

# **Adelaide Primary School Knowledge and Vocabulary Progression Intent Design Technology**

The intent of the Design Technology curriculum

To ensure that all pupils:

- use creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
- acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art.
- learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens.
- evaluate past and present design and technology in order to develop a critical understanding of its impact on daily life and the wider world.
- acquire the skills and knowledge to make a contribution to the creativity, culture, wealth and well-being of the nation as design technologists.

What are the key features of 'knowledge-rich' curriculum for Design Technology?

□ At key stage 1 and 2, the sticky knowledge takes full account of the national curriculum's main characteristics of:

Designing	Making	Evaluating	Using technical knowledge

This document outlines the knowledge, vocabulary and skills within our curriculum for History and includes both 'now knowledge' and 'sticky knowledge'. There is a difference between knowledge which will be retained close to the point of teaching and develop a broad, general understanding (now knowledge) and that which will be retained in the long-term memory (sticky knowledge).

## A.C.E. Design Technology Aims

At Adelaide Primary School, we aim for our design and technology curriculum to be inspiring, rigorous and practical. Our teachers aim to support children in using their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts. In addition to this, we evaluate past and present design and technology in order to develop a critical understanding of design and technology's impact on daily life and the wider world. We firmly believe that high-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.



□ Food technology

	A.C.E. Long Term Plan for Design Technology							
	Structures		Me	chanical Systems	Food			Textiles
FS1	Can you make a b Can you design and make	ous? a plant pot?			How can we decorate o	ur biscuit?		
FS2	Can you make a scar Can you design and make	ecrow? e a bridge?			What can we ba	ke?		
¥1	Can you make a bird house? X6 sessions - Autumn Term				Can you make a nest for a chick? Deep Learning Day - Spring Term		Can you design the Queen's knickers? X6 sessions - Spring Term	
Y2			<b>Can yo</b> X6 se	u make a safari jeep? essions - Autumn Term	Can you make a healthy astronaut? X1 sessions & DLD - Spri	lunch for an		
	Structures	Mechanic	al Systems	Electrical Systems	Computer Control	Fo	od	Textiles
Υ3	Can we design a temple for Athena? X6 sessions - Spring Term					Can we nutritious super X6 sessions - A	design a meal for a hero? Autumn Term	
¥4				Can you make the connection? – torch X6 sessions - Spring Term				Why did people make do and mend? X6 sessions - Summer term
Υ5		How can w moving rai animal fo (Pneur X6 sessions -	we make a nforest toy or Year 1? matics) Spring Term					Can you design and make a bag to trade? X6 - Autumn Term
Y6					Can you be a technological designer? Deep Learning Day	Can we crea for a Viki X1 session & I Da	te a feast fit ing King? Deep Learning ay	

	EYFS Design Technology			
		30-50m	40-60m	
ELG: Children safely use and explore a variety of materials, tools and techniques. Experiment with design and function. Technology has been removed from	Joining	FS1 ACE Question Can you make a bus? FS1 ACE Question Can you design a plant pot? • Know how to use different types of glue (Pritt, PVA) to join a range of materials with large flat surfaces. glue, glue stick, dry, stick	<ul> <li>FS2 ACE Question         <ul> <li>Can you make a scarecrow?</li> <li>FS2 ACE Question</li></ul></li></ul>	<ul> <li>Know ho component tags, splitie, fold, fas</li> </ul>
<ul> <li>New ELG: Creating with materials</li> <li>Draw and paint using a range of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li> <li>Share their creations, explaining the process they have used</li> <li>New ELG: Fine Motor Skills</li> <li>Use a range of small tools</li> </ul>	Cutting	FS1 ACE Question Can you make a bus? FS1 ACE Question Can you design a plant pot? Know how shape materials by tearing Know how to hold the scissors correctly. Know how to use scissors to snip Ongoing through continuous provision Know how to use scissors to cut straight lines	<ul> <li>FS2 ACE Question Can you make a scarecrow? FS2 ACE Question Can you design and make a bridge?</li> <li>Know how to use scissors correctly and safely</li> <li>Know how to transport scissors safely</li> <li>Know how to cut a variety of types of paper / card</li> <li>Ongoing through continuous provision</li> <li>Know how to use scissors to cut zigzag lines</li> <li>Know how to use scissors to cut wavy lines</li> <li>Know how to use scissors to cut curved shapes</li> </ul>	<ul> <li>Know ho card, stri</li> <li>Know ho specific particular</li> </ul>
including scissors, paint brushes and cutlery;	Construction and Design	<ul> <li>FS1 ACE Question Can you make a bus? FS1 ACE Question Can you design a plant pot?</li> <li>Know that materials can be joined together to create a model</li> <li>Know how to make choices from given materials</li> <li>Ongoing through continuous provision</li> <li>Using a range of construction materials:</li> <li>Know how to stack blocks vertically.</li> <li>Know how to stack blocks horizontally</li> <li>Know how to make enclosures and create spaces.</li> <li>Know how to join construction pieces together.</li> <li>Know how to copy / follow a visual instruction to construct.</li> </ul>	<ul> <li>FS2 ACE Question Can you make a scarecrow? FS2 ACE Question Can you design and make a bridge?</li> <li>Know how to manipulate materials to achieve a planned effect</li> <li>Know how to construct with a purpose in mind.</li> <li>Know how to talk about what they are making.</li> <li>Ongoing through continuous provision</li> <li>Know how to use a range of construction toys of different sizes and materials that fix together in a variety of ways, e.g. by twisting, pushing, slotting or magnetism</li> </ul>	<ul> <li>Know ho</li> </ul>
	Food Technology	build, balance, model FS1 ACE Question How shall we decorate our biscuit? Know the names of the ingredients they use Know how to follow verbal instructions to help make a food product Know how to make choices from given ingredients <i>icing, sprinkles, biscuit, decorations, spoon, bowl,</i> <i>mix, stir, icing sugar, water</i>	twisting, pushing, slotting, construct FS2 ACE Question What can we bake? Begin to follow simple pictorial instructions to help make a food product Begin to make choices from given ingredients based on design criteria muffin, ingredients, choose, flour, sugar, milk, vanilla extract, baking powder, yoghurt, eggs, butter, blueberries, cherries, raising howl snoon muffin trav. mix. stir	plan, design, d Know how to food produc Know how to criteria see 40-60m

