

Captain Cook Primary School



Design & Technology (DT) Curriculum

Non-Negotiable Curriculum and Assessment Document



Design and Technology Non-Negotiables

Year 1

Developing, Planning and Communicating Ideas		Evaluating Processes and Products		Knowledge and Understanding of Materials and Components	
<ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and other users based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology 		<ul style="list-style-type: none"> Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria 		<ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable 	
Producing Quality Products					
Food	Materials (including textiles)	Electrical and Electronics	Construction	Mechanics	
<ul style="list-style-type: none"> Understand the need for basic food hygiene Be aware of healthy eating Know properties of food – taste, texture and appearance Prepare and combine ingredients into specific projects Use basic tools safely Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from. 	<ul style="list-style-type: none"> Select tools, techniques and materials to make their product from those suggested by the teacher Name the tools they are using Explore materials through touch, feel, etc. Assemble, join and combine materials and parts e.g. glue, tape, fasteners Use scissors to cut along a straight or curved line accurately With some support, join fabrics using simple running stitch. 		<ul style="list-style-type: none"> Select tools, techniques and materials to make their product from those suggested by the teacher Name the tools they are using Explore materials through touch, feel, etc. Assemble, join and combine materials and parts e.g. glue, tape, fasteners Use scissors to cut along a straight or curved line accurately Incorporate all of the above to make models that reflect their ideas 		

DESIGN AND TECHNOLOGY ASSESSMENT CRITERIA



Key	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
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Year 1

- I can make evaluative comments about existing products.
- I can use pictures and words to show what I want to do.
- I can name, choose and use tools appropriately.
- I can assemble and join materials and parts to make a model that reflects my ideas.
- I can use scissors to cut along a straight or curved line accurately.
- I can, with some support, join fabrics using simple running stitch.
- I can evaluate my own product against design criteria.



Design and Technology Non-Negotiables

Year 2

Developing, Planning and Communicating Ideas		Evaluating Processes and Products	Knowledge and Understanding of Materials and Components		
<ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and other users based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. 		<ul style="list-style-type: none"> Identify what they could have done differently or how they could improve their work in future 	<ul style="list-style-type: none"> Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 		
Producing Quality Products					
Food	Materials (including textiles)	Electrical and Electronics	Construction	Mechanics	
<ul style="list-style-type: none"> Understand the need for basic food hygiene Be aware of healthy eating Know properties of food – taste, texture and appearance Prepare and combine ingredients into specific projects Use basic tools safely Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from. 		<ul style="list-style-type: none"> Measure, mark out, cut and shape a range of materials Select and use a variety of methods and/or tools to join and combine materials in different ways Incorporate a simple electrical circuit into a model Use simple finishing techniques to improve the appearance of their product 		<ul style="list-style-type: none"> Select and use tools to join and combine materials in different ways Attach a wheel to a chassis using a variety of methods to make a vehicle with an axle Incorporate simple flaps or folds into a product Use simple finishing techniques to improve the appearance of their product, using a range of equipment 	

DESIGN AND TECHNOLOGY ASSESSMENT CRITERIA



Key	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
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Year 2

- I can identify existing products which use mechanisms, and explain how they work.
- I can use pictures, words and models to describe my design.
- I can measure, cut, shape and join a range of materials.
- I can incorporate a simple electrical circuit into a model.
- I can attach a wheel to a chassis to make a vehicle with an axle.
- I can incorporate simple flap or folds into a product.
- I can use simple finishing techniques to improve my product's appearance.
- I can identify how I could improve my work in the future.



Design and Technology Non-Negotiables

Year 3

Developing, Planning and Communicating Ideas	Evaluating Processes and Products	Knowledge and Understanding of Materials and Components
<ul style="list-style-type: none"> 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, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. 	<ul style="list-style-type: none"> 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 Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

Producing Quality Products

Food	Materials (including textiles)	Electrical and Electronics	Construction	Mechanics
<ul style="list-style-type: none"> Be aware of personal hygiene when washing food Combine components according to taste, appearance or texture to produce a healthy balanced plate Prepare food in a variety of ways – cutting, grating, etc. 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 Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 	<ul style="list-style-type: none"> Explore the qualities of materials and how to use materials and processes Select appropriate tools and techniques for making their product Join materials in an appropriate and increasingly accurate way using different fastenings Use decorative techniques to enhance the product's appearance 		<ul style="list-style-type: none"> Explore the qualities of materials and how to use materials and processes Select appropriate tools and techniques for making their product Join materials in an appropriate and increasingly accurate way Accurately cut, measure and fold to make a structure which is appropriate for its purpose Create and decorate a stable structure showing an understanding of how to use materials and processes 	

DESIGN AND TECHNOLOGY ASSESSMENT CRITERIA



Key	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
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Year 3

- I can identify qualities of a range of materials, and suggest possible uses.
- I can design a functional, appealing product that is fit for a stated purpose.
- I can use words, labelled sketches and models to communicate realistic design ideas.
- I can select appropriate tools and techniques for making my product.
- I can measure, cut, shape and join materials with some accuracy using a range of techniques.
- I understand how to strengthen, stiffen and reinforce to create a stable structure.
- I can use decorative techniques to enhance my product's appearance.
- I can use a range of simple finishing techniques to improve my product's appearance.
- I can evaluate my own and others' finished products against design criteria and suggest improvements.



Design and Technology Non-Negotiables

Year 4

Developing, Planning and Communicating Ideas	Evaluating Processes and Products	Knowledge and Understanding of Materials and Components
<ul style="list-style-type: none"> • 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, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. 	<ul style="list-style-type: none"> • 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 • Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products.

