Our Mission: To drive personal and academic excellence; everyone, every day.

The Meadows Primary Academy

Design Technology

Core Values : Resilience, Respect, Team Work, Aspiration, Kindness, Curiosity
R-A-I-S-E

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Design	A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.
Nutrition	The nourishment or energy that is obtained from food consumed or the process of consuming the proper amount of nourishment and energy. An example of nutrition is the nutrients found in fruits and vegetables. An example of nutrition is eating a healthy diet.
Technology	Technology is science or knowledge put into practical use to solve problems or invent useful tools.
Data	Data is "known facts". It especially refers to numbers, but can also mean words, sounds, and images too. Originally, data is the plural of the Latin word datum which means "give".
Evaluate	To evaluate is the act or the result of evaluating a situation that requires careful consideration to determine the value, nature, character, or quality of something.
Functionality	The quality or state of being functional. A design that is admired both for its beauty and for its functionality: the set of functions or capabilities associated with something.
Innovation	The process of making (something) new or doing something in a new way. Innovation also has to include the concept of improvement; to innovate is not just to do something differently, but to do or make something better.

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The Meadows Primary Academy - Design and Technology progression through EYFS
EAD: Creating with Materials & Being Imaginative and Expressive

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
- 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
- Make use of props and materials when role-playing characters in narratives and stories

Focus	Designing	Making	Evaluating	Technical Skills	Food Technology	Vocabulary- To be used daily.
Nursery Skills	Develop own ideas & decide which materials to use to express them	• Use various construction materials, e.g., joining • pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces Use available resources to create props or creates imaginary ones to support play	Notice what other children & adults do, mirroring what is observed, adding variations & then doing it spontaneously	• Develop new skills & techniques Use tools for a purpose	• Talk about the differences between materials & changes they notice • Make healthy choices	Like/ dislike Use, cut, snip, press, fold, join, fix, glue, stick, bumpy, smooth, shiny, hard, soft, rough, fruit, vegetables, healthy, unhealthy, different
Nursery Knowledge	**Autumn 1** My Environment and Me	**Autumn 2** Special Times and Special Places	**Spring 1** Same and Different	**Spring 2** Life Cycles	**Summer 1** Where will we go Now?	**Summer 2** People in Our Community
	• Make snips in paper using a two-handed scissor grip. • Use glue to join pieces	• Use a range of tools rolling pin, cutters, extruders, scissors, hole punch, Sellotape dispenser independently. • Build a representation of own home using a mixture of materials.	Use a variety of different materials to create a variety of different transport such as a boat, plane, helicopter .	• Use a range of materials to join, glue, string, cotton, Sellotape • Make own designs from junk modelling materials • Match animals to the food they produce • Know that some food is grown from plants and trees – vegetable / fruit	• Explain what healthy and unhealthy means. •	• Use a range of tools rolling pin, cutters, extruders, scissors, hole punch, Sellotape dispenser independently and with accuracy Create animal habitats using a range of different materials and textures and explain their choices

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Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility. Playdough/ Malleable/Art/building/small world and outdoor provisions will provide a wealth of opportunity. Resources will be enhanced and developed as children develop their skill set.

Experiences	SMSC	British Values	The Meadows Values
Colouring competition – fine motor skill development. Chinese new year – link with different foods eaten during celebrations.	Moral - children are taught how to look after their environment during activities	Respect and tolerance is discussed when children notice what other people do and mirror it or chose to do differently	Resilience is taught when using scissors. Respect is taught by promoting caring for their environment.

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EAD: Creating with Materials & Being Imaginative and Expressive

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
- 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
- Make use of props and materials when role-playing characters in narratives and stories

Focus	Designing	Making	Evaluating	Technical Skills	Food Technology	Vocabulary- To be used daily.
Reception Skills	• Develop own ideas through experimentation with diverse materials to express & communicate their discoveries & understanding • Create collaboratively sharing ideas, resources & skills	• Use increasing knowledge & understanding of tools & materials to explore their interests & enquiries & develop their thinking • Create representations both imaginary & real-life ideas, events, people & objects	• Express & communicates working theories, feelings & understandings • Responds imaginatively to art works & objects • Return to & build on previous learning, refining ideas & developing their ability to represent them • Discuss problems & how they might be solved	• Use different techniques for joining materials • Use tools independently, with care & precision	• Look closely at similarities, differences, patterns & change • Know & talk about the different factors that support their overall health & well-being	Cutting, measure, folding, joining, gluing, tearing, decorate, printing, tools, strong, shape, materials, textiles, wheels, equipment, like, dislike, improve, better, cutting, plants, animals, farming, foods.

