Design and Technology

Skills progression document

Year 1

	Autumn	Spring	Summer
Topic	Exploring materials	Healthy eating	Vehicles
Outcome	To sew a diva lamp template.	To make a portion of coleslaw for my family.	To design and make a vehicle.
Aspect of DT	Textiles	Cooking and Nutrition	Mechanisms
Focus	Templates and joining	Preparing fruit and vegetables	Wheels and axles
Knowledge, skills and understanding	Developing, Planning and Communicating ideas - Can they think of some ideas on their own? - Can they explain what they want to do and why? - Can they use pictures and words to plan? - Can they design a product, which has a purpose and is appealing? - Working with tools, equipment, materials and components to make quality products - Can they explain what they are making?		

	- Which tools are they using? - Evaluating processes and products (own ideas and products and existing products) - Can they describe how something works? - Can they talk about their own work and things that other people have done?		
Designing	- Design a functional and appealing product for a chosen user and purpose based on simple design criteria. - Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.	- Design appealing products for a particular user based on simple design criteria. - Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. - Communicate these ideas through talk and drawings.	- Generate initial ideas and simple design criteria - through talking and using own experiences. - Develop and communicate ideas through drawings and mock-ups.

Making	- Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining, and finishing. - Select from and use textiles according to their characteristics	- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. - Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.	- Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. - Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.
Evaluating	- Explore and evaluate a range of existing textile products relevant to the project being undertaken. - Evaluate their ideas throughout and their final products	- Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. - Evaluate ideas and finished products against design criteria, including intended user and purpose.	- Explore and evaluate a range of products with wheels and axles. - Evaluate their ideas throughout and their products against original criteria

	against original design criteria.		
Technical knowledge and understanding	- Understand how simple 3-D textile products are made, using a template to create two identical shapes. - Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.	- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. - Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of the Eatwell Plate. - Know and use technical and sensory vocabulary relevant to the project	- Explore and use wheels, axles and axle holders. - Distinguish between fixed and freely moving axles. - Know and use technical vocabulary relevant to the project.

	- Know and use technical vocabulary relevant to the project		
Key questions	• Can they describe how different textiles feel? • Can they make a product from textile by gluing? • Can they measure textiles? • Can they join textiles together to make something? • Can they cut textiles? • Can they explain why they chose a certain textile?	• Can they use techniques such as cutting, grating, and peeling safely? • Can they describe the texture of foods? • Can they describe the properties of the ingredients they are using? • Do they wash their hands and make sure that surfaces are clean? • Can they explain what it means to be hygienic? Are they hygienic in the kitchen? • Can they think of interesting ways of	• Can they make a product which moves? • Can they cut materials using scissors? • Can they describe the materials using different words? • Can they say why they have chosen moving parts? • Can they make a structure/model using different materials? • Is their work tidy? • Can they make their model stronger if it needs to be?

		decorating food they have made? • Do they understand the principles of a balanced and varied diet? • Can they name and sort foods into the five groups in The Eatwell Plate? • Do they understand where food comes from? (plants and animals) • Do they understand that food has to be farmed, grown elsewhere or caught?	• Can they talk with others about how they want to construct their product? • Can they select appropriate resources and tools for their building projects? • Can they make simple plans before making objects e.g. drawings, arranging pieces of construction before building?
	Factual – What ingredients did you use? What fabric is this? Who is this designer? What is the tool called? Conceptual – Can you name some healthy foods? How did you reinforce structure? What did you learn about diet? What happened to the prototype? Procedural – What happened next? What are the steps we follow designing and making a product? How do you use this tool safely? Can you remember the next stage in the design process?		

	Metacognitive - What are your design criteria? Is there a way of helping you remember each stage of the design process? What have you learned about in other D&T lessons that could help you? What construction skills do you already have? METACOGNITIVE questions have the greatest impact on pupil progress.

