

## Creativity, Curiosity, Caring

## Design and Technology Curriculum Sequence

## Intent – Our Rationale

Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. At Aboyne Lodge we encourage children to use their 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. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

It is the intent of Aboyne Lodge for Design Technology to be taught in all year groups through at least one topic per term, which includes one topic relating to food. Design Technology projects are made where possible cross curricular - linking to other subjects taught.

The teaching of Design Technology across the school follows the National Curriculum through the use of 'Planbee' documents. These documents are used as a basis for the teaching and have been adapted to our school. Children design products with a purpose in mind and an intended user of the products. Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this. We have identified the following strands as areas to focus on for Design and Technology: design; make; evaluate; structures; mechanisms; electrical systems; computing systems; and food technology. Textiles skills will be taught in our art curriculum and opportunities to use these within a design and technology context will be offered to children as a stand-alone activity. This plan allows for all areas to be covered thoroughly and a focus on the progression of skills.

Curriculum Drivers						
Sustainability	<b>Cultural Diversity</b>	Growth Mindset	Oracy			



			Structures			
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Topic area	Homes Shell/frame	Wacky windmills frame	Packaging shell	Mini Greenhouses shell	Moving Toys (mechanisms) frame	Bird Houses / Fairgrounds Frame/shell
Know	<ul> <li>that there are different types of homes.</li> <li>to know the different features of a home.</li> <li>that there are different methods for joining materials.</li> </ul>	-to know the function and features of a windmillto know that some materials are stronger than others how to construct a base and assess its sturdiness to know how to choose materials for a particular purpose how to plan and evaluate a product.	- that packaging can be deconstructed to understand that 3-D shapes can be constructed from nets how to cut out, mark, score and assemble a 3-D net that graphics can be used for specific effects how to evaluate the font, shape and design of a package how to design and evaluate their own product.	<ul> <li>what a greenhouse is used for.</li> <li>factors that make a structure stable.</li> <li>different ways of joining materials.</li> <li>how to make a plan to a set criteria.</li> </ul>	- different ways to strengthen a structure how to test the stability of a structure how to experiment with a range of tools, materials and techniques how to design and evaluate a frame structure.	<ul> <li>to know and describe the features of a birdhouse.</li> <li>to know and draw and exploded and 3D diagram.</li> <li>to know what tools and equipment are needed in order to work with wood.</li> <li>safety precautions.</li> <li>how to plan and adapt to aid construction.</li> </ul>
Be able to	- design purposeful, functional, appealing	-design purposeful, functional, appealing products for themselves and	- use research and develop design criteria to inform the design of	- use research and develop design criteria to inform the design of	-use research and develop design criteria to inform the design of	- use research and develop design criteria to inform the design of



products for	
themselves	
and other	
users based or	1
design criteria	
generate	

- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing

other users based on design criteria - generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. - explore and

evaluate a range of

existing products

- build structures,

can be made

stronger, stiffer

and more stable

exploring how they

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, crosssectional and exploded diagrams, prototypes, pattern

pieces and

design

computer-aided

- select from and

use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately - select from and

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, crosssectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

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, crosssectional and

exploded diagrams,

prototypes,

of tools and

joining and

finishing],

accurately

use a wider range

design

pattern pieces and computer-aided - select from and use a wider range equipment to perform practical tasks [for example, cutting, shaping, - select from and sand paper, clamp)

- 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 - select from and
- use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately (hand drill, saw,



use a wider range

- select from and		of materials and		of materials and	- select from and
use a wide		components,	- select from and	components,	use a wider range of
range of		including	use a wider range	including	materials and
materials and		construction	of materials and	construction	components,
components,		materials, textiles	components,	materials, textiles	including
including		and ingredients,	including	and ingredients,	construction
construction		according to their	construction	according to their	materials, textiles
materials,		functional	materials, textiles	functional	and ingredients,
textiles and		properties and	and ingredients,	properties and	according to their
ingredients,		aesthetic qualities	according to their	aesthetic qualities	functional
according to		- investigate and	functional	- investigate and	properties and
their		analyse a range of	properties and	analyse a range of	aesthetic qualities
characteristics		existing products	aesthetic qualities	existing products	- evaluate their
<ul> <li>explore and</li> </ul>		- evaluate their		- evaluate their	ideas and products
evaluate a		ideas and products	- investigate and	ideas and products	against their own
range of		against their own	analyse a range of	against their own	design criteria and
existing		design criteria and	existing products	design criteria and	consider the views
products		consider the views		consider the views	of others to
<ul> <li>evaluate their</li> </ul>		of others to	- evaluate their	of others to	improve their work
ideas and		improve their work	ideas and products	improve their work	
products			against their own		
against design			design criteria and		
criteria			consider the views		
- build			of others to		
structures,			improve their work		
exploring how					
they can be			- apply their		
made stronger,			understanding of		
stiffer and			how to strengthen,		
more stable			stiffen and		
			reinforce more		
			complex structures		
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Vocabulary e c c fo	Houses, homes, exterior, interior, join, combine, hinge, cut, fold, join, fix structure, wall, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, triangle, square, rectangle, circle.	cut, fold, join, fix structure, wall, tower, framework, weak, strong, stable, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder,	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, font, lettering, text, graphics, decision, evaluating, design brief design criteria, prototype	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, material, stiff, strong, corrugating, ribbing, translucent, transparency, stable/unstable, frame, base.	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design prototype, annotated sketch, purpose, user, innovation, research, functional	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, purpose, prototype, appearance, clamp, hammer, hand drill, dowel, saw, sand.
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	Mechanisms								
At the end of									
each year pupils	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6			
will:									
Topic Area	Moving Pictures	Fire Engines	Moving Monsters		Moving Toys	Fairgrounds			
Know	<ul> <li>to know that</li> </ul>	- what the	<ul> <li>to know that</li> </ul>		<ul> <li>to know that</li> </ul>	- to know how			
	different	main	some objects		cam	a pulley and			
	mechanisms	features of a	use air to		mechanisms	belt system			
	provide	fire engine	make them		change	can transfer			
	different types	are.	work.		rotary	movement.			
	of movement.	- what	<ul> <li>to know how</li> </ul>		motion to	- to know how			
	- to know how	wheels, axis	simple		linear	an electrical			
	to make a	and chassis	pneumatic		motion.	circuit with a			



