UKS2 Design Technology

Objectives:

Design

1. design purposeful, functional, appealing products for themselves and other users based on design criteria
2. generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

3. select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
4. select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

Evaluate

5. explore and evaluate a range of existing products
6. evaluate their ideas and products against design criteria

Technical knowledge

7. build structures, exploring how they can be made stronger, stiffer and more stable
8. explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking and Nutrition

9. understand and apply the principles of a healthy and varied diet
10. prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
11. understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Developing, planning and communicating ideas		Working with tools, equipment, materials and components to make quality products		Evaluating processes and products		Food and nutrition	
Year 5	**Year 6**	**Year 5**	**Year 6**	**Year 5**	**Year 6**	**Year 5**	**Year 6**
Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD. Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. With growing confidence apply a range of finishing techniques, including those from art and design Draw up a specification for their design- link with Mathematics and Science. Use results of investigations, information sources, including ICT when developing design ideas. With growing confidence select appropriate materials, tools and techniques. Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Accurately apply a range of finishing techniques, including those from art and design. Draw up a specification for their design- link with Mathematics and Science. Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas and products. Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.	Select appropriate materials, tools and techniques e.g. 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. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Understand that mechanical and electrical systems have an input, process and output. Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately With growing confidence cut and join with accuracy to ensure a good-quality finish to the product Weigh and measure accurately (time,	Confidently select appropriate tools, materials, components and techniques and use them. Use tools safely and accurately. Assemble components to make working models. Aim to make and to achieve a quality product. With confidence pin, sew and stitch materials together to create a product. Demonstrate when make modifications as they go along. Construct products using permanent joining techniques. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Know how to reinforce and strengthen a 3D framework. Understand that mechanical and electrical systems have an input, process and output. Use finishing techniques to strengthen and improve the	Start to evaluate a product against the original design specification and by carrying out tests. Evaluate their work both during and at the end of the assignment. Begin to evaluate it personally and seek evaluation from others. Evaluate the key designs of individuals in design and technology has helped shape the world.	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. Evaluate against their original criteria and suggest ways that their product could be improved. Evaluate the key designs of individuals in design and technology has helped shape the world.	Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.	Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

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		dry ingredients, liquids). Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.	appearance of their product using a range of equipment including ICT.				

How we achieve these

Year 5

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme:	Theme:	Create a Rube Goldberg mechanisms	Make a Roman Snack	Creating a river	Create an Anglo Saxon pouch
NC Reference:	NC Reference:	NC Reference: D1, M3, M4, E6, T7, T8	NC Reference: D1, M4, E5, E6, C9, C10, C11	NC Reference: D2, M3, M4, E5, E6, T7	NC Reference: D1, M3, M4, E6,
Skills:	Skills:	Skills: Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD. Draw up a specification for their design- link with Mathematics and Science. Use results of investigations, information sources, including ICT when developing design ideas. With growing confidence select appropriate materials, tools and techniques. Select appropriate materials, tools and techniques e.g. 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. Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately With growing confidence cut and join with accuracy to ensure a good-quality finish to the product Evaluate their work both during and at the end of the assignment. Begin to evaluate it personally and seek evaluation from others.	Skills: Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. measure accurately (time, dry ingredients, liquids). Evaluate the key designs of individuals in design and technology has helped shape the world. Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Start to understand how to use a range of techniques such as chopping, slicing, mixing and spreading. Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.	Skills: With growing confidence apply a range of finishing techniques, including those from art and design Draw up a specification for their design- link with Mathematics and Science. Use results of investigations, information sources, including ICT when developing design ideas. With growing confidence select appropriate materials, tools and techniques. Select appropriate materials, tools and techniques e.g. 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 Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately With growing confidence cut and join with accuracy to ensure a good-quality finish to the product Start to evaluate a product against the original design specification and by carrying out tests. Evaluate their work both during and at the end of the assignment.	Skills: Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. With growing confidence apply a range of finishing techniques, including those from art and Select appropriate materials, tools and techniques e.g. 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 Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately With growing confidence cut and join with accuracy to ensure a good-quality finish to the product Start to evaluate a product against the original design specification and by carrying out tests.

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Vocabulary:	Vocabulary:	Vocabulary: Machine Annotate Sequenced Complicated Evaluation Development	Vocabulary: Mixing Slicing Chopping Spreading Savoury Hygienically Bacteria Substance Fibre Nutrient	Vocabulary: Construct Cross-sectional Criteria CAD Materials Shaping Finishing Aesthetic	Vocabulary: Innovative Joining Textiles Fabrication Weave Product Functional
Year 6					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme: Greeks – Making tzatziki	Theme' Dinosaurs	Theme:	Theme: Electricity – Making board games	Theme:	Theme: Wider world – Trading – Making bread
NC Reference: D1, M4, E5, C10		NC Reference:	NC Reference: D2, M3, M4, T8, E5, E6	NC Reference:	NC Reference: D1, M4, E5, C10, C9
Skills: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.		Skills:	Skills: Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD. Draw up a specification for their design- link with Mathematics and Science Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail. appropriate tools, materials, components and techniques and use them. Use tools safely and accurately. Assemble components to make working models. Aim to make and to achieve a quality product. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Know how to reinforce and strengthen a 3D framework. Understand that mechanical and electrical systems have an input, process and output. Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Evaluate their work both during and at the end of the assignment.	Skills:	Skills: Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Aim to make and to achieve a quality product. Record their evaluations using drawings with labels. Evaluate against their original criteria and suggest ways that their product could be improved Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.
Vocabulary: Purpose, Manipulate, Dry Media, Wet Media, Digital Media. Warp, Bespoke Aesthetics, net, Harmony, Composition, Mood, Abstract, garnish quality assurance, Annotate, Develop, Refine and alter, Reflecting			Vocabulary: Component Bespoke Annotate Prototype Refine Innovative Specification assemble		Vocabulary: Savoury Proving Kneading Recipe Knocking back Glazing Rise Sampling yeast