Design and Technology

Skills progression document

Year 2

	Autumn	Spring	Summer
Topic	Christmas	Malaysia	Great fire of London
Outcome	To make a greeting card for Christmas	To make a fabric to be displayed at the Malaysian Market.	To prepare fruit and vegetables to put on a pizza.
Aspect of DT	Mechanisms	Textiles	Cooking and Nutrition
Focus	Sliders and Levers	Templates and joining	Preparing fruit and vegetables
Knowledge, skills and understanding	Developing, Planning and Communicating ideas • Can they think of ideas and plan what to do next? • Can they use knowledge of existing products to come up with ideas? • Can they say how their intended products are suitable for their intended users? • Can they use simple design criteria to develop their ideas? • Can they choose the best tools and materials? Can they give a reason why these are the best? • Can they describe their design by using pictures, diagrams, models, and words?		

	• Can they model ideas by making templates and mockups? • Can they use ICT, where appropriate, to develop and communicate their ideas? Working with tools, equipment, materials and components to make quality products • Can they join things (materials/components) together in different ways? Evaluating processes and products (own ideas and products and existing products) • What materials are existing products made from? • What do you like/dislike about existing products? • What went well with their work? • If they did it again, what would they want to improve?		
Designing	- Generate ideas based on simple design criteria and their own experiences, explaining what they could make. - Develop, model and communicate their ideas through drawings and mock-ups with card and	- Design a functional and appealing product for a chosen user and purpose based on simple design criteria. - Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and	- Design appealing products for a particular user based on simple design criteria. - Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. - Communicate these ideas through talk and drawings

	paper.	communication technology.	
Making	- Plan by suggesting what to do next. - Select and use tools, explaining their choices, to cut, shape, and join paper and card. - Use simple finishing techniques suitable for the product they are creating.	- Select from a range of tools and perform practical tasks, such as explaining their choices. - Select from and use textiles according to their characteristics, e.g., colour, characteristics suitable for the product they are creating.	- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. - Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product
Evaluating	- Explore a range of existing books and everyday products that use simple sliders and levers. - Evaluate their product by	- Explore and evaluate a range of existing textile products relevant to the project, including products that use simple sliders and levers.	- Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. - Evaluate ideas and finished products

	discussing how well it works in relation to the purpose and the user and whether it meets design criteria	- Evaluate their product by discussing how it works in relation to the purpose and the users and products against the original design criteria. - Evaluate their ideas throughout and their final products against the design criteria	against design criteria, including intended user and purpose.
Technical knowledge and understanding	- Explore and use sliders and levers. - Understand that different mechanisms produce different types of movement.	- Understand how simple 3D textile products are made, using a template to create identifiable shapes. - Understand how to join fabrics using different techniques, including painting, fabric crayons, stitching, and sequins,	- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. - Understand and use basic principles of a healthy and varied diet to prepare dishes,

	- Know and use technical vocabulary relevant to the project.	relevant to the project. buttons and ribbons. - Know and use technical vocabulary relevant to the project e.g., running stitch, glue and over stitch.	including how fruit and vegetables are part of The Eatwell Guide. - Know and use technical and sensory vocabulary relevant to the project
Key questions	• Can they make a product which moves? • Can they cut materials using scissors? • Can they describe the materials using different words? • Can they say why they have chosen moving parts? • Can they make a structure/model	• Can they describe how different textiles feel? • Can they make a product from textile by gluing? • Can they measure textiles? • Can they join textiles together to make something? • Can they cut textiles? • Can they explain why they chose a certain textile?	• Can they use techniques such as cutting, grating, and peeling safely? • Can they describe the texture of foods? • Can they describe the properties of the ingredients they are using? • Do they wash their hands and make sure that surfaces are clean?