#### ELG/Exceeding

#### FS2 ACE Question Can you make a scarecrow? FS2 ACE Question

#### Can you design and make a bridge?

bow to use a wider variety of joining materials to fit ents together (as 40-60 plus string, stapler, treasury lit pins)

sten, attach, string

#### FS2 ACE Question Can you make a scarecrow? FS2 ACE Question

Can you design and make a bridge? ow to use scissors to cut a variety of materials (paper, ring, ribbon, fabric)

#### Ongoing through continuous provision

by to use scissors to cut more complex shapes by to use textured scissors and match them for a purpose (e.g. wavy effect to the sea etc.)

per, card, string, ribbon, fabric, stiff, thick, thin, hard,

#### FS2 ACE Question Can you make a scarecrow? FS2 ACE Question

#### Can you design and make a bridge?

ow to safely use and explore a variety of materials ow to safely use and explore a variety of tools and ues

ow to safely experiment with design and function

- ow to plan what they are going to make.
- ow to draw their plan.
- ow to talk about how they made their product.
- ow to adapt their designs.
- ow to talk about the purpose of their product.

change

### FS2 ACE Question

#### What can we bake?

follow simple pictorial instructions to help make a

make choices from given ingredients based on design



## Focused Practical Task





		Design Technology: Key Stage 1 'now knowledge' and 's	ticky knowledge'
	National Curriculum	Year 1 Can you make a sturdy house for an animal? (Structures) Can you design the Queen's knickers? (Textiles)	Can you make a safa Can you design and make a he
Designing	Design - purposeful, functional, appealing products for themselves and other users based on design criteria Design - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT	<ul> <li><u>ACE Question: Can you make a sturdy house?</u></li> <li><u>ACE Question: Can you design the Queen's knickers?</u></li> <li>Know how to use own ideas to design a product based on given criteria</li> <li>Know how to draw and label a simple plan of their intended product before making it</li> <li>Know how to explain to someone else how they intend to make their product</li> </ul>	<ul> <li><u>ACE Question:</u></li> <li>Know how to use own using templates and m</li> <li>Know how to draw a p components to be use</li> <li>Know how to explain w components in their d</li> <li><u>ACE Question: Can you n</u></li> <li>Know how to use own using IT (painting app download the photos)</li> <li>Know how to draw a p components to be use</li> <li>Know how to explain w components to be use</li> </ul>
Making	select from and use a range of tools and equipment to perform practical tasks [e.g. 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	<ul> <li>Design, plan, product, explain</li> <li>ACE Question: Can you make a sturdy house?</li> <li>Know how to choose appropriate resources and tools from a given selection (Duplo, Polydron, junk modelling materials, card, paper, scissors)</li> <li>Know how to join materials (masking tape, Sellotape, glue sticks, PVA, split pins)</li> </ul>	<ul> <li>Design criteria, materials, template, materials, template, materials, template, materials, template, materials</li> <li>Know how to choose tools and (card, square dowel, round down scissors, hacksaw, jig, ruler)</li> <li>Know how to join materials and tape, Sellotape, glue sticks, PV.</li> <li>Know how to measure materials</li> </ul>
Evaluating	explore and evaluate a range of existing products evaluate their ideas and products against design criteria	<ul> <li><u>ACE Question: Can you make a sturdy house?</u> <u>ACE Question: Can you design the Queen's knickers?</u></li> <li>Know how to explain what works well in existing products (houses / knickers)</li> <li>Know how to explain what works well in the model they have made</li> <li>Know how to explain what they would do differently next time</li> </ul>	<ul> <li>ACE Question: ACE Question:</li> <li>ACE Question: Can you n</li> <li>Know how to explain what wo construction kit vehicles, tastin</li> <li>Know how to describe how an</li> <li>Know how to explain what wo made</li> <li>Know how to suggest one imp and give a reason why</li> </ul>



#### Year 2

fari jeep? (Mechanical movements) ealthy lunch for an astronaut? (healthy pizza)

n: Can you make a safari jeep?

n ideas to design a product based on given criteria mock-ups

plan of the product and label the materials and sed

why they have chosen to use specific materials and design

#### make a healthy lunch for an astronaut?

n ideas to design a product based on given criteria p on iPads, will need linking to Google Drive so can os)

plan of the product and label the materials and sed

why they have chosen to use specific materials and design

mock-up

n: Can you make a safari jeep?

nd materials and explain why they have chosen them lowel, card wheels, wooden wheels, axel holders,

and components in different ways (<u>glue gun</u>, masking PVA, split pins, <u>paper clip, stapler</u>) rials to use in a model or structure

