Design & Technology Curriculum

Langford, Wilberforce, Fulham, Sulivan and Queen's Manor Primary Schools

Aims of the Design and Technology Curriculum

- To develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- To build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- To critique, evaluate and test their ideas and products and the work of others.
- To understand and apply the principles of nutrition and learn how to cook.

Before KS1:

In EYFS children will have explored different materials describing what they feel and look like. They will have also explored basic forces using resources such as wind-up cars and pulley toys. Children will have explored the basics of healthy eating and begun to understand the importance of healthy eating and oral hygiene. Children will have basic skills of how to assemble materials together using tools such as scissors, glue and tape.

	Autumn	Spring	Summer
N	**Structures** 2D shape to product	**Food** Preparing food	**Textiles** Designing
R	**Structures** 2D shape to product	**Food** Preparing food	**Textiles** Designing
Y1	**Food** Preparing fruit and vegetables	**Mechanisms** Sliders and levers	**Structures** Freestanding Structures
Y2	**Food** Preparing fruit and vegetables	**Mechanisms** Wheels and axles	**Textiles** Templates and joining techniques
Y3	**Textiles** 2D shape to product	**Mechanisms** Levers and linkages	**Food** Health and varied diet
Y4	**Structures** Shell structures	**Electrical Systems** Simple circuits and switches	**Food** Preparing and cooking
Y5	**Structures** Frame structure	**Food** Celebrating culture and seasonality	**Textiles** Combining different fabric shapes
Y6	**Electrical Systems** More complex circuits and switches	**Food** Celebrating culture and seasonality	**Mechanisms** Pulley or gears

Autumn Term – EYFS and KS1

	Design	Make	Evaluate
N	**Structures – Making a Card** • Evaluate existing products. • Plan how to join materials together. • Plan and design for purpose.	• Join different materials together with appropriate tools. • Create the planned design for the purpose.	• Evaluate the product against the purpose of the product. • Compare to existing products.
R	**Structures – Making a Card** • Evaluate existing products. • Plan how to join materials together. • Plan and design for purpose.	• Choose materials and join different materials together with appropriate tools. • Create the planned design for the purpose.	• Evaluate the product against the purpose of the product. • Compare to existing products.
Y1	**Food - Fruit Skewers** • Explore, evaluate, plan and design which ingredients to include in product. • Explore and plan appropriate tools to use in preparing product.	• Choose tools to use to safely prepare product. • Create planned product.	• Review and evaluate the taste and design of product against ingredients.
Y2	**Food - Fruit Smoothies** • Explore and evaluate existing products and combinations. • Explore, evaluate, plan and design which ingredients to include in product.	• Choose tools to use to safely prepare product. • Create planned product.	• Review and evaluate the taste and design of product against existing products.

Autumn Term – KS2

	Design	Make	Evaluate
Y3	**Textiles – Making a Bag** • Explore and evaluate existing products and materials. • Develop design criteria to ensure product is fit for purpose. • Consider the needs of the user. • Explore and evaluate how to join materials (simple stitch). • Plan and design a product for a purpose.	• Choose tools and materials to safely make more complex textile product. • Create planned textile product.	• Review and evaluate the design of product against design criteria and existing products and the needs of the user. • Identify strengths and areas for development.
Y4	**Structures - Gift Box** • Explore and evaluate existing products and materials. • Develop design criteria to ensure product is fit for purpose. • Consider the needs of the user. • Explore and evaluate how to create shell structure. • Plan and design a product for a purpose.	• Choose tools and materials to safely make more complex structure. • Create planned shell structure.	• Review and evaluate the design of product against design criteria and existing products and the needs of the user. • Identify strengths and areas for development
Y5	**Structures – Bird Box** • Carry out research on needs of the user. • Develop design criteria to ensure product is fit for purpose. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches of existing products. • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.	• Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product.	• Critically evaluate their structure against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
Y6	**Electrical Systems - Alarm** • Carry out research on needs of the user. • Develop design criteria to ensure product is fit for purpose. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.	• Competently select from and use appropriate tools to make a battery-powered system. • Use finishing and decorative techniques suitable for the product.	• Critically evaluate their structure against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

Spring Term – EYFS and KS1

	Design	Make	Evaluate
N	**Food – Making Cookies** • Evaluate existing products. • Explore ingredients. • Explore skills and tools needed to make product.	• Follow a simple recipe and use tools to make product with support.	• Evaluate the product against the purpose of the product. • Compare to existing products.
R	**Food – Making Cookies** • Evaluate existing products. • Explore ingredients. • Explore skills and tools needed to make product. • Design a product.	• Follow a simple recipe and use tools with support to make product. • Create the planned design.	• Evaluate the product against the purpose of the product. • Compare to existing products.
Y1	**Mechanisms – Making a Card** • Explore and evaluate existing products with levers and sliders. • Explore and plan appropriate tools to use in preparing product. • Consider the intended user of the product. • Plan and design product.	• Choose tools to use to safely make product. • Create the planned product.	• Review and evaluate the mechanisms and design of product against existing products.
Y2	**Mechanisms – Toy Truck** • Explore and evaluate existing products with wheels and axles. • Explore and plan appropriate tools to use in preparing product. • Consider the intended user of the product. • Plan and design product.	• Choose tools to use to safely prepare product. • Create planned product.	• Review and evaluate the taste and design of product against existing products.