	using different materials? • Is their work tidy? • Can they make their model stronger if it needs to be? • Can they talk with others about how they want to construct their product? • Can they select appropriate resources and tools for their building projects? • Can they make simple plans before making objects e.g. drawings, arranging pieces of		• Can they explain what it means to be hygienic? Are they hygienic in the kitchen? • Can they think of interesting ways of decorating food they have made? • Do they understand the principles of a balanced and varied diet? • Can they name and sort foods into the five groups in The Eatwell Plate? • Do they understand where food comes from? (plants and animals)

	construction before building?		• Do they understand that food has to be farmed, grown elsewhere or caught?
	Factual – What ingredients did you use? What fabric is this? Who is this designer? What is the tool called? Conceptual – Can you name some healthy foods? How did you reinforce structure? What did you learn about diet? What happened to the prototype? Procedural – What happened next? What are the steps we follow designing and making a product? How do you use this tool safely? Can you remember the next stage in the design process? Metacognitive - What are your design criteria? Is there a way of helping you remember each stage of the design process? What have you learned about in other D&T lessons that could help you? What construction skills do you already have? METACOGNITIVE questions have the greatest impact on pupil progress.		

Design and Technology

Skills progression document

Year 3

	Autumn	Spring	Summer
Topic	Food in different cultures	Recycling	DT week
Outcome	To make different healthy dips from different countries.	To make a moving recycling poster.	To make a basic purse using their chosen stitch.
Aspect of DT	Cooking and Nutrition	Mechanical systems	Textiles
Focus	Healthy and varied diet project	Levers and linkages projects	2D to 3D shape project
Knowledge, skills, and understanding	Developing, Planning, and Communicating ideas • Can they show that their design meets a range of requirements? • Can they put together a step-by-step plan which shows the order and also what equipment and tools they need? • Can they describe their design using an accurately labelled sketch and words? • How realistic is their plan? Working with tools, equipment, materials and components to make quality products		

	• Can they use equipment and tools accurately? Evaluating processes and products • What did they change which made their design even better?		
Designing	- Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture, and aroma for an appealing product for a particular user and purpose. - Use annotated sketches and appropriate	- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. - Use annotated sketches and prototypes to develop, model and communicate ideas.	• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produce annotated sketches, prototypes, final product sketches and pattern pieces

	information and communication technology, such as web-based recipes, to develop and communicate ideas.		

Making	- Plan the main stages of a recipe, listing ingredients, utensils and equipment. - Select and use appropriate utensils and equipment to prepare and combine ingredients. - Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.	- Order the main stages of making. - Order the main stages of making. - Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. - Explain their choice of materials according to functional properties and aesthetic qualities. - Use finishing techniques suitable for the product they are creating. - Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. - Select from and use finishing techniques	• Plan the main stages of making. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.

		suitable for the product they are creating.	
Evaluating	- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g., tables and simple graphs. - Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	- Investigate and analyse books and, where available, other products with lever and linkage mechanisms. - Evaluate their own products and ideas against criteria and user needs, as they design and make.	• Investigate a range of 3-D textile products relevant to the project. • Test their product against the original design criteria and with the intended user. • Take into account others' views. Understand how a key event/individual has influenced the development of the chosen product and/or fabric
Technical knowledge and understanding	- Know how to use appropriate equipment and utensils to prepare and combine food.	- Understand and use lever and linkage mechanisms. - Distinguish between fixed and loose pivots.	• Know how to strengthen, stiffen and reinforce existing fabrics.

	- Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. - Know and use relevant technical and sensory vocabulary appropriately.	- Know and use technical vocabulary relevant to the project.	• Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. Know and use technical vocabulary relevant to the project.
Key questions	- Can they choose a right ingredient for a product? - Can they use equipment safely? - Can they make sure that their product looks attractive?	- Do they use the most appropriate materials? - Can they work accurately to make cuts and holes? - Can they join materials? - Do they select the most appropriate materials?	• Who is it for? What will it hold? e.g. phone, money, plastic cards, pencils. • What shape will the holder be? How will it fasten?