#### es, grams

n: Can you make a safari jeep? make a healthy lunch for an astronaut? yorks well and not so well in existing products (toy / ting different types of bread and salad vegetables) an existing product works (toy vehicles) yorks well and not so well in the model they have

provement they could make to their finished product

		Evaluate, improve	Improvement, reason, successful
Technical Knowledge	build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	ACE Question: Can you make a sturdy house? • Know how to make a sturdy product (consider shape, material, joining method) <u>ACE Question: Can you design the Queen's knickers?</u> • Know how to join two pieces of material together using a running stitch • Know how to use a template • Know how to use a template • Strang stable stiff sturdy running stitch media thread back tack template and of the	ACE Question     Know how to use mecha
Food Technology	use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from	needle), knot ACE Question: Can you make a nest for a chick? • know how to wash hands before preparing food and maintain cleanliness throughout the process • know how to follow a simple recipe which uses pictures and non-standard measures • Write seen clean mix site math seen	<ul> <li><u>ACE Question: Can you</u></li> <li>know how to prepare surface</li> <li>know how to cut food safely</li> <li>Know how to weigh ingredie</li> <li>Know how to describe the ir sweet, savoury, crunchy, juic</li> <li>know the original sources of a chicken, chips from potato tomatoes, cheese from milk,</li> </ul>
		Water, soap, clean, mix, stir. melt, scoop	Wipe, hygienic, cut, chop, knife, blac hygiene, texture, taste

on: Can you make a safari jeep? anisms in their products (wheels and axles)



make a healthy lunch for an astronaut?

ces and keep them clean when preparing food <mark>v with a knife</mark>

ents from a recipe (weigh the cheese)

ngredients used when making a food product (e.g.

cy) <mark>f some common foods</mark> (e.g. milk from a cow, egg from pes which come from the ground, ketchup from /cow, beef from a cow).



de, safely, ingredients, Weigh, measure, recipe,

Investigate (including research)

## Focused Practical Task

Design

Make

	Design Technology: Key Stage 2 'now knowledge' and <mark>'sticky knowledge'</mark>							
	National Curriculum	Year 3 Can we design a temple for Athena? (Construction) Can we design a nutritious meal for a superhero? (veggie pasta bake)	Year 4 Can you make the connection? (Electrical systems) Why did people make do and mend? (Textiles)	Year 5 How can we make a moving toy (rainforest animal) for Year 1? (Pneumatics) Can you make a bag to trade? (Textiles)	Year 6 Can you be a technological designer? (Controlled mechanics) Can we create a feast fit for a Viking King? (Food)			
Designing	<ul> <li>use research &amp; develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design</li> </ul>	ACE Question Can we design a temple for Athena? • Know how to use research to contribute to the development of shared design criteria • Know how to use an annotated sketch to design an appealing product which fulfils the design criteria • Know how to label on the design how the materials and components will be attached • Know how to choose materials and components for both their suitability and appeal • Know how to use a simple IT program within the design ( <i>e.g. paintbox app on iPads, will need to connect iPads to google photos to screen shot designs and put on pc</i> ) • Know how to use research to contribute to the development of shared design criteria • Know how to use an annotated sketch to design an appealing product which fulfils the design criteria	ACE Question Can you make the connection? Why did people make do and mend? • Know how to conduct research to contribute to the development of shared design criteria • Know how to use annotated sketches to design at least two possibilities for an appealing product which fulfils the design criteria • Know how to label on the design how the materials and components will be attached and include the intended measurements • Know how to use prototypes to communicate their ideas • Know how to persevere and adapt work when original ideas are unsuccessful and annotate the original design with changes made throughout the making process	ACE Question How can we make a moving toy for Year 1? Can you make a bag to trade? Know how to conduct research using different sources to develop own design criteria and explain how it will appeal to a specific user Know how to use cross-sectional diagrams to design at least two possibilities for an appealing product which fulfils the design criteria Know how to label on the design how the materials and components will be attached and include accurate measurements Know how to produce a detailed, step-by- step plan of the chosen design Know how to persevere and adapt work when original ideas are unsuccessful and annotate the step by step plan with changes made throughout the making process ACE Question Can you make a bag to trade? Objectives above plus: Know how to use a more complex IT program within the design process (e.g. powerpoint/word/publisher and the draw shape feature and text boxes to label)	<ul> <li>ACE Question Can you be a technological designer?</li> <li>Know how to conduct market research to develop own design criteria which takes into account culture and society.</li> <li>Know how to use exploded diagrams to design at least two possibilities for an appealing product which fulfils the design criteria</li> <li>Know how to produce a detailed, step-by- step plan of the chosen design</li> <li>Know how to label on the design how the materials and components will be attached and include accurate measurements</li> <li>Know how to persevere and adapt work when original ideas are unsuccessful and annotate the step by step plan with changes made throughout the making process</li> <li>ACE Question Can we create a feast fit for a Viking King?</li> <li>Know how to conduct research to develop own design criteria which takes into account culture and society (e.g. No spaghetti Bolognese in a Viking feast, cost implications, dietary requirements)</li> <li>Know how to use exploded diagrams to design at least two possibilities for an appealing product which fulfils the design criteria</li> <li>Know how to produce a detailed, step-by- step plan of the chosen design</li> <li>Market research, culture, society, exploded diagram</li> </ul>			
Making	<ul> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting,</li> </ul>	ACE Question Can we design a temple for Athena? • Know how to select the most appropriate materials, tools and techniques for a given task (construction kit e.g. Lego,	ACE Question Can you make the connection? • know which tools to use for a particular task and show knowledge of handling the tool	ACE Question How can we make a moving toy for Year 1? • Know how to follow a step-by-step plan, choosing the right equipment and materials	ACE Question Can you be a technological designer? Can we create a feast fit for a Viking King? • know which tool to use for a specific practical task and explain why			

