, clamp, saw, sand, join wood, beam, pillar, nutrition, seasonal, slicing, dicing, beating, whisking, folding, sieving, rolling and grating	Inventor, invention, waterproof, World Wide Web, design, prototype, absorbency, opacity, mechanical computer, programmer, mechanism, linkage, pivot, rotate and lever, graphic, font, mechanism, transition, motion, memory chip, algorithm, illuminated, bulb, circuit, LED, incandescent, frame, measure, clamp, saw, sand, join wood, beam, pillar, nutrition, seasonal, slicing, dicing, beating, whisking, folding, sieving, rolling and grating

Impact of Design and Technology (End points)	A EYFS child working at the expected standard can: 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: Use a range of small tools, including scissors, paint brushes and cutlery. (ELGs: Expressive Arts and Design Creating with Materials, Physical Development- Fine Motor Skills)	A Year 1 child working at the expected standard can name a variety of fruits and vegetables and use adjectives to describe the taste, smell and texture and can cut them safely with a knife. They know what the word 'stable' means. They can explore a range of materials and evaluate the usefulness of their properties for a particular project. They can follow a design to make a stable structure. They know how to use a mechanism and make one in their own design. moving mechanisms. They can follow a design to create a product. They can evaluate their finished product by identifying things that worked well and things that could be improved.	A Year 2 child working at the expected standard can name a variety of foods and can use the model of the balanced plate to evaluate how healthy they are. They can explain why each of the food groups is important for a balanced diet. They can design and make a healthy food choice following given criteria. They can evaluate their work saying what they think and feel about it. They can investigate a range of products (such as vehicles, puppets) identifying and labelling their features. They can follow a design to make a product (such as vehicle, puppet). They can use different technical skills to make a product. They can evaluate their finished product by identifying what went well and what could be improved.	A Year 3 child working at the expected standard knows that different parts of the world have different seasonal food. They can practise cooking skills. They can follow a recipe and understand healthy meals and menus and know that food has a life span. They know how to make structures more stable. They can experiment with materials and design a product (such as a mini green house) selecting appropriate tools and materials. They can experiment with different fonts and graphic design features. They can evaluate and make changes to improve. They know about famous inventors/inventions.	A Year 4 child working at the expected standard knows that different parts of the world have different seasonal food. They can practise a range of cooking skills. They can follow a recipe and understand healthy meals and menus. They can explain how to make structures more stable. They can experiment with a range of materials to test which would be most appropriate. They can design a product (such as a mini green house) using specific design criteria. They can select appropriate tools and materials and experiment with different design features. They can self evaluate and use the ideas of others to modify their designs. They know about famous inventors and inventions.	A Year 5 child working at the expected standard knows about healthy foods and the importance of nutrition labels. They know how to design a meal using the knowledge they have learned. They can plan, design a product and use a range of technical skills in making it. This includes mechanical features and an electrical system. They can clearly communicate their ideas. They can evaluate the function and visual appeal of their product. They know that products have evolved over time. They know and can explain the importance of an invention and the inventor.	A Year 6 child working at the expected standard can use a range of preparation and cooking techniques and understands food groups and healthy choices. They can plan, design a product and accurately use a range of technical skills in making it. This includes mechanical features and electrical systems. They can communicate their ideas in a range of ways. They can evaluate the function and visual appeal of their product against a set of design criteria. They know and understand how key inventions and individuals have helped shape the world.