Be able to do	sliding mechanism.  - what the term lever and pivot mean.  - how to combine and join materials to make a lever mechanism.  - how to combine and join materials to make a wheel mechanism.  - how to incorporate moving mechanisms into pictures.  - to work safely with a range of equipment.	are and their function.  - to know the difference between a loose and a fixed axel.  - how to combine materials in different ways to create component parts.  - how to join fixed and movable parts.  - how to use tools safely.	systems work and use appropriate vocabulary.  - how to construct a pneumatic system to control movement.  - how to work safely and effectively with a range of tools and materials.	- to know example of cam toys and be able to explain how they work that different shaped cams affect the movement of the follower how to experiment with a range of tools, materials and techniques how to design a structure to support a cam mechanism.	motor can create rotating parts.  - to know how to manipulate pulleys to create different movements.  - to know how to plan to a certain criteria.  - how to use equipment safely and correctly.  - to know how to evaluate and make improvements to a plan.
De able to do	purposeful, functional, appealing products for	functional, appealing products for themselves and	and develop design criteria to inform the	develop design criteria to inform the design of innovative,	develop design criteria to inform the design of innovative, functional, appealing



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.
select from and
use a range of
tools and
equipment to
perform
practical tasks
[for example,
cutting,
shaping,

joining and

use a wide

select from and

finishing

other users based on design criteria - generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology. - select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing - select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

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, crosssectional and exploded diagrams, prototypes, pattern pieces and computeraided design select from and use a wider range of tools and

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 - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately - select from and use a wider range of materials and components,

products that are fit for purpose, aimed at particular individuals or groups -generate, develop, model and communicate their ideas through discussion, annotated sketches, crosssectional and exploded diagrams, prototypes, pattern pieces and computeraided design -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 -apply their understanding of how to strengthen, stiffen and reinforce more complex structures -understand and use mechanical systems in their products [for



range of	- explore and	equipment to	including	example, gears,
materials and	evaluate a range of	perform	construction	pulleys, cams, levers
components,	existing products	practical	materials, textiles	and linkages]
including	- evaluate their	tasks [for	and ingredients,	-understand and use
construction	ideas and products	example,	according to their	electrical systems in
materials,	against design	cutting,	functional	their products [for
textiles and	criteria	shaping,	properties and	example, series
ingredients,	- explore and use	joining and	aesthetic qualities	circuits incorporating
according to	mechanisms [for	finishing],	- investigate and	switches, bulbs,
their	example, wheels	accurately	analyse a range of	buzzers and motors]
characteristics	and axles], in their	- select from	existing products	-apply their
- explore and	products	and use a	- evaluate their	understanding of
evaluate a		wider range	ideas and products	computing to
range of		of materials	against their own	program, monitor
existing		and	design criteria and	and control their
products		components,	consider the views	products
- evaluate their		including	of others to	
ideas and		construction	improve their work	
products		materials,	- understand and	
against design		textiles and	use mechanical	
criteria		ingredients,	systems in their	
- explore and		according to	products [for	
use		their	example, gears,	
mechanisms		functional	pulleys, cams,	
[for example,		properties	levers and linkages]	
levers, sliders],		and aesthetic		
in their		qualities		
products		- evaluate		
		their ideas		
		and products		
		against their		
		own design		
		criteria and		



			consider the views of others to improve their work - understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		
Understand this Vocabulary	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, mechanism, movement.	vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, components, parts, function.	control, pneumatic system, pressure, inflate, deflate, input, output, pump, hinge, model, design, materials, equipment, decorate, instructions, pivot, lever, hinge.	Cams Snail cam Cam shaft Eccentric cam Movement Hand powered mechanism Linear motion Rotation Follower Slider component	pulley, levers, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch, circuit diagram annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic, user, purpose, design



			Food Technology			
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Topic Area	Seaside Snacks - savoury pinwheels/wraps - vegetable boats - milk lollies	Teddy Bears' Picnic - Omelette cakes - sweet and savoury skewers	Sandwich Snacks - sandwiches	Seasonal Food - fruit tarts - Stuffed Peppers - Meatballs	Bread - Bread	British Dishes - fruit crumble - Welsh Rarebit
Know	<ul> <li>how to use tools effectively and safely.</li> <li>how to cut, grate, mash, mould.</li> <li>that cooking, baking and freezing are all types of techniques.</li> <li>different fruit and vegetables.</li> <li>how to evaluate a product.</li> </ul>	<ul> <li>how to use tools effectively and safely.</li> <li>how to whisk, cook, skewer, cut, shape.</li> <li>how to evaluate a product.</li> <li>that food can change flavour and texture when cooked.</li> </ul>	-how to taste and describe different foodhow to evaluate fillings and breads how to design a sandwich snack how to spread, cut, grate, shape, roll, skewerhow to use tools effectively and safely.	- what     'seasonal     foods'     mean why some     foods are     available all     year around that some     fruits are     suited to the     climate and     weather in     Britain how fruit     may be     processed     or	<ul> <li>how to compare and evaluate different bread products.</li> <li>how to weigh and measure ingredients.</li> <li>how to investigate and carry out research