Evaluate

	shaping, joining and finishing], accurately • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	<text><list-item></list-item></text>	<ul> <li>know which material is likely to give the best outcome to result in a quality finished product</li> <li>Know how to make a prototype before making a final version (make an electrical circuit for a torch and practice fitting it into prototype casing)</li> <li>Know how to measure accurately</li> <li>Know how to make a product which uses electrical components</li> <li>ACE Question</li> <li>Mydid people make do and mend?</li> <li>know which tools to use for a particular task and show knowledge of handling the tool</li> <li>know which material is likely to give the best outcome to result in a quality finished product</li> <li>Know how to measure accurately</li> </ul>	<ul> <li>Know how to use a range of tools and equipment competently to result in a quality and aesthetically pleasing finished product</li> <li>Know how to measure accurately</li> <li>Know how to make a product which uses pneumatics</li> </ul> <b>ACE Question ACE Question Can you make a bag to trade?</b> Snow how to follow a step-by-step plan, choosing the right equipment and materials Know how to use a range of tools and equipment competently to result in a quality and aesthetically pleasing finished product. Know how to use a range of tools and equipment competently to result in a quality and aesthetically pleasing finished product. Know how to measure accurately	<ul> <li>know how to use a range of tools correctly and safely to result in a quality and aesthetically pleasing finished product</li> <li>Can you be a technological designer?</li> <li>know which tool to use for a specific practical task and explain why</li> <li>know how to use a range of tools correctly and safely to result in a quality and aesthetically pleasing finished product</li> <li>Know how to make a product which uses electrical components controlled by IT</li> </ul>
Evaluating	<ul> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas &amp; products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul>	<ul> <li><i>ACE Question</i></li> <li><i>Can we design a nutritious meal for a superhero?</i></li> <li><i>Can we design a temple for Athena?</i></li> <li>Know how to investigate and analyse a range of existing products</li> <li>know why their product has or has not, been successful</li> <li>Know how to explain how to improve their finished product giving reasons why</li> <li>Know how to prove that the finished product meets the design criteria.</li> </ul>	<ul> <li>ACE Question <ul> <li>Can you make the connection?</li> <li>Why did people make do and mend?</li> </ul> </li> <li>Know how to investigate and analyse a range of existing products</li> <li>Know how to consider the views of others when evaluating their product for both its purpose, appearance and ability to meet the design criteria</li> <li>Know how to suggest and justify improvements to the finished product made during the making process</li> </ul>	<ul> <li>ACE Question</li> <li>How can we make a moving toy for Year 1? Can you make a bag to trade?</li> <li>Know how to compare and analyse a range of existing products</li> <li>Know how to consider the views of others when evaluating their product for both its functionality and ability to meet the design criteria</li> <li>Know how to suggest and justify improvements to the finished product outlining the positive features and draw backs made during the making process</li> </ul>	<ul> <li>ACE Question <ul> <li>Can you be a technological designer?</li> <li>Can we create a feast fit for a Viking King?</li> </ul> </li> <li>Know how to compare and analyse a range of existing products <ul> <li>know how to test and evaluate their products taking into account the views of others</li> </ul> </li> <li>Know how to evaluate their product against clear criteria, linked to the appearance, functionality and ability to meet users' needs.</li> <li>Know how to suggest and justify improvements to the finished product outlining the positive features and draw backs made during the making process</li> </ul>
Technical Knowledge	<ul> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products [e.g. gears, pulleys, cams, levers and linkages]</li> </ul>	ACE Question Can we design a temple for Athena? • know how to strengthen a product by stiffening a given part or reinforce a part of the structure (e.g. folding, rolling, shaping, joining)	<ul> <li>Purpose, appearance, views, justify</li> <li>ACE Question Can you make the connection? </li> <li>Know how to use scientific knowledge of electrical systems to enhance the quality of their product (<i>lights and switches</i>) </li> <li>Use IT to program (e.g. Crumble, Micro:bit) and control their product in a simple manner (e.g. on/off, repeat loop)</li> </ul>	ACE Question How can we make a moving toy for Year 1? • Know how to use scientific knowledge of mechanical systems to enhance the quality of their product (pneumatics) ACE Question	<ul> <li>See previous year groups</li> <li>ACE Question         <ul> <li>Can you be a technological designer?</li> </ul> </li> <li>Know how to use electrical systems correctly and accurately to enhance their product</li> <li>know how to improve their product by strengthening, stiffening or reinforcing</li> <li>Know how to use IT to program (<i>Micro:bit</i>) and control their product (<i>e.g. if, when, on input A</i>)</li> </ul>