	- Can they describe how their combined ingredients come together? - Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product? - Do they know what to do to be hygienic and safe? - Have they thought what they can do to present their product in an interesting way?	- Can they use a range of techniques to shape and mould? - Do they use finishing techniques? - Can they measure carefully so as to make sure they have not made any mistakes? - How have they attempted to make their product strong? - Do they take time to consider how they could have made their idea better? - Do they work at their product even though their original idea might not have worked?	• What fabric should I use? Which joining techniques would be the best for the fabric and pattern? • How can I make my holder aesthetically pleasing for the user? • How long will it take to make? • What tools will I need? • What order should I do it in? • Reflection and refining • What isn't working very well? • What could I improve on?

			• Will my holder/purse/wallet fulfill its function? • Is it suitable for the user?
	• Factual – What ingredients did you use? What fabric is this? Who is this designer? What is the tool called? • Conceptual – Can you name some healthy foods? How did you reinforce structure? What did you learn about diet? What happened to the prototype? • Procedural – What happened next? What are the steps we follow designing and making a product? How do you use this tool safely? Can you remember the next stage in the design process? • Metacognitive - What are your design criteria? Is there a way of helping you remember each stage of the design process? What have you learned about inn other D&T lessons that could help you? What construction skills do you already have? METACOGNITIVE questions have the greatest impact on pupil progress.		

Design and Technology

Skills progression document

Year 4

	Autumn	Spring	Summer
Topic	Friedericy dolls	Sustainability	Ancient buildings
Outcome	To design and make Friedericy dolls.	To design and make sustainable sandwiches for a chosen audience	To make a 3D model of the Pantheon.
Aspect of DT	Textiles	Food and Nutrition	Structures
Focus	2D to 3D shape project	Healthy and varied diet	Shell structures.
Knowledge, skills, and understanding	**Developing, Planning and Communicating ideas** • Can they come up with at least one idea about how to create their product? • Do they take account of the ideas of others when designing? • Can they produce a plan and explain it to others? • Can they suggest some improvements and say what was good and not so good about their original design? **Working with tools, equipment, materials and components to make quality products** • Can they tell if their finished product is going to be good quality?		

	• Are they conscious of the need to produce something that will be liked by others? • Can they show a good level of expertise when using a range of tools and equipment? **Evaluating processes and products** • Have they thought of how they will check if their design is successful? • Can they begin to explain how they can improve their original design? • Can they evaluate their product, thinking of both appearance and the way it works?		
Designing	• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produce annotated sketches, prototypes, final product sketches and pattern pieces	• Generate and clarify ideas through discussion with peers and adults to develop design criteria, including appearance, taste, texture, and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based	• Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.

		recipes, to develop and communicate ideas.	
Making	• Plan the main stages of making. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.	• Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.	• Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use finishing techniques suitable for the product they are creating.

Evaluating	• Investigate a range of 3-D textile products relevant to the project. • Test their product against the original design criteria and with the intended user. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric	• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	• Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose

Technical knowledge and understanding	• Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project.	• Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared, or caught. • Know and use relevant technical and sensory vocabulary appropriately.	• Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project
Key questions	• Who is it for? What will it hold? e.g. phone, money, plastic cards, pencils.	• Can they choose a right ingredient for a product? • Can they use equipment safely?	• What type of shell structure shall I make? • What will be the purpose of my product? How will my product

	• What shape will the holder be? How will it fasten? • What fabric should I use? Which joining techniques would be the best for the fabric and pattern? • How can I make my holder aesthetically pleasing for the user? • How long will it take to make? • What tools will I need? • What order should I do it in? • Reflection and refining	• Can they make sure that their product looks attractive? • Can they describe how their combined ingredients come together? • Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product? • Do they know what to do to be hygienic and safe? • Have they thought what they can do to present their product in an interesting way?	appeal to my intended user? • Which materials will I use to make it? • Which shape will be the best for my structure? • How will I stiffen and strengthen my structure? • What graphics techniques will I use to achieve a desired visual effect and purpose? • Will I work with someone else? • How long will it take?

