DT CURRICULUM OVERVIEW

VISION	**Our vision is to prepare our children with skills for life which will inspire them to be creative individuals.**
INTENT	Our DT intent is to inspire our children to use their imagination to design and make products within a variety of contexts, with a great selection of materials and meaning to their learning. At Wildmoor Heath, our six unique curriculum drivers play an important role in the teaching and learning of Design and Technology. When possible, we aim to link DT work to other subject areas such as mathematics, science, computing and art. Teachers ensure that our learners have opportunities to reflect upon and evaluate their own work and each other's work constructively, as part of the development of their vocabulary and confident speaking and listening skills.
IMPLEMENTATION	Our DT curriculum is inclusive and progressive, allowing learners to learn and apply their skills to more difficult projects. We teach Design and Technology as a termly theme, focusing on the knowledge and skills stated in the National Curriculum. Wildmoor Heath learners are taught to design, make, evaluate, learn technical knowledge and vocabulary, understand about nutrition and take part in cooking classes.We use the following areas to plan our Design and Technology curriculum: Mastering practical skills; identifying and using key vocabulary; design, make, evaluate and improve; take inspiration from design throughout history. We believe it is important to give the children 'real life' hands-on experiences and continuously strive to create these opportunities for the children. Previously, learners have enjoyed the opportunity of working with Barratt Homes, helping to build a wall for the new housing development in Crowthorne. Pupils also have the opportunity to take part in a 'roots to food' workshop where the children learn about where the food that they eat has come from and enjoy cooking a delicious and healthy meal.
IMPACT	By the end of their primary education at Wildmoor Heath, children will have met the National Curriculum objectives in Design and Technology, well prepared for their future learning at secondary school. They will have developed a fascination in Design and Technology, and will be interested and prepared to take part in the development of tomorrow's rapidly changing world. By the time pupils leave Year 6 they will have: ● Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes; ● The ability to use time efficiently and work constructively and productively with others; ● The ability to carry out thorough research, show initiative and ask pertinent questions to develop a finely detailed knowledge of users' needs; ● The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely; ● A thorough knowledge of which tools, equipment and materials to use to make their products; ● The ability to manage risks exceptionally well to manufacture products safely and hygienically; ● A passion for the subject and knowledge of, up-to-date technological innovations in materials, products and systems; ● A secure understanding of the subject specific vocabulary.

Learning Sandwich

ENQUIRY		
KNOWLEDGE & KEY AREAS	**SKILLS & CONCEPTS**	**BIG IDEAS**
Structures Mechanisms (Mechanical or Electrical Systems) Food Textiles	Explore Design Make Evaluate	User Purpose Functionality Design Decisions Innovation Authenticity
COMMUNICATION		

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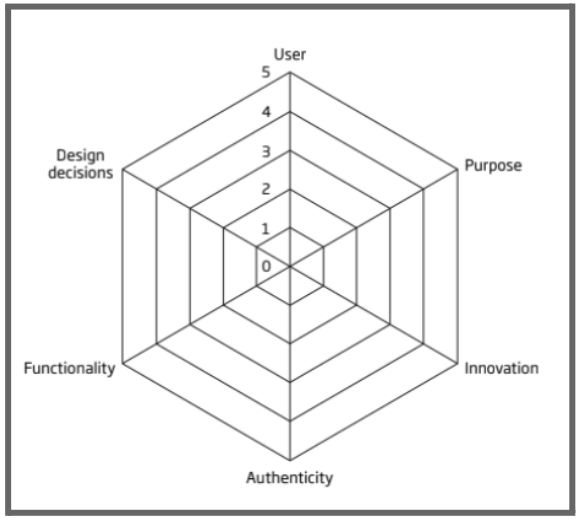
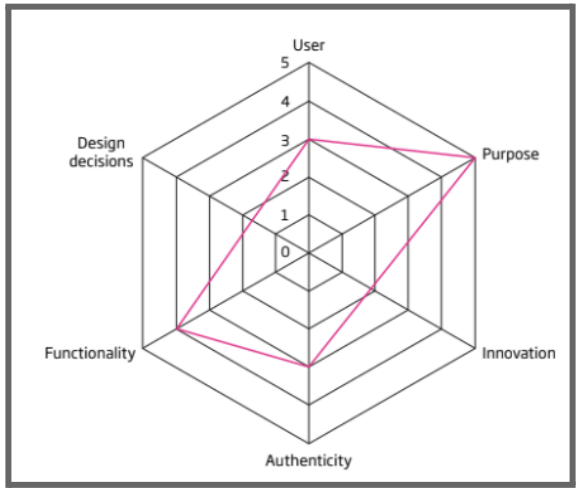
Big Ideas