	<ul> <li>understand and use electrical systems in their products [e.g. series circuits incorporating. switches, bulbs, buzzers, motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>		Switch Battery Wire ACE Question Why did people make do and mend? Mow how to join two pieces of material together using an appropriate stitch (backstitch, and overstitch) Know how to create their own template	<ul> <li>Can you make a bag to trade?</li> <li>Know how to join two pieces of mater together using an appropriate stitch</li> <li><i>(blanket stitch)</i></li> <li>Know how to join materials together using a combination of stitching techniques taking into consideration ju appearance and purpose. (blanket stitt overstitch, running stitch, back stitch)</li> </ul>
		Reinforce, strengthen, technique, folding, rolling, shaping, joining,	Circuit, lamp, switch, battery, crocodile clip, wire, control, algorithm, secure, overstitch, back stitch, pattern	pneumatics, syringe, tube, blanket stitch,
Food Technology	<ul> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>	ACE Question Can we design a nutritious meal for a superhero? • know how to be both hygienic and safe when using food • Know how to follow a recipe to create a dish • know the difference between a savoury and sweet dish • know which foods/ingredients contribute to a healthy and varied diet and use this knowledge to make a suitable dish (NB when making veggie meals think about protein content, carbs, fat etc. Can end up carb heavy if not careful) • know the process involved in producing a variety of common ingredients (e.g. chicken, fruit and vegetables, fish, jam) • States and vegetables, fish, jam) • Bacteria, germs, savoury, sweet, Varied, diet, protein, carbohydrates, dairy, fat, grown, reared, processed, caupht		

al	
<mark>in,</mark> ch,	
	(see previous years) + Electrical system
	<ul> <li>ACE Question</li> <li>Can we create a feast fit for a Viking King?</li> <li>know when food is ready to eat (e.g. ripe, cooked, frozen)</li> <li>know which season various foods are available for harvesting</li> <li>know how to prepare a dish by combining the foods/ingredients (e.g. spaghetti bolognaise, soup, curry)</li> <li>know how food ingredients should be stored and give reasons</li> <li>know the difference between use by and best before dates</li> <li>Know how to work within a budget to create a dish</li> </ul>
	Ripe, chilled, harvest, seasonal, seasoned, Refrigerated, frazen, rancid, stale, mouldy

## Focused Practical Task





(including research)

	Design Technology: Year 1 'now knowledge' and <mark>'sticky knowledge'</mark>				
	National Curriculum	Can you make a sturdy house for an animal? (Structures)	Can you design t		
Designing	Design - purposeful, functional, appealing products for themselves and other users based on design criteria Design - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT	<ul> <li>Know how to use own ideas to design a product based on given criteria</li> <li>Know how to draw and label a simple plan of their intended product before making it</li> <li>Know how to explain to someone else how they intend to make their product</li> </ul>	<ul> <li>Know how to use own ideas</li> <li>Know how to draw and labe making it</li> <li>Know how to explain to som</li> </ul>		
		Design, plan, product, explain	Design, plan, product, explain		
Making	select from and use a range of tools and equipment to perform practical tasks [e.g. 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	<ul> <li>Know how to choose appropriate resources and tools from a given selection (Duplo, Polydron, junk modelling materials, card, paper, scissors)</li> <li>Know how to join materials (masking tape, Sellotape, glue sticks, PVA, split pins)</li> </ul>			
	characteristics	Cut, join, glue, sew, fix, tape	Cut, join, sew		
Evaluating	<b>Evaluating</b> explore and evaluate a range of existing products evaluate their ideas and products against design criteria	<ul> <li>Know how to explain what works well in existing products (houses)</li> <li>Know how to explain what works well in the model they have made</li> <li>Know how to explain what they would do differently next time</li> </ul>	<ul> <li>Know how to explain what w</li> <li>Know how to explain what w</li> <li>Know how to explain what to</li> </ul>		
		Evaluate, improve	Evaluate, improve		
Technical Knowledge	build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and	<ul> <li>Know how to make a sturdy product (consider shape, material, joining method)</li> </ul>	<ul> <li>Know how to join two pieces</li> <li>Know how to use a template</li> </ul>		
	axles], in their products.	Strong, stable, stiff, sturdy,	running stitch, needle, thread,		
Food Technology	use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from	ACE Q Can you make a know how to wash hands before preparing food and maintain cleanliness througho know how to follow a simple recipe which uses pictures and non-standard measure	Question a nest for a chick? out the process es		
		Water, soap, clean, mix, stir. melt, scoop			



#### the Queen's knickers? (Textiles)

to design a product based on given criteria I a simple plan of their intended product before

neone else how they intend to make their product



works well in existing products (knickers) works well in the model they have made they would do differently next time

s of material together using a running stitch



back tack, template, eye (of the needle), knot







	Design Technology: Year 2 'now knowledge' and <mark>'sticky knowledge'</mark>					
	National Curriculum	Can you make a safari jeep? (Mechanical movements)	Can you design and ma (			
Designing	Design - purposeful, functional, appealing products for themselves and other users based on design criteria Design - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups	<ul> <li>Know how to use own ideas to design a product based on given criteria using templates and mock-ups</li> <li>Know how to draw a plan of the product and label the materials and components to be used</li> <li>Know how to explain why they have chosen to use specific materials and components in their design</li> </ul>	<ul> <li>Know how to use own ideas to (painting app on iPads, will rephotos)</li> <li>Know how to draw a plan of to be used</li> <li>Know how to explain why the components in their design</li> </ul>			
		Design criteria, materials, template, mock-up,	Design criteria, materials, template, i			
Making	select from and use a range of tools and equipment to perform practical tasks [e.g. 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	<ul> <li>Know how to choose tools and materials and explain why they have chosen them (card, square dowel, round dowel, card wheels, wooden wheels, axel holders, scissors, hack-saw, jig, ruler)</li> <li>Know how to join materials and components in different ways (glue gun, masking tape, Sellotape, glue sticks, PVA, split pins, paper clip, stapler)</li> <li>Know how to measure materials to use in a model or structure</li> </ul>				
Evaluating	explore and evaluate a range of existing products evaluate their ideas and products against design criteria	<ul> <li>Choose, explain, measure, centimetres, grams</li> <li>Know how to explain what works well and not so well in existing products (toy / construction kit vehicles, tasting different types of bread and salad vegetables)</li> <li>Know how to describe how an existing product works (toy vehicles)</li> <li>Know how to explain what works well and not so well in the model they have made</li> <li>Know how to suggest one improvement they could make to their finished product and give a reason why</li> </ul>	<ul> <li>Know how to explain what w construction kit vehicles, tast</li> <li>Know how to describe how a</li> <li>Know how to explain what w</li> <li>Know how to suggest one im and give a reason why</li> </ul>			
		Improvement, reason, successful	Improvement, reason, successful			
Technical Knowledge	build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	• Know how to use mechanisms in their products (wheels and axles)				



## **Evaluate**

ake a healthy lunch for an astronaut? (healthy pizza)

to design a product based on given criteria using IT **need linking to Google Drive so can download the** 

the product and label the materials and components

ey have chosen to use specific materials and

mock-up

vorks well and not so well in existing products (toy / sting different types of bread and salad vegetables) an existing product works (toy vehicles) vorks well and not so well in the food they have made approvement they could make to their finished product

		Mechanism, rotate, axle, fixed	
Food Technology	use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from		<ul> <li>know how to prepare surfac</li> <li>know how to cut food safely</li> <li>Know how to weigh ingredie</li> <li>Know how to describe the in sweet, savoury, crunchy, juic</li> <li>know the original sources of from a chicken, chips from p tomatoes, cheese from milk</li> </ul>
			Wipe, hygienic, cut, chop, knife, blac hygiene, texture, taste

ces and keep them clean when preparing food <mark>y with a knife</mark>

ents from a recipe, if appropriate

ngredients used when making a food product (e.g. icy)

of some common foods (e.g. milk from a cow, egg potatoes which come from the ground, ketchup from k/cow, beef from a cow).



de, safely, ingredients, Weigh, measure, recipe,





Design Technology: Year 3 'now knowledge' and 'sticky knowledge'			
	National Curriculum	Can we design a temple for Athena? (Construction)	Can we desig
Designing	<ul> <li>use research &amp; develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>	<ul> <li>Know how to use research to contribute to the development of shared design criteria</li> <li>Know how to use an annotated sketch to design an appealing product which fulfils the design criteria</li> <li>Know how to label on the design how the materials and components will be attached</li> <li>Know how to choose materials and components for both their suitability and appeal</li> <li>Know how to use a simple IT program within the design (e.g. paintbox app on iPads, will need to connect iPads to google photos to screen shot designs and put on pc)</li> </ul>	<ul> <li>Know ho shared d</li> <li>Know ho product</li> </ul>
		Research, annotate, sketch, appealing, attach, suitability, function, purpose	Research, annoto purpose
Making	<ul> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul>	<ul> <li>Know how to select the most appropriate materials, tools and techniques for a given task (construction kit e.g. Lego, card, scissors, ruler, fold, roll, PVA glue, masking tape to hold, glue gun)</li> <li>Know how to work accurately to measure, shape and join materials and components resulting in a quality finished product</li> <li>Know how to make a product which applies strengthening skills</li> </ul>	
Evaluating	<ul> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas &amp; products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul>	<ul> <li>Know how to investigate and analyse a range of existing products</li> <li>know why their product has or has not, been successful</li> <li>Know how to explain how to improve their finished product giving reasons why</li> <li>Know how to prove that the finished product meets the design criteria.</li> </ul>	<ul> <li>Know ho products</li> <li>know wh</li> <li>Know ho giving resolution</li> <li>Know ho criteria.</li> </ul>
		Investigate, analyse, successful, criteria	Investigate, and



## **Evaluate**

gn a nutritious meal for a superhero? (Food – eg pasta bake)

<mark>ow to use research to contribute to the development of</mark> lesign criteria

ow to use an annotated sketch to design an appealing which fulfils the design criteria

ate, sketch, appealing, attach, suitability, function,

ow to investigate and analyse a range of existing s

ny their product has or has not, been successful

ow to explain how to improve their finished product easons why

ow to prove that the finished product meets the design

alyse, successful, criteria

Technical Knowledge	<ul> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products [e.g. gears, pulleys, cams, levers and linkages]</li> <li>understand and use electrical systems in their products [e.g. series circuits incorporating. switches, bulbs, buzzers, motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>	<ul> <li>know how to strengthen a product by stiffening a given part or reinforce a part of the structure (e.g. folding, rolling, shaping, joining)</li> <li>Reinforce, strengthen, technique, folding, rolling, shaping, joining,</li> </ul>	
Food Technology	<ul> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>		<ul> <li>know hove</li> <li>Know hove</li> <li>know the</li> <li>know where varied die</li> <li>know the</li> <li>ingredier</li> </ul>

#### ow to be both hygienic and safe when using food

ow to follow a recipe to create a dish ne difference between a savoury and sweet dish hich foods/ingredients contribute to a healthy and liet and use this knowledge to make a suitable dish ne process involved in producing a variety of common ents (e.g. chicken, fruit and vegetables, fish, jam)



. savoury, sweet, Varied, diet, protein, carbohydrates, n, reared, processed, caught



## Design Technology: Year 4 'now knowledge' and 'sticky knowledge'

Design

	National Curriculum	Can you make the connection? (Electrical systems)	
Designing	<ul> <li>use research &amp; develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>	<ul> <li>Know how to conduct research to contribute to the development of shared design criteria</li> <li>Know how to use annotated sketches to design at least two possibilities for an appealing product which fulfils the design criteria</li> <li>Know how to label on the design how the materials and components will be attached and include the intended measurements</li> <li>Know how to use prototypes to communicate their ideas</li> <li>Know how to persevere and adapt work when original ideas are unsuccessful and annotate the original design with changes made throughout the making process</li> </ul>	<ul> <li>Know how to cond design criteria</li> <li>Know how to use a an appealing produ</li> <li>Know how to label attached and inclu</li> <li>Know how to use p</li> <li>Know how to perso unsuccessful and a throughout the man</li> </ul>
Making	<ul> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul>	<ul> <li>know which tools to use for a particular task and show knowledge of handling the tool</li> <li>know which material is likely to give the best outcome to result in a quality finished product</li> <li>Know how to make a prototype before making a final version if appropriate (<i>e.g. an electrical circuit for a torch</i>)</li> <li>Know how to measure accurately</li> <li>Know how to make a product which uses electrical components</li> </ul>	<ul> <li>know which tools to handling the tool</li> <li>know which mater finished product</li> <li>Know how to mease</li> </ul>
Evaluating	<ul> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas &amp; products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul>	<ul> <li>Know how to investigate and analyse a range of existing products</li> <li>Know how to consider the views of others when evaluating their product for both its purpose, appearance and ability to meet the design criteria</li> <li>Know how to suggest and justify improvements to the finished product made during the making process</li> </ul>	<ul> <li>Know how to invest</li> <li>Know how to const for both its purpost</li> <li>Know how to sugg made during the m</li> </ul>
Technical Knowledge	<ul> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products [e.g. gears, pulleys, cams, levers and linkages]</li> <li>understand and use electrical systems in their products [e.g. series circuits incorporating. switches, bulbs, buzzers, motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>	<ul> <li>Know how to use scientific knowledge of electrical systems to enhance the quality of their product (<i>lights and switches</i>)</li> <li>Use IT to program (<i>e.g. Crumble, Micro:bit</i>) and control their product in a simple manner (<i>e.g. on/off, repeat loop</i>)</li> </ul>	<ul> <li>Know how to join stitch (backstitch, a)</li> <li>Know how to creat</li> </ul>
	<ul> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>	Circuit, lamp, switch, battery, crocodile clip, wire, control, algorithm	secure, overstitc



Make

#### I people make do and mend? (Textiles)

duct research to contribute to the development of shared

annotated sketches to design at least two possibilities for luct which fulfils the design criteria

l on the design how the materials and components will be ide the intended measurements

prototypes to communicate their ideas

severe and adapt work when original ideas are annotate the original design with changes made aking process

*irements, centimetres, millimetres* 

to use for a particular task and show knowledge of

rial is likely to give the best outcome to result in a quality

asure accurately

estigate and analyse a range of existing products sider the views of others when evaluating their product se, appearance and ability to meet the design criteria gest and justify improvements to the finished product making process

ws, justify

two pieces of material together using an appropriate and overstitch)

te their own template



itch, pattern

(including research)

Design



Design Technology: Year 5 'now knowledge' and <mark>'sticky knowledge'</mark>			
	National Curriculum	How can we make a moving toy (rainforest animal) for Year 1? (Pneumatics)	(
Designing	<ul> <li>use research &amp; develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design</li> </ul>	<ul> <li>Know how to conduct research using different sources to develop own design criteria and explain how it will appeal to a specific user</li> <li>Know how to use cross-sectional diagrams to design at least two possibilities for an appealing product which fulfils the design criteria</li> <li>Know how to label on the design how the materials and components will be attached and include accurate measurements</li> <li>Know how to produce a detailed, step-by-step plan of the chosen design</li> <li>Know how to persevere and adapt work when original ideas are unsuccessful and annotate the step by step plan with changes made throughout the making process</li> </ul>	<ul> <li>Know how to own design cr user</li> <li>Know how to possibilities for criteria</li> <li>Know how to components v</li> <li>Know how to design</li> <li>Know how to unsuccessful a made through</li> <li>Know how to process (e.g.) feature and to</li> </ul>
Making	<ul> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul>	<ul> <li>Know how to follow a step-by-step plan, choosing the right equipment and materials</li> <li>Know how to use a range of tools and equipment competently to result in a quality and aesthetically pleasing finished product</li> <li>Know how to measure accurately</li> <li>Know how to make a product which uses mechanical components</li> </ul>	<ul> <li>Know how to equipment an</li> <li>Know how to result in a quation</li> <li>Know how to for the second sec</li></ul>
Evaluating	<ul> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas &amp; products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul>	<ul> <li>Competently, aesthetically pleasing,</li> <li>Know how to compare and analyse a range of existing products</li> <li>Know how to consider the views of others when evaluating their product for both its functionality and ability to meet the design criteria</li> <li>Know how to suggest and justify improvements to the finished product outlining the positive features and draw backs made during the making process</li> </ul>	<ul> <li>Competently, aesthete</li> <li>Know how to</li> <li>Know how to product for be criteria</li> <li>Know how to product outline during the material</li> </ul>
		Functionality, positive features, draw backs,	Functionality, positive



## **Evaluate**

#### Can you make a bag to trade? (Textiles)

o conduct research using different sources to develop criteria and explain how it will appeal to a specific

o use cross-sectional diagrams to design at least two for an appealing product which fulfils the design

o label on the design how the materials and s will be attached and include accurate measurements o produce a detailed, step-by-step plan of the chosen

o persevere and adapt work when original ideas are I and annotate the step by step plan with changes ghout the making process

o use a more complex IT program within the design . powerpoint/word/publisher and the draw shape text boxes to label)

sectional, step-by-step, process

o follow a step-by-step plan, choosing the right and materials

o use a range of tools and equipment competently to uality and aesthetically pleasing finished product o measure accurately





#### hetically pleasing,

o compare and analyse a range of existing products o consider the views of others when evaluating their both its functionality and ability to meet the design

o suggest and justify improvements to the finished lining the positive features and draw backs made naking process

ve features, draw backs

Technical Knowledge	<ul> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products [e.g. gears, pulleys, cams, levers and linkages]</li> <li>understand and use electrical systems in their products [e.g. series circuits incorporating. switches, bulbs, buzzers, motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>	<text></text>	<ul> <li>Know how to j appropriate st</li> <li>Know how to j stitching techr and purpose. ( stitch)</li> <li>(Back</li> </ul>
		pneumatics, syringe, tube,	blanket stitch

o join two pieces of material together using an stitch *(blanket stitch)* 



(New stitch for Y5)

o join materials together using a combination of chniques taking into consideration join, appearance . (blanket stitch, overstitch, running stitch, back



ack stitch and over stitch taught in Y4)

Investigate (including research)





## Design Technology: Year 6 'now knowledge' and 'sticky knowledge'

	National Curriculum	Can you be a technological designer? (Controlled mechanics)	Can w
Designing	<ul> <li>use research &amp; develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design</li> </ul>	<ul> <li>Know how to conduct market research to develop own design criteria which takes into account culture and society.</li> <li>Know how to design at least two possibilities for an appealing product which fulfils the design criteria</li> <li>Know how to use exploded diagrams to design at least two possibilities for an appealing product which fulfils the design criteria</li> <li>Know how to produce a detailed, step-by-step plan of the chosen design</li> <li>Know how to label on the design how the materials and components will be attached and include accurate measurements</li> <li>Know how to persevere and adapt work when original ideas are unsuccessful and annotate the step by step plan with changes made throughout the making process</li> </ul>	<ul> <li>Know how to which takes</li> <li>Bolognese to requirement</li> <li>Know how to possibilities criteria</li> <li>Know how to design</li> </ul>
Making	<ul> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul>	<ul> <li>Market research, culture, society, exploded diagram</li> <li>know which tool to use for a specific practical task and explain why</li> <li>know how to use a range of tools correctly and safely to result in a quality and aesthetically pleasing finished product</li> <li>Know how to make a product which uses electrical components controlled by IT</li> </ul>	<ul> <li>know which why</li> <li>know how to a quality and</li> </ul>
		See Technical Knowledge	See Technical Kno
Evaluating	<ul> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas &amp; products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul>	<ul> <li>Know how to compare and analyse a range of existing products</li> <li>know how to test and evaluate their products taking into account the views of others</li> <li>Know how to evaluate their product against clear criteria, linked to the appearance, functionality and ability to meet users' needs.</li> <li>Know how to suggest and justify improvements to the finished product outlining the positive features and draw backs made during the making process</li> </ul>	<ul> <li>Know how to converse to the second sec</li></ul>



## **Evaluate**

#### ve create a feast fit for a Viking King? (Food)

to conduct research to develop own design criteria is into account culture and society (e.g. No spaghetti in a Viking feast, cost implications, dietary

#### nts)

to use exploded diagrams to design at least two s for an appealing product which fulfils the design

to produce a detailed, step-by-step plan of the chosen

ploded diagram

to use for a specific practical task and explain

to use a range of tools correctly and safely to result in nd aesthetically pleasing finished product

#### owledge

compare and analyse a range of existing products est and evaluate their products taking into account the s

valuate their product against clear criteria, linked to e, functionality and ability to meet users' needs. uggest and justify improvements to the finished

ing the positive features and draw backs made during ocess

		From previous year groups: Investigate, analyse, successful, criteria, purpose, appearance, views, justify, functionality, positive features, draw backs,	From previous yea purpose, appearan draw backs,
Technical Knowledge	<ul> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products [e.g. gears, pulleys, cams, levers and linkages]</li> <li>understand and use electrical systems in their products [e.g. series circuits incorporating. switches, bulbs, buzzers, motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>	<ul> <li>Know how to use electrical systems correctly and accurately to enhance their product</li> <li>know how to improve their product by strengthening, stiffening or reinforcing</li> <li>Know how to use IT to program (Micro:bit) and control their product (e.g. if, when, on input A)</li> </ul>	
Food Technology	<ul> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>		<ul> <li>know when</li> <li>know which</li> <li>know how t</li> <li>(e.g. spaght)</li> <li>know how f</li> <li>know the di</li> <li>Know how t</li> </ul>
			Ripe, chilled, harv stale, mouldy, exp

ar groups: Investigate, analyse, successful, criteria, ince, views, justify, functionality, positive features,

n food is ready to eat *(e.g. ripe, cooked, frozen)* h season various foods are available for harvesting to prepare a dish by combining the foods/ingredients **hetti bolognaise, soup, curry)** food ingredients should be stored and give reasons lifference between use by and best before dates

to work within a budget to create a dish

st, seasonal, seasoned, refrigerated, frozen, rancid, iration date, budget,