	• What isn't working very well? • What could I improve on? • Will my holder/purse/wallet fulfill its function? • Is it suitable for the user?		What order will I work in? • What tools, techniques and skills will I use? • Do I need to adjust or change anything? • Will my product meet the needs of the user?
	• Factual – What ingredients did you use? What fabric is this? Who is this designer? What is the tool called? • Conceptual – Can you name some healthy foods? How did you reinforce structure? What did you learn about diet? What happened to the prototype? • Procedural – What happened next? What are the steps we follow designing and making a product? How do you use this tool safely? Can you remember the next stage in the design process? • Metacognitive - What are your design criteria? Is there a way of helping you remember each stage of the design process? What have you learned about inn other D&T lessons that could help you? What construction skills do you already have?		

	METACOGNITIVE questions have the greatest impact on pupil progress.

Design and Technology

Skills progression document

Year 5

	Autumn	Spring	Summer
Topic	World War 2	Shakespeare	DT week
Outcome	To create a model of an Anderson shelter	To create a model of an Elizabethan stage	To create a cloak for Prospero
Aspect of DT	Structures	Structures	Textiles
Focus	Shell structures	Frame structures	Combining different fabric shapes
Knowledge, skills, and understanding	Developing, Planning and Communicating ideas • Can they come up with a range of ideas after they have collected information? • Do they take a user's view into account when designing? • Can they produce a detailed step-by-step plan? • Can they suggest some alternative plans and say what the good points and drawbacks are about each? Working with tools, equipment, materials and components to make quality products • Can they explain why their finished product is going to be good quality?		

	• Can they explain how their product will appeal to the audience? • Can they use a range of tools and equipment expertly? • Evaluating processes and products • Do they keep checking that their design is the best it can be? • Do they check whether they anything could be improved? • Can they evaluate appearance and function against the original criteria?		
Designing	• Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to	• Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas	• Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design. Design purposeful, functional, appealing

	model and communicate ideas		products for the intended user that are fit for purpose based on a simple design specification.
Making	• Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use finishing techniques suitable for the product they are creating	• Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use finishing techniques suitable for the product they are creating	• Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluating	• Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose	• Investigate and evaluate a range of existing frame structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose	• Investigate and analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their Work.
Technical knowledge and understanding	• Develop and use knowledge of how to construct strong, stiff shell structures.	• Develop and use knowledge of how to construct strong frame structures.	• A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric

	• Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project.	• Know and use technical vocabulary relevant to the project. • Develop and use the knowledge of how the shapes of structures contribute to their strength.	shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.
Key questions	• Do they use the most appropriate • materials? • • Can they work accurately to make cuts • and holes? • Can they join materials? • Do they select the most appropriate materials?	• Do they use the most appropriate materials? • Can they work accurately to make cuts and joins? • Can they join materials? • Do they select the most appropriate materials? • Can they use a range of techniques to shape and mould? • Do they use finishing techniques?	• Have they given considered thought about what would improve their product even more? • Do they think what the user would want when choosing textiles? • How have they made their product attractive and strong?

	• Can they use a range of techniques to shape and mould? • Do they use finishing techniques? • Can they measure carefully so as to make sure they have not made any mistakes? • How have they attempted to make their product strong? • Do they take time to consider how they could have made their idea better?	• Can they measure carefully so as to make sure they have not made any mistakes? • How have they attempted to make their product strong? • Do they take time to consider how they could have made their idea better? • Do they work at their product even though their original idea might not have worked?	• Can they make up a prototype first? • Can they use a range of joining techniques? • Have they thought about how their product could be sold?