At the heart of D&T is the 'iterative' process of designing and making. Through this process pupils' ideas are generated, externalised, communicated and evaluated through action. During an iterative process thought leads to action, resulting in further thought and action as pupils resolve design problems and address design opportunities. This is an intensely creative, reflective, evaluative way of working. Iterative designing and making should take place within projects which address the following principles, agreed by the Expert Subject Advisory Group (ESAG) for D&T:	
User	Pupils should have a clear idea of who they are designing and making products for, considering their needs, wants, values, interests and preferences. The intended users could be themselves or others, an imaginary or story-based character, a client, a consumer or a specific target group.
Purpose	Pupils should be able to clearly communicate the purpose of the products they are designing and making. Each product they create should be designed to perform one or more defined tasks. Pupils' products should be evaluated through use.
Functionality	Pupils should design and make products that work/function effectively in order to fulfil users' needs, wants and purposes. In D&T, it is insufficient for children to design and make products which are purely aesthetic.
Design Decisions	Pupils need opportunities to make their own design decisions. Making design decisions allows pupils to demonstrate their creative, technical and practical expertise, and use learning from other subjects. When making design decisions pupils decide on the form their product will take, how their product will work, what task or tasks it will perform and who the product will be for.
Innovation	When designing and making, pupils need some scope to be original with their thinking. Projects that encourage innovation lead to a range of design ideas and products being developed and are characterised by engaging open-ended starting points for learning.
Authenticity	Pupils should design and make products that are believable, real and meaningful to themselves and others.
A star diagram can rate the potential of D&T projects during curriculum planning and when evaluating the quality of teaching and learning.	

Example



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Long Term Plan

Year	Autumn	Spring	Summer
Reception	**Textiles** Christmas Sewing	**Structures** Trap for the gingerbread man	**Food** Healthy Eating week
YEAR 1	**Mechanisms** Sliders and levers moving book character	**Food** Preparing fruit & vegetables fantastic fruit	**Textiles** Templates and joining techniques puppet
YEAR 2	**Mechanisms** Wheels and axles fire engine	**Structures** Freestanding structures homes/shops	**Food** Preparing fruit & vegetables dips
YEAR 3	**Mechanisms (Mechanical Systems)** Pneumatics mascot	**Textiles** 2D shape to 3D product bag	**Food** Healthy eating Super salads
YEAR 4	**Food** Healthy and varied diet sandwich snacks / pizza	**Structures** Easter egg box shell structures	**Mechanisms (Mechanical Systems)** Levers and linkages story book / greetings card
YEAR 5	**Structures** Frames bird hide / bee hotel	**Food** Celebrating culture bread	**Mechanisms (Mechanical Systems)** Cams moving messages
YEAR 6	**Food** Seasonality carrot / potato soup / stew	**Textiles** Combining different fabric shapes phone case / bean bag toy	**Mechanisms (Electrical Systems)** Electrical board game