Reception Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	My Environment and Me	Special Times and Special Places	Same and Different	Life Cycles	Where will we go Now?	People in Our Community
	⇨ Brush own teeth and talk about the importance of good oral health. ⇨ Begin to talk about the effect of exercise and food on their health. Use colour and materials to express how they are feeling through own creations using a variety of textures.	Use construction materials to build structure of my home. Use fabric to create houses for a character from a story • Use a variety of construction materials to build an aerial view of TMPA	• Toast bread and analyse the effects of heat. Use a of range construction materials to build structure of TMPA and compare the different mediums.	⇨ Use eggs produced (make link to coming from chicks to prepare and bake a cupcake - explain the process • Use a variety of construction materials to build an aerial view of Stoke	⇨ From food to fork'. Understand where food comes from and experience growing their own vegetables, harvesting, preparing, and eating. ⇨ Use heat to melt chocolate and cook Brazilian bananas. Look at the effects of cooking and melting.	⇨ Use a range of materials to make a moving puppet. ⇨ Verbally evaluate their work and explain what is good and one thing that could make it better. ⇨ Construct a building from our community and label their model – place of work, school, hospital

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Food	Mechanisms	Structures
Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility. Playdough/ Malleable/Art/building/small world and outdoor provisions will provide a wealth of opportunity. Resources will be enhanced and developed as children develop their skill set.		

Experiences	SMSC	British Values	The Meadows Values
• Colouring competition – fine motor skill development. • Chinese new year – link with different foods eaten during celebrations. • Easter bonnet making – joining and cutting skills. Reading breakfast – experiencing different foods with family, use of cutlery.	• Cultural – children are exposed to a range of foods linked with celebrations. They are also taught about where food comes from. Social – children are taught about different buildings in their local area when building houses, shops and schools.	• Individual liberty is taught when children begin to express their feelings and understanding. Respect is taught when children are working collaboratively together.	• Team Work is taught when the children are working as part of a team. .

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KS1 Cycle A: Design and Technology skills progression	
KS1: POS • Use the basic principles of a healthy and varied diet to prepare dishes. • To understand where food comes from. • Design purposeful, functional, appealing products for themselves and other users based on design criteria. • Select from and use a range of tools and equipment to perform practical tasks [for example cutting, shaping, joining and finishing. • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. • Explore and evaluate a range of existing products. • Explore and use mechanisms [for example levers, sliders, wheels and axles], in their products. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes. • Select from tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. • Investigate and analyse a range of existing products. • Evaluate their ideas and products against their own design criteria.	**Design** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate initial ideas and simple design criteria through talking and using own experiences. • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.
Make • 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 marking out, cutting, joining and finishing. • Plan by suggesting what to do next. • Select from and use textiles according to their characteristics. • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Use simple finishing techniques suitable for the product they are creating.	**Evaluate** • Taste and evaluate a range of fruit and vegetables to determine the intended users' preference. • Explore a range of existing books and everyday products that use simple sliders and levers. • Evaluate ideas and finished products against design criteria, including intended user and purpose. • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. • Evaluate their ideas throughout and their final products against original design criteria.

• Select new and reclaimed materials and construction kits to build their structures. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.	

Technical Knowledge

- 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.
- 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.
- Understand that different mechanisms produce different types of movement.