	• Do they work at their product even though their original idea might not have worked?		
	Factual – What ingredients did you use? What fabric is this? Who is this designer? What is the tool called? Conceptual – Can you name some healthy foods? How did you reinforce structure? What did you learn about diet? What happened to the prototype? Procedural – What happened next? What are the steps we follow designing and making a product? How do you use this tool safely? Can you remember the next stage in the design process? Metacognitive - What are your design criteria? Is there a way of helping you remember each stage of the design process? What have you learned about in other D&T lessons that could help you? What construction skills do you already have? METACOGNITIVE questions have the greatest impact on pupil progress.		

Design and Technology			
Skills progression document			
Year 6			
	Autumn	**Spring**	**Summer**
Topic	Investigating circuits	Making different recipes	DT week project
Outcome	To investigate the volume of a buzzer.	To cook a savoury scone.	Make a birdhouse using different materials.
Aspect of DT	Investigating circuits	Food	Structures
Focus	Tinker CAD	Celebrating culture and seasonality	Frame structures
Knowledge, skills, and understanding	**Developing, Planning and Communicating ideas** • Can they use a range of information to inform their design? • Can they use market research to inform plans? • Can they work within time constraints? • Can they follow and refine their plan if necessary? • Can they justify their plan to someone else? • Do they consider culture and society in their design?		

	Working with tools, equipment, materials and components to make quality products • Can they use tools and materials precisely? • Do they change the way they are working if needed? **Evaluating processes and products** • How well do they test and evaluate their final product? • Is it fit for purpose? • What would improve it? • Would different resources have improved their product? Would they need more or different information to make it even better?		
Designing	• Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take into account constraints including time, resources, and cost.	• Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.	• Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. • Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to

	• Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits, or circuit diagrams.	• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.	guide the development of their ideas and products, taking account of constraints including time, resources and cost.
Making	• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. • Competently select and accurately assemble materials, and securely connect electrical	• Write a step-by-step recipe, including a list of ingredients, equipment, and utensils • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.	• Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and

	components to produce a reliable, functional product. • Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.	Make, decorate and present the food product appropriately for the intended user and purpose.	join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making.
Evaluating	• Continually evaluate and modify the working features of the product to match the initial design specification. • Test the system to demonstrate its	• Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g., tables/graphs/charts such as star diagrams.	• Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and

	effectiveness for the intended user and purpose. Investigate famous inventors who developed ground-breaking electrical systems and components.	• Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets.	areas for development, and carrying out appropriate tests. • Research key events and individuals relevant to frame structures.
Technical knowledge and understanding	• Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products.	• Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary.	• Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical language relevant to the project

	Know and use technical vocabulary relevant to the project.		
Key questions	•Can they incorporate a switch into their product? •Can they use different kinds of circuits in their product? •Can they think of ways in which adding a circuit would improve their product? •Can they justify why they selected specific materials? •Can they work within a budget? •How have they ensured that their work is precise and accurate?	• Can they describe what they do to both be hygienic and safe? • How have they presented their product well? • Can they explain how their product should be stored with reasons? • Can they set out to grow their own products, taking account of time to grow different foods?	• Are their measurements accurate enough to ensure that everything is precise? • How have they ensured that their project is strong and fit for purpose? • Are they motivated enough to refine and improve their product? • Do they persevere through different stages of the making process?

	•Can they hide joints so as to improve the look of their product? •Did they consider the use of the product when selecting materials? •Does their product meet all design criteria?		
	Factual – What ingredients did you use? What fabric is this? Who is this designer? What is the tool called? **Conceptual** – Can you name some healthy foods? How did you reinforce structure? What did you learn about diet? What happened to the prototype? **Procedural** – What happened next? What are the steps we follow designing and making a product? How do you use this tool safely? Can you remember the next stage in the design process? **Metacognitive** - What are your design criteria? Is there a way of helping you remember each stage of the design process? What have you learned about in other D&T lessons that could help you? What construction skills do you already have? <u>METACOGNITIVE</u> questions have the greatest impact on pupil progress.		