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Progression Objectives

YEAR GROUP	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE							
Mechanisms (KS1) Mechanical Systems & Electrical Systems (KS2)		Begin to use levers or slides.	Use levers or slides. Begin to understand how to use wheels and axles.	Select appropriate tools / techniques. Alter product after checking, to make it better. Begin to try new/different ideas. Use simple levers and linkages to create movement.	Select the most appropriate tools / techniques. Explain alterations to the product after checking it. Grow in confidence about trying new / different ideas. Use levers and linkages to create movement. Use pneumatics to create movement.	Refine product after testing. Grow in confidence about trying new different ideas. Begin to use cams, pulleys or gears to create movement.	Refine product after testing, considering aesthetics, functionality and purpose. Incorporate hydraulics and pneumatics. Be confident to try new /different ideas. Use cams, pulleys and gears to create movement.
Structures		Begin to measure and join materials, with some support. Describe differences in materials. Suggest ways to make material / product stronger.	Measure materials. Describe some different characteristics of materials. Join materials in different ways. Use joining, rolling or folding to make it stronger. Use their own ideas to try to make the product stronger.	Use appropriate materials. Work accurately to make cuts and holes. Join materials. Begin to make strong structures.	Measure carefully to avoid mistakes. Attempt to make a product strong. Continue working on the product even if the original didn't work. Make a strong, stiff structure.	Select materials carefully, considering intended use of product and appearance. Explain how the product meets design criteria. Measure accurately enough to ensure precision. Ensure the product is strong and fit for purpose. Begin to reinforce and strengthen a 3D frame.	Select materials carefully, considering intended use of the product, the aesthetics and functionality. Explain how the product meets design criteria. Reinforce and strengthen a 3D frame.
Textiles		Measure, cut and join textiles to make a product, with some support. Choose suitable textiles.	Measure textiles. Join textiles together to make a product, and explain how they did it. Carefully cut textiles to produce accurate pieces. Explain choices of textile. Understand that a 3D textile structure can be made from two identical fabric shapes.	Join different textiles in different ways. Choose textiles considering appearance and functionality. Begin to understand that a simple fabric shape can be used to make a 3D textiles project.	Think about the user when choosing textiles. Think about how to make a product strong. Begin to devise a template. Explain how to join things in a different way. Understand that a simple fabric shape can be used to make a 3D textiles project.	Think about user and aesthetics when choosing textiles. Use their own template. Think about how to make a product strong and look better. Think of a range of ways to join things. Begin to understand that a single 3D textiles project can be made from a combination of fabric shapes.	Think about the user's wants / needs and aesthetics when choosing textiles. Make products attractive and strong. Make a prototype. Use a range of joining techniques. Think about how the product might be sold. Think carefully about what would improve the product. Understand that a single 3D textiles project can be made from a combination of fabric shapes.
Food	Begin to understand some food preparation tools, techniques and processes.	Describe textures. Wash hands & clean surfaces.	Explain hygiene and keep a hygienic kitchen. Describe properties of ingredients and importance	Carefully select ingredients. Use equipment safely. Make products look attractive.	Explain how to be safe/hygienic. Think about presenting a product in an interesting /	Explain how to be safe / hygienic and follow their own guidelines.	Understand that a recipe can be adapted by adding / substituting ingredients. Explain seasonality of