Producing Quality Products

Food	Materials (including textiles)	Electrical and Electronics	Construction	Mechanics
<ul style="list-style-type: none"> • Follow safe procedures for food safety and hygiene independently • Be aware of personal hygiene when washing food • Combine components according to taste, appearance or texture to produce a healthy balanced plate • Prepare food in a variety of ways – cutting, grating, etc. • 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 • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 		<ul style="list-style-type: none"> • Construct simple electrical circuits • Use construction materials (e.g. wood, card and appropriate adhesives) • Incorporate their own circuit or bulb into a model • Suggest alternative ways of making their product if the first attempt fails (individually or in teams) • Use a range of finishing techniques to enhance the appearance of their product 		<ul style="list-style-type: none"> • Join and combine materials using simple hand tools to allow movement • Create a range of simple mechanisms to achieve movement e.g. pneumatics, hinges and slides • Construct a model incorporating a mechanism to achieve movement • Suggest alternative ways of making their product if the first attempt fails (individually or in teams)

DESIGN AND TECHNOLOGY ASSESSMENT CRITERIA



Key	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
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Year 4

- *I can generate ideas by researching and using information.*
- *I can use words, labelled sketches and models to communicate design ideas and step-by-step plans.*
- *I can construct simple electrical circuits and incorporate into a model.*
- *I can join and combine materials to create mechanisms achieving movement.*
- *I can construct a model incorporating a mechanism to achieve movement.*
- *I can cut, shape and join materials with increasing accuracy using a range of techniques.*
- *I can evaluate my finished product, suggesting alternative techniques which could achieve improvements.*



Design and Technology Non-Negotiables

Year 5

Developing, Planning and Communicating Ideas	Evaluating Processes and Products	Knowledge and Understanding of Materials and Components
<ul style="list-style-type: none"> • 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, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<ul style="list-style-type: none"> • 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 • Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

Producing Quality Products

Food	Materials (including textiles)	Electrical and Electronics	Construction	Mechanics
<ul style="list-style-type: none"> • Follow safe procedures for food safety and hygiene, building on skills acquired in cutting, chopping, peeling, etc. • Follow a simple recipe • 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 • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 	<ul style="list-style-type: none"> • Measure, mark out, cut and shape a range of materials. • Assemble, join and combine components and materials accurately • Sew a button onto material threading a needle independently • Use pattern pieces and seam allowance to create a 3D product • Use a range of decorative stitching to enhance the product 		<ul style="list-style-type: none"> • Use construction tools such as hand drill, hammer, hacksaw and bench hook safely and accurately • Assemble materials in temporary and permanent ways • Combine materials in a variety of ways to provide reinforcement • Create and decorate a stable and reinforced structure using a variety of materials showing an understanding of fitness for purpose 	

DESIGN AND TECHNOLOGY ASSESSMENT CRITERIA



Key	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
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Year 5

- I can investigate, analyse and evaluate a range of existing products.
- I can work from my own detailed plans when constructing my product.
- I can measure, cut and shape a range of materials with increasing accuracy.
- I can assemble, join and combine components accurately.
- I can sew a button onto material, threading a needle independently.
- I can use pattern pieces and seam allowance to create a 3D product which includes decorative stitching.
- I can use a range of construction tools (eg hand-drill, hammer, hacksaw, bench-hook) safely and accurately.
- I can evaluate finished products, suggesting alternative techniques which could achieve improvements, showing an awareness of fitness for purpose.



Design and Technology Non-Negotiables

Year 6

Developing, Planning and Communicating Ideas	Evaluating Processes and Products	Knowledge and Understanding of Materials and Components
<ul style="list-style-type: none"> • 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, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<ul style="list-style-type: none"> • 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 • Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products.

Producing Quality Products

Food	Materials (including textiles)	Electrical and Electronics	Construction	Mechanics
<ul style="list-style-type: none"> • Follow safe procedures for food safety and hygiene, building on skills acquired in cutting, chopping, peeling, etc. • Follow a simple recipe • 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 • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 		<ul style="list-style-type: none"> • Measure, mark out, cut and shape a range of construction materials selected according to fitness for purpose • Construct circuits incorporating a battery or power supply and a range of switches to make electrical devices work (e.g. buzzers/motors) and include components to make bulbs brighter or dimmer • Incorporate such circuits into a model • Use finishing techniques to strengthen and improve the appearance of their product, using a range of equipment (including ICT eg drawing software) 		<ul style="list-style-type: none"> • Investigate a range of products which incorporate control systems in everyday life • Create and use mechanisms which may include a pulley system, drive belt, cam, gears and/or levers • Construct a model incorporating one of the above control mechanisms • Use finishing techniques to strengthen and improve the appearance of their product, using a range of equipment (including ICT eg drawing software)

DESIGN AND TECHNOLOGY ASSESSMENT CRITERIA



Key	Exploring Existing Products	Developing Ideas	Making New Products	Evaluating
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Year 6

- I can identify a range of products which incorporate mechanical systems and explain how these work.
- I can use my understanding of the characteristics of familiar products when developing and communicating my own ideas.
- I can work from my own detailed plans when constructing my product, modifying them as appropriate.
- I can measure, cut and shape a range of materials selected according to fitness for purpose.
- I can construct circuits incorporating a power supply and a range of switches to make electrical devices work (eg buzzer/motor).
- I can incorporate these circuits into a model.
- I can create and use range of mechanisms (eg pulley systems, drive belt, cam, levers).
- I can construct a model incorporating at least one control mechanism.
- I can evaluate my work as it develops, and modify my approach in the light of progress.