Spring Term – KS2

	Design	Make	Evaluate
Y3	**Mechanisms - Storybook** • Explore and evaluate existing products with levers and sliders. • Develop design criteria to ensure product is fit for purpose - consider the needs of the user. • Explore and plan appropriate tools to use in preparing product. • Use annotated sketches and prototypes to develop, model and communicate ideas.	• Order the main stages of making the product and what lever they will use. • Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. • Select from and use finishing techniques suitable for the product.	• Evaluate the product against criteria and the user needs. • Compare with existing products. • Identify strengths and areas of development.
Y4	**Electrical Systems – Torch** • Explore and evaluate existing products. • Develop design criteria to ensure product is fit for purpose - consider the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas.	• Order the main stages of making the product. • Select from and use tools and equipment to make basic circuits. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.	• Evaluate the product against the design criteria and purpose of the product. • Analyse and evaluate product against existing products. • Identify strengths and areas of development.
Y5	**Food - Biscuits** • Explore and evaluate existing products, carry out research on needs of user. • Investigate ingredients needed and where ingredients have come from. • Develop design criteria to ensure product is fit for purpose. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.	• Order the main stages of making the product. • Competently select from and use appropriate tools and ingredients to accurately follow a recipe. • Use finishing and decorative techniques suitable for the product.	• Critically evaluate their product against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
Y6	**Food – Savoury Scones** • Explore and evaluate existing products, carry out research on needs of user. • Investigate ingredients needed and where ingredients have come from. • Develop design criteria to ensure product is fit for purpose. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.	• Order the main stages of making the product. • Competently select from and use appropriate tools and ingredients to accurately follow a recipe. • Use finishing and decorative techniques suitable for the product.	• Critically evaluate their product against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

Summer Term – EYFS and KS1

	Design	Make	Evaluate
N	**Textiles – Patterns** • Evaluate existing products. • Explore materials. • Explore skills and tools needed to make product. **Molly Mahon**	• Use tools to make product with support.	• Evaluate the product against the purpose of the product. • Compare to existing products.
R	**Textiles - Patterns** • Evaluate existing products. • Explore materials. • Explore skills and tools needed to make product. • Design a product. **William Morris**	• Use tools to make product with support. • Create the planned design.	• Evaluate the product against the purpose of the product. • Compare to existing products.
Y1	**Structures - Model House** • Explore and evaluate existing products. • Explore and plan appropriate tools to use in preparing product. • Consider the intended user of the product. • Plan and design product with clear steps. **Zaha Hadid**	• Select and use tools, skills and techniques, explaining their choices. • Select new and reclaimed materials and construction kits to build their houses. • Use simple finishing techniques suitable for the structure they are creating	• Review and evaluate the structure and design of product against existing products.
Y2	**Textiles - Puppets** • Explore and evaluate existing products. • Explore and plan appropriate tools to use in joining materials. • Consider the intended user of the product. • Plan and design product with clear steps. **Jim Henson**	• Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics.	• Review and evaluate the structure and design of product against existing products.

Summer Term – KS2

	Design	Make	Evaluate
Y3	**Food - Sandwiches** • Explore and evaluate ingredients. • Develop criteria to ensure product is fit for purpose - consider the needs of the user and hygiene steps needed. • Explore and plan appropriate tools to use in preparing product. • Use annotated sketches to develop, model and communicate ideas. **Jose Andres**	• Order the main stages of making the product and what ingredients will be used. • Select from and use appropriate tools with some accuracy to cut, spread and assemble product. • Ensure hygiene steps are followed throughout assembly and know the reasons for them.	• Evaluate the product against criteria and the user needs. • Compare with existing products. • Identify strengths and areas of development.
Y4	**Food - Toasties** • Explore and evaluate ingredients. • Develop criteria to ensure product is fit for purpose - consider the needs of the user and hygiene steps needed. • Explore and plan appropriate tools to use in preparing product. • Use annotated sketches to develop, model and communicate ideas. **Christine Ha**	• Order the main stages of making the product and what ingredients will be used. • Select from and use appropriate tools with some accuracy to cut, spread and cook product. • Ensure hygiene steps are followed throughout assembly and know the reasons for them.	• Evaluate the product against criteria and the user needs. • Compare with existing products. • Identify strengths and areas of development.
Y5	**Textiles - Purse** • Explore and evaluate existing products, carry out research on needs of user. • Explore and evaluate different techniques to decorate fabrics. • Develop design criteria to ensure product is fit for purpose. • Generate, develop, model and communicate realistic ideas through discussion mock-ups and prototypes. **Vivienne Westwood**	• Order the main stages of making the product. • Competently select from and use appropriate tools and to follow design criteria. • Use finishing and decorative techniques suitable for the product.	• Critically evaluate their product against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
Y6	**Mechanisms – Toy Car** • Explore and evaluate existing products. • Generate innovative ideas by carrying out research on needs of user. • Develop design criteria to ensure product is fit for purpose. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. • Create list of tools, equipment and materials. **Karl Benz**	• Order the main stages of making the product, and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.	• Critically evaluate their product against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

Beyond KS2:

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion].

KS3 National Curriculum Programme of Study