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	Practise stirring, mixing, pouring, blending. Discuss how to make an activity safe and hygienic. Discuss use of senses Understand the need for variety in food. Begin to understand that eating well contributes to good health.	Think of interesting ways to decorate food. Say where some foods come from, (i.e. plant or animal). Describe differences between some food groups (i.e. sweet, vegetable etc.). Discuss how fruit and vegetables are healthy. Cut, peel and grate safely, with support.	of varied diet. Say where food comes from (animal, underground etc.). Describe how food is farmed, home-grown, caught. Draw the Eatwell Plate and explain there are groups of food. Describe "five a day". Cut, peel and grate with increasing confidence.	Think about how to grow plants to use in cooking. Begin to understand that food comes from the UK and the wider world. Describe how a healthy diet= variety/balance of food/drinks. Explain how food and drink are needed for active/healthy bodies. Prepare and cook some dishes safely and hygienically. grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	attractive way. Understand ingredients can be fresh, pre-cooked or processed. Begin to understand about food being grown, reared or caught in the UK or wider world. Describe the Eatwell Plate and how a healthy diet=variety / balance of food and drinks. Explain the importance of food and drink for active, healthy bodies. Prepare and cook some dishes safely and hygienically. Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	Present product well - interesting, attractive, fit for purpose. Begin to understand the seasonality of foods. Understand food can be grown, reared or caught in the UK and the wider world. Describe how recipes can be adapted to change appearance, taste, texture, aroma. Explain how there are different substances in food / drink needed for health. Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	foods. Learn about food processing methods. Name some types of food that are grown, reared or caught in the UK or wider world. Adapt recipes to change appearance, taste, texture or aroma. Describe some of the different substances in food and drink, and how they can affect health. Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.
SKILLS & CONCEPTS							
Design	Select appropriate resources. Use gestures, talking and arrangements of materials and components to show design. Use the language of designing and making (join, build, shape, longer, shorter, heavier etc.).	Have their own ideas. Explain what they want to do. Explain what product is for, and how it will work. Use pictures and words to plan, begin to use models. Design a product for themselves following design criteria. Research similar existing products.	Have their own ideas and plan what to do next. Explain what they want to do and describe how they may do it. Explain purpose of product, how it will work and how it will be suitable for the user. Describe design using pictures, words, models, diagrams. Design products for themselves and others following design criteria. Choose the best tools and materials, and explain choices. Use knowledge of existing products to produce ideas.	Begin to research others' needs. Design meets a range of requirements. Describe purpose of product. Follow a given design criteria. Have at least one idea about how to create a product. Create a plan which shows order, equipment and tools. Describe design using an accurately labelled sketch and words. Make design decisions explain how product will work. Make a prototype. Begin to use computers to show design.	Use research for design ideas. Design meets a range of requirements and is fit for purpose. Begin to create their own design criteria. Have at least one idea about how to create a product and suggest improvements for design. Produce a plan and explain it to others. Say how realistic plan is include an annotated sketch. Make and explain design decisions considering availability of resources. Explain how the product will work. Make a prototype. Begin to use computers to	Use the internet and questionnaires for research and design ideas. Take a user's view into account when designing. Begin to consider the needs of individuals or groups when designing and ensure the product is fit for purpose. Create their own design criteria. Have a range of ideas. Produce a logical, realistic plan and explain it to others. Use cross-sectional planning and annotated sketches. Make design decisions considering time and resources.	Draw on market research to inform design. Use research of user's individual needs, wants, requirements for design identify features of design that will appeal to the intended user. Create own design criteria and specification come up with innovative design ideas. Follow and refine a logical plan use annotated sketches, cross sectional planning and exploded diagrams make design decisions, considering resources and cost. Clearly explain how parts of design will work, and how they are fit for purpose.