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Substantive Knowledge	EYFS	KEY STAGE 1 Cycle A	Y3/4 Cycle A	Y5/6 Cycle A
		Autumn Playground Equipment -To understand structures, need to be strong and stable. -To know materials, have different properties. -To use a range of cutting and joining techniques safely. -To understand methods for strengthening materials. Spring Toy Fire Engine – linked to The Great Fire of London -To understand wheels and axels. -To select and use a range of tools and equipment. -To design and make a functional product. Summer Healthy Pizza -To understand the principles of a balanced and varied diet. -To understand where food comes from. -To cut, peel or grate ingredients safely and hygienically.	**Autumn** ***Bridges (link to Geography)*** -To research and develop design criteria for functional products that are fit for purpose. -To generate, develop model and communicate ideas through anotated sketches -To select from and use a wide range of tools and equipment to perform practical tasks (cutting, shaping, joining, strengthening and finishing) -To investigate and analyse a range of existing products -To understand how key events and individuals in D+T have helped shape the world (John Roebling – Suspension Bridge inventor) **Spring** ***Satnav/phone holder for inside a car*** -To use research and develop design criteria for a product aimed at particular individuals or groups - To generate, develop, model and communicate ideas through discussion, prototypes and computer aided design -To select from and use a range of materials and components according to functional and aesthetic qualities -To investigate and evaluate a range of existing products	**Autumn** **Cams, pulleys and levers – moving toys with mechanisms** Know how to communicate ideas through discussion, annotated sketches, diagrams, prototypes, pattern pieces. Know and select from a wider range of tools and equipment to perform practical tasks. Such as cutting, shaping, joining, finishing. **Spring** **Cooking – WWII rationing and traditional recipes** Know that most foods we buy have nutrition labels to help us make informed choices. Know that calories come from fats, proteins and carbohydrates. Know how to use a range of preparation/cooking techniques. **Summer** **Electrical circuits – Board games with electrical components** Know how to design products that are fit for purpose, aimed at particular individuals or groups. Know how to build structures, exploring how they can be made stronger, stiffer and more stable Know and understand electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

			-To evaluate their ideas and products against their own design criteria -To apply their understanding of computing to program, monitor and control their products **<u>Summer</u>** ***Musical Instruments (Link to Science)*** -To research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose. -To generate and communicate their ideas through annotated sketches, exploded diagrams and prototypes. - To select from and use a range of components and materials according to functionality and aesthetic qualities -To understand how key events and individuals in D+T have changed teh world (Bartolomeo Cristofort – the Piano)	

		KEY STAGE 1 Cycle B	**Y3/4 Cycle B**	**Y5/6 Cycle B**
		Autumn Textiles – Bunting/ sock puppet -To understand how materials can be combined for different functions. -To use a range of joining techniques and develop designs accordingly. -To make products, refining the design as work progresses. Spring Moving Pictures – linked to Traditional Tales in English -To explore and use mechanisms (levers and sliders) in their products -To understand a product can be adapted to make it more functional. Summer Picnic food – related to seaside/teddy bears picnic -To understand the principles of a balanced and varied diet. -To understand where food comes from. -To cut, peel or grate ingredients safely and hygienically. -To measure ingredients.	**Autumn** ***Stone Age, Bronze Age and Iron Age Shelters (Link to History)*** -To develop design criteria to inform the design of an appealing product that is fit for purpose -To select from and use a range of materials including construction materials and textiles according to functional properties. **Spring** ***Seismographs (Link to Geography)*** -To research components required to make functional machines for a specific purpose and target audience - To generate, develop and communicate ideas and design a product that is fit for purpose -To select from and use a range of tools to cut, shape and join - To select from and use a range of components according to functional properties - To evaluate their ideas and products against their own design criteria -To understand how specific individuals and products have changed the world (John Milne - the Seismograph) **Summer** ***Egyptian Banquet (Link to History)***	**Autumn** **3D Map Building** Know that purpose and audience subsequently shapes the design of a product. Know and select from a wider range of tools and equipment to perform practical tasks. Such as cutting, shaping, joining, finishing. Know that evaluation of past and present DT leads to an understanding about its impact on modern day life. **Spring** **Textiles – Felt phone cases** Know that purpose and audience subsequently shapes the design of a product. Know that a prototype can be refined, is a key part of the making process and can be tested out on a wide range of users so that the final product is fit for purpose. **Summer** **Cooking – Using chocolate as an ingredient** Know that there are different processes that food goes through to get to the final product. Know how to adapt a recipe for a purpose. Know how to add ingredients that reflect global cuisine.

		-To understand the principles of a healthy and varied diet -To prepare a variety of savoury dishes -To understand seasonality	