KS1 Cycle A – End points	
Mechanisms- Wheels and Axels	Children know how to design a product with wheels and axles and can explain the user and purpose. For example: a car for a small teddy, an ice cream van etc Children know how to draw an annotated sketch of their wheels and axles product and can label it with materials and key parts (wheel, axle, chassis) Children know how to select from PVA glue, glue sticks and scissors to cut and join materials (card and paper). Children know how to name a variety of real-life items that use wheels and axles such as cars, vans, lorries, bicycles, Ferris wheels, electric fans etc and can explain is the axle is fixed or moving. They know the difference between fixed and moving axles
Food – Preparing fruit and vegetables (making soup)	• 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. • Children know how to design a healthy snack and can explain the user and purpose. For example: a vegetable soup. (leek and potato/tomato/vegetable [depending on children's preferences+]) • Children know how to draw an annotated sketch of their soup and can label it with ingredients. • Children know how to select from a variety of ingredients to create the soup, considering the taste, colour and general appeal of the soup. • Children know how to select from knifes, graters and peelers to prepare common vegetables (leeks, potatoes, carrots, sweet potatoes, onions, celery, cucumber) discussing why some preparation methods may not be suitable for some of the fruits/vegetables - e.g. you wouldn't grate an onion, you wouldn't peel a leek. • Children discuss different, existing vegetable soups and evaluate their appeal, potential purpose and user.

	• Children know how to evaluate their own soup considering the intended user, purpose and its overall appeal as well as considering its effectiveness of being a healthy dish. • Children have an understanding that food comes from different countries and can be grown.

Experiences	SMSC	British Values	The Meadows Values
Taste the difference food and vegetables	Social – we discuss the different uses of vehicles and how they support and impact the local and wider community.	Rule of law – during the animal enclosures unit we discuss the rules for keeping animals both at home and at zoos.	Team Work is taught when the children are working as part of a team. Respect and Kindness listening to others viewpoints. Respect– the environment around you Team Work: Working as a team during experiments

KS1 Cycle B: Design and Technology skills progression	
KS1: POS • Use the basic principles of a healthy and varied diet to prepare dishes. • To understand where food comes from. • Design purposeful, functional, appealing products for themselves and other users based on design criteria. • Select from and use a range of tools and equipment to perform practical tasks [for example cutting, shaping, joining and finishing]. • Select from and use a wide range of materials and components, including construction materials, ingredients, according to their characteristics. • Explore and evaluate a range of existing products. • Explore and use mechanisms [for example levers, sliders, wheels and axles], in their products. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes.	**Design** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate initial ideas and simple design criteria through talking and using own experiences. • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.

• Select from tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. • Investigate and analyse a range of existing products. • Evaluate their ideas and products against their own design criteria.	
Make • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Plan by suggesting what to do next. • Select from and use textiles according to their characteristics. • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Use simple finishing techniques suitable for the product they are creating. • Select new and reclaimed materials and construction kits to build their structures. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.	• **Evaluate** • Taste and evaluate a range of fruit and vegetables to determine the intended users' preference. • Evaluate ideas and finished products against design criteria, including intended user and purpose. • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. • Evaluate their ideas throughout and their final products against original design criteria
Technical Knowledge • 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. • Understand that different mechanisms produce different types of movement. • Know how to make freestanding structures stronger, stiffer and more stable.	

KS1 Cycle B – End points	
Free standing structures	• Children know how to design a structure and can explain the user and purpose. For example: an animal enclosure for people to visit. • Children know how to draw an annotated sketch of their free-standing structure and can label it with materials. • Children know how to select from PVA glue, glue sticks and scissors to cut and join materials (card and cardboard). • Children know how to name free-standing structures: Eiffel tower (European. More familiar example) and The Burj Khalifa in Dubai (tallest example) • Children know how to discuss the different types of animal enclosures – penguins have to have water to swim in and land, lions need high fences so they don't jump out, giraffes need trees to eat from. • Children state if their structure is suitable for the intended user and purpose. They can offer a way to improve their structure with some guidance.

	• Children know how to strengthen a structure using stronger materials, like card instead of paper or lolly pop sticks instead of cardboard
Food – Making a sandwich	• Children know how to design a healthy snack and can explain the user and purpose. For example: a cold sandwich • Children know how to draw an annotated sketch of their sandwich and can label it with ingredients. • Children know how to select from a variety of ingredients to create their sandwich, considering the taste, colour and general appeal of the ingredients. • Children know how to select from knifes, graters, peelers and juices to prepare common fruits and vegetables (tomatoes, cucumber, lettuce, onion, avocado) discussing why some preparation methods may not be suitable for some of the fruits/vegetables - e.g. you wouldn't grate a tomato as it just turns mushy. • Children discuss different, existing sandwiches and evaluate their appeal, potential purpose and user. Consider which fillings are often paired together and which fillings the children like. (e.g. ham and cheese/ cheese and tomato/ chicken, tomato and lettuce/ salmon and cucumber) • Children evaluate their own sandwich considering the intended user, purpose and its overall appeal as well as considering its effectiveness of being a healthy snack. • Children know that food comes from different countries and can be grown