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					show design.	Clearly explain how parts of the product will work. Model and refine design ideas by making prototypes and using pattern pieces. Use computer-aided designs.	Independently model and refine design ideas by making prototypes and using pattern pieces. Use computer-aided designs.
Make	Construct with a purpose, using a variety of resources. Use simple tools and techniques. Build / construct with a wide range of objects. Select tools and techniques to shape, assemble and join. Replicate structures with materials / components. Discuss how to make an activity safe and hygienic. Record experiences by drawing, writing, voice recording. Understand that different media can be combined for a purpose.	Explain what they are making and why. Consider what they need to do next. Select tools/equipment to cut, shape, join, finish and explain choices. Measure, mark out, cut and shape, with support. Choose suitable materials and explain choices. Try to use finishing techniques to make the product look good. Work in a safe and hygienic manner.	Explain what they are making and why it fits the purpose. Make suggestions as to what they need to do next. Join materials / components together in different ways. Measure, mark out, cut and shape materials and components, with support. Describe which tools they are using and why. Choose suitable materials and explain choices depending on characteristics. Use finishing techniques to make the product look good. Work safely and hygienically.	Select suitable tools / equipment and explain choices. Begin to use tools accurately. Select appropriate materials, fit for purpose. Work through the plan in order. Consider how good the product will be. Begin to measure, mark out, cut and shape materials / components with some accuracy. Begin to assemble, join and combine materials and components with some accuracy. Begin to apply a range of finishing techniques with some accuracy.	Select suitable tools and equipment and explain choices in relation to required techniques and use accurately. Select appropriate materials, fit for purpose, explaining choices. Work through the plan in order. Realise if the product is going to be good quality. Measure, mark out, cut and shape materials / components with some accuracy. Assemble, join and combine materials and components with some accuracy. Apply a range of finishing techniques with some accuracy.	Use selected tools / equipment with a good level of precision. Produce suitable lists of tools, equipment / materials needed. Select appropriate materials, fit for purpose; explaining choices, considering functionality. Create and follow a detailed step-by-step plan. Explain how the product will appeal to an audience. Mainly accurately measure, mark out, cut and shape materials / components. Mostly accurately assemble, join and combine materials / components. Mostly accurately apply a range of finishing techniques. Use techniques that involve a small number of steps. Begin to be resourceful with practical problems.	Use selected tools and equipment precisely. Produce suitable lists of tools, equipment, materials needed, considering constraints. Select appropriate materials, fit for purpose, explaining choices, considering functionality and aesthetics. Create, follow, and adapt detailed step-by-step plans. Explain how the product will appeal to the audience, making changes to improve quality. Accurately measure, mark out, cut and shape materials / components. Accurately assemble, join and combine materials / components. Accurately apply a range of finishing techniques. Use techniques that involve a number of steps. Be resourceful with practical problems.
Evaluate	Adapt work if necessary. Dismantle, examine, talk about existing objects/structures. Consider and manage some risks. Practise some appropriate safety measures independently. Talk about how things work. Look at similarities and differences between existing objects / materials / tools.	Talk about their work, linking it to what they were asked to do. Talk about existing products considering: use, materials, how they work, audience, where they might be used. Talk about existing products, and say what is and isn't good. Talk about things that other people have made.	Describe what went well, thinking about design criteria. Talk about existing products considering: use, materials, how they work, audience, where they might be used, expressing personal opinion. Evaluate how good existing products are. Talk about what they would do differently if they were to do it again and why.	Look at design criteria while designing and making. Use design criteria to evaluate finished products. Say what they would change to make design better. Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose.	Refer to design criteria while designing and making. Use criteria to evaluate a product. Begin to explain how they could improve original design. Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose. Discuss by whom, when	Evaluate quality of design while designing and making. Evaluate ideas and finished product against specification, considering purpose and appearance. Test and evaluate the final product. Evaluate and discuss existing products, considering: how well they've been made, materials, whether they	Evaluate quality of design while designing and making; is it fit for purpose? Keep checking design is the best it can be. Evaluate ideas and finished product against specification, stating if it's fit for purpose. Test and evaluate the final product, explaining what would improve it and the effect different resources

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	Show an interest in technological toys. Describe textures.	Begin to talk about what could make the product better.		Begin to understand by whom, when and where products were designed. Learn about some inventors / designers / engineers / chefs / manufacturers of groundbreaking products.	and where products were designed. Research whether products can be recycled or reused. Know about some inventors / designers / engineers / chefs / manufacturers of ground-breaking products.	work, how they have been made, fit for purpose. Begin to evaluate how much products cost to make and how innovative they are. Research how sustainable materials are. Talk about some key inventors / designers / engineers / chefs / manufacturers of ground-breaking products.	may have had. Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose. Evaluate how much products cost to make and how innovative they are. Research and discuss how sustainable materials are. Consider the impact of products beyond their intended purpose. Discuss some key inventors / designers/ engineers / chefs / manufacturers of ground-breaking products.

Assessment

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DT Skills	Use their own ideas to make something. Describe how something works. Cut food safely. Make a product which moves. Explain to someone else how they want to make their product. Choose appropriate resources and tools. Make a simple plan before making.	Think of an idea and plan what to do next. Choose tools and materials and explain why they have chosen them. Join materials and components in different ways. Explain what went well with their work. Measure materials to use in a model or structure. Describe the ingredients they are using.	Prove that their design meets some set criteria. Follow a step-by-step plan, choosing the right equipment and materials. Design a product and make sure that it looks attractive. Choose a material for both its suitability and its appearance. Select the most appropriate tools and techniques for a given task. Work accurately to measure, make cuts and make holes. Describe how food ingredients come together.	Use ideas from other people when they are designing. Produce a plan and explain it. Evaluate and suggest improvements for my designs. Evaluate products for both their purpose and appearance. Explain how they have improved their original design. Present a product in an interesting way. Measure accurately. Persevere and adapt their work when their original ideas do not work. Know how to be both hygienic and safe when using food.	Come up with a range of ideas after collecting information from different sources. Produce a detailed, step-by-step plan. Suggest alternative plans, outlining the positive features and drawbacks. Explain how a product will appeal to a specific audience. Evaluate appearance and function against original criteria. Use a range of tools and equipment competently. Make a prototype before making a final version. Show that they can be both hygienic and safe in the kitchen.	Use market research to inform their plans and ideas. Follow and refine their plans. Justify their plans in a convincing way. Show that they consider culture and society in their plans and designs. Show that they can test and evaluate my products. Explain how products should be stored and give reasons. Work within a budget. Evaluate their product against clear criteria.