Experiences	SMSC	British Values	The Meadows Values
Taste the difference ingredients that are used on a sandwich.	Social – we discuss the different uses of free standing structures and how they support and impact the local and wider community.	During our food topic we teach respect, tolerance and individual liberty when we talk about different food choices and diets.	Resilience – during the entire making process, we discuss keeping on trying and never giving up even if the task gets tricky. Aspiration – during the evaluation stages we discuss being honest with ourselves (self-reflection) and others to ensure we can improve ourselves and our work.

LKS2 Cycle A: Design and Technology skills progression	
KS2- POS	**Design**
• To understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	• Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.

• To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • Select from and use a wider range of materials and components, including construction materials, and ingredients, according to their functional properties and aesthetic qualities. • Investigate and analyse a range of existing products. • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. • To understand how key events and individuals in design and technology have helped shape the world • To understand and use Electrical systems in their products.	• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer aided design. • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. • Produce annotated sketches, prototypes, final product sketches and pattern pieces • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.
Make • Order the main stages of making. • Select from and use finishing techniques suitable for the product they are creating. • 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. • 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 and join materials and components • Select from and use materials and components, including construction materials according to their functional properties	**Evaluate** • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. • Know how to strengthen, stiffen and reinforce existing materials • Compare the final product to the original design specification. • Take into account others' views. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Investigate famous manufacturing and engineering companies relevant to the project. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.

• Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Apply their understanding of computing to program, monitor and control their products.	
Technical Knowledge • Know and use technical vocabulary relevant to the project. • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. •	• Know and use relevant technical and sensory vocabulary appropriately. •

LKS2 Cycle A – End points	
Food Technology – Brazilian Feijoada	• Children know how to research and design a healthy snack/dish that is innovative, functional and appealing • Children know how to generate, develop, model and communicate their ideas through discussion and annotated sketches - Children know how to select from and use a wider range of utensils to perform practical tasks accurately • Children know how to select from and use a wider range of ingredients, according to their functional properties and aesthetic qualities. • Children know how to investigate and analyse a range of existing food products • Children know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Children know how to understand and apply the principles of a healthy and varied diet • Children know how to cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet • Children become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] • Children understand the source, seasonality and characteristics of a broad range of ingredients
Electrical Systems	• Children know how to design an electrical circuit for a product. For example: a torch • Children know how to draw an annotated sketch of an electrical circuit and can label it with materials and components. • Children know how to select from batteries, switches, foil, paper clips, buzzers, bulbs to create their product. • Children know how to name products that use electrical circuits – lights, torches, children's toys. • Children know how to state if their electrical circuit and final product is suitable for the intended user and purpose. They can offer a way to improve their product. • Children know how to understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers

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Experiences	SMSC	British Values	The Meadows Values
Taste different seasoning and foods originated in Italy	Cultural – the children are taught about some differences regarding food in different cultures.	Individual liberty – children are encouraged to make their products different and unique.	Resilience – during the entire making process, we discuss keeping on trying and never giving up even if the task gets tricky. Aspiration – during the evaluation stages we discuss being honest with ourselves (self-reflection) and others to ensure we can improve ourselves and our work.

LKS2 Cycle B: Design and Technology skills progression

KS2- POS

- To understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
- To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.
- Select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities.
- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- To understand how key events and individuals in design and technology have helped shape the world
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- To understand and use mechanical systems in their products.
-

Design

- Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.
- Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.
- Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer aided design.
- Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
- Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.
- Produce annotated sketches, prototypes, final product sketches and pattern pieces
- Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches
- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.

Make

Evaluate

Core Values : Resilience, Respect, Team Work, Aspiration, Kindness, Curiosity
R-A-I-S-E

• Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut and join materials and components • Select from and use finishing techniques suitable for the product they are creating. • Select from and use materials and components, including construction materials and electrical components according to their functional properties. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.	• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. • Compare the final product to the original design specification. • Take into account others' views. • Investigate and analyse books and, where available, other products with lever and linkage mechanisms. • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Investigate famous manufacturing and engineering companies relevant to the project. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
Technical Knowledge • 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. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know how to use appropriate equipment and utensils to prepare and combine food. •	• Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project.

LKS2 Cycle B– End points	
Shell Structures	• Children know how to design a structure using a cube or cuboid shaped shell and can explain the user and purpose. For example: a gift box for a friend, a lunch box for them self. • Children know how to draw an annotated sketch of a shell structure and can label it with materials and strengthening solutions. Children can use a computer to design their net.

	• Children know how to make a prototype of a shell structure using paper to practise joining techniques and strengthening solutions (laminating, ribbing, corrugating) • Children know how to select from PVA glue, glue sticks and scissors to cut and join materials (card and cardboard). They can use card or paper straws to strengthen their structure. • Children know how to name a real shell structure – The Shard, the O2 building. • Children know if their structure is suitable for the intended user and purpose. They can offer a way to improve their structure.
Cooking and Nutrition (Healthy and Varied Diet) – Hot Sandwich	• Children know how to research and design a healthy snack/dish that is innovative, functional and appealing • Children know how to generate, develop, model and communicate their ideas through discussion and annotated sketches - Children know how to select from and use a wider range of utensils to perform practical tasks accurately • Children know how to select from and use a wider range of ingredients, according to their functional properties and aesthetic qualities. • Children know how to investigate and analyse a range of existing food products • Children know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Children know how to understand and apply the principles of a healthy and varied diet • Children know how to cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet • Children become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes • Children understand the source, seasonality and characteristics of a broad range of ingredients

Experiences	SMSC	British Values	The Meadows Values
• Taste seasoned food.	• Cultural – the children are taught about some differences regarding food in different cultures.	• Individual liberty – children are encouraged to make their products different and unique. • Respect and tolerance - the children are taught about some differences regarding food in different cultures	Resilience – during the entire making process, we discuss keeping on trying and never giving up even if the task gets tricky

UKS2 Year 5: Design and Technology skills progression

KS2- POS

- To understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
- To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.
- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- To understand how key events and individuals in design and technology have helped shape the world
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- To understand and use mechanical systems in their products.
- To understand and use electrical systems in their products.

Design

- Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.
- 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.
- Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.
- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.

Make

- Work within the constraints of time, resources and cost.
- 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.

Evaluate

- Continually evaluate and modify the working features of the product to match the initial design specification.
- Compare the final product to the original design specification.
- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.

• Make, decorate and present the food product appropriately for the intended user and purpose. • 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 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. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making.	• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Investigate famous manufacturing and engineering companies relevant to the project. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Research key events and individuals relevant to frame structures. • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Compare the final product to the original design specification.
Technical Knowledge • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project	• 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. • Understand how to strengthen, stiffen and reinforce 3-D frameworks. Know and use technical vocabulary relevant to the project.

UKS2 Year 5 – End points	
Framed Structures	• Children know how to design a structure using a cube, cuboid, triangular prism or hexagonal prism shaped frame and can explain the user and purpose. For example: a house for a homeless person, a tree house for a child, a shelter for people waiting for a bus. • Children know how to draw an annotated sketch of a frame structure and can label it with materials, dimensions and strengthening solutions. • Children know how to make a prototype of a frame structure using paper straws to practise joining techniques and triangulation. • Children know how to select from PVA glue, glue sticks, glue guns, scissors and saws to cut and join materials (wood, card and cardboard). • Children name real frame structures – Eiffel tower, Empire State building, Iron bridge • Children know if their structure is suitable for the intended user and purpose. They can offer a way to improve their structure. Children know how to strengthen a structure using triangulation and explain what this means

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Mechanical Systems (Pulleys and Gears)	Children know how to design a mechanical system using pulleys and gears and can explain the user and purpose. For example: a fairground ride for a child. Children know how to draw annotated sketches and exploded diagrams of pulleys and gears and can show it from different angles. Children know how to make a prototype of a pulley and a gear to show how they make different movements. Children know how to select from PVA glue, glue sticks, glue guns and scissors to cut and join materials (wood, card and cardboard). Children know how to name where gears and pulleys are used in real life – gears: non-digital clocks, vehicles, drills, manual can openers and bicycles. Pulleys: wells, elevators, construction vehicles. Children state if their mechanical system is suitable for the intended user and purpose. They can offer a way to improve their mechanical system. Children know how to use pulleys and gears and understand the differences in direction, speed and rotation
Food and Nutrition (Celebrating Culture and Seasonality): Greek – moussaka	• Know how to use utensils and equipment to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Children know that a healthy and varied diet is made up of fruits, vegetables, carbohydrates, meats/fish, dairy, fats and sugar. - Children know how to make a savoury dish – moussaka • Children know that different fruits and vegetables are best in terms of flavour or harvest in different seasons and can name some: Cherries—July, Strawberries— June, July, August and September, New potatoes—April, May, June and July, Turnips—January, February, October, November and December. • Children know how to create a design criterion, design and write a recipe for an appealing Moussaka dish aimed at a specific user and purpose. • Children know that climate conditions affect when food is produced in the UK so food may be grown elsewhere and sent to the UK.

Experiences	SMSC	British Values	The Meadows Values
Taste seasoned food and different famous food originated in Greece	• Cultural – children are taught about food in different cultures.	• individual liberty – children are encouraged to make their products different and unique. Respect and tolerance - the children are taught about some differences regarding food in different cultures.	• Resilience – during the entire making process, we discuss keeping on trying and never giving up even if the task gets tricky. • Aspiration – during the evaluation stages we discuss being honest with ourselves (self-reflection) and others to ensure we can improve ourselves and our work.

Core Values : Resilience, Respect, Team Work, Aspiration, Kindness, Curiosity
R-A-I-S-E

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UKS2 Year 6: Design and Technology skills progression

KS2- POS

- To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.
- Select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties
- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- To understand how key events and individuals in design and technology have helped shape the world
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- To understand and use mechanical systems in their products.
- To understand and use electrical systems in their products.
- Apply their understanding of computing to program, monitor and control their products.

Design

- Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.
- 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.
- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

Make

- Work within the constraints of time, resources and cost.
- 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 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.
- Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- Use finishing and decorative techniques suitable for the product they are designing and making.

Evaluate

- Continually evaluate and modify the working features of the product to match the initial design specification.
- Compare the final product to the original design specification.
- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.
- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.
- Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Investigate famous manufacturing and engineering companies relevant to the project..

	• Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Investigate famous inventors who developed ground-breaking electrical systems and components. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Compare the final product to the original design specification.
Technical Knowledge • Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.	

UKS2 Year 6 – End points	
Electrical Systems (More Complex Switches and Circuits)	• Children know how to design an electrical circuit for a product. For example: a night light • Children know how to draw an annotated sketch of an electrical circuit and can label it with materials and components. They should also consider time restraints and the resources required. • Children know how to select from batteries, switches, foil, paper clips, buzzers, bulbs to create their product. • Children know how to name products that use electrical circuits and respond to the environment– automatic nightlights, alarm systems, security lighting • Children know if their electrical circuit and final product is suitable for the intended user and purpose. They can offer a way to improve their product. • Children know how to use a crumble to control their electrical system. • Children understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.
Food – Fruit Taquito	• Children know how to research and design a healthy snack/dish that is innovative, functional and appealing • Children know how to generate, develop, model and communicate their ideas through discussion and annotated sketches • Children know how to select from and use a wider range of utensils to perform practical tasks accurately • Children know how to select from and use a wider range of ingredients, according to their functional properties and aesthetic qualities. - Children know how to investigate and analyse a range of existing food products • Children know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Children know how to understand and apply the principles of a healthy and varied diet • Children know how to cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet

	• Children become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] • Children understand the source, seasonality and characteristics of a broad range of ingredients

Experiences	SMSC	British Values	The Meadows Values
• Taste seasoned food and different types of bread.	• Moral – during the textiles unit children are taught about vegan fabrics.	• Individual liberty – children are encouraged to make their products different and unique. Respect and tolerance - the children are taught about some differences regarding food in different cultures.	• Resilience – during the entire making process, we discuss keeping on trying and never giving up even if the task gets tricky. • Aspiration – during the evaluation stages we discuss being honest with ourselves (self-reflection) and others to ensure we can improve ourselves and our work.