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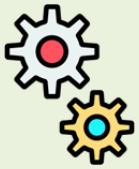
Mechanisms 	**Moving Book Character:** Use levers or slides.	**Fire Engine:** Explain how wheels and axles work.	**Pneumatic Mascot:** Select appropriate tools / techniques. Begin to try new/different ideas. Use pneumatics to create movement. Use simple levers and linkages to create movement.	**Story Book/Greetings Card:** Select the most appropriate tools / techniques. Explain alterations to the product after checking it. Use levers and linkages to create movement.	**Moving Messages:** Refine product after testing. Use cams, pulleys or gears to create movement.	**Electrical Board Game:** Refine product after testing, considering aesthetics, functionality and purpose. .
Structures 		**Homes:** Measure materials. Describe some different characteristics of materials. Join materials in different ways. Use joining, rolling or folding to make it stronger. Use their own ideas to try to make the product stronger.		**Easter Egg Box:** Measure carefully to avoid mistakes. Attempt to make a product strong. Continue working on the product even if the original didn't work. Make a strong, stiff structure.	**Bird Hide/Bee Hotel:** Select materials carefully, considering intended use of product and appearance. Explain how the product meets design criteria. Measure accurately enough to ensure precision. Ensure the product is strong and fit for purpose. Reinforce and strengthen a 3D frame.	
Textiles 	**Puppet:** Measure, cut and join textiles to make a product, with some support. Choose suitable textiles.		**Bag:** Join different textiles in different ways. Choose textiles considering appearance and functionality. Begin to understand that a simple fabric shape can be used to make a 3D textiles project.			**Phone Case/Bean Bag Toy:** Make products attractive and strong. Make a prototype. Use a range of joining techniques.
Food 	**Fruit Smoothies:** Describe textures. Wash hands & clean surfaces. Say where some foods come from, (i.e. plant or animal). Describe differences between some food groups (i.e. sweet, vegetable etc.). Cut, peel and grate safely, with support.	**Vegetable Dips:** Explain hygiene and keep a hygienic kitchen. Describe properties of ingredients and importance of varied diet. Say where food comes from (animal, underground etc.). Describe how food is farmed, home-grown, caught. Draw the Eatwell Plate and explain there are groups of food. Describe "five a day". Cut, peel and grate with increasing confidence.	**Super Salads:** Carefully select ingredients. Use equipment safely. Make products look attractive. Think about how to grow plants to use in cooking. Describe how a healthy diet= variety/balance of food/drinks. Explain how food and drink are needed for active/healthy bodies. Prepare some dishes safely and hygienically. Use some of the following techniques: peeling, chopping, slicing, grating, mixing.	**Pizza:** Explain how to be safe/hygienic. Think about presenting a product in an interesting / attractive way. Describe the Eatwell Plate and how a healthy diet=variety / balance of food and drinks. Explain the importance of food and drink for active, healthy bodies. Prepare and cook some dishes safely and hygienically. Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	**Bread:** Explain how to be safe / hygienic and follow their own guidelines. Present product well - interesting, attractive, fit for purpose. Describe how recipes can be adapted to change appearance, taste, texture, aroma. Explain how there are different substances in food / drink needed for health. Prepare and cook dishes safely and hygienically including, where appropriate, use of heat source. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	**Seasonality Soup:** Understand that a recipe can be adapted by adding / substituting ingredients. Explain seasonality of foods. Name some types of food that are grown, reared or caught in the UK. Adapt recipes to change appearance, taste or texture. Describe some of the different substances in food and drink, and how they can affect health. Prepare and cook savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.

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Big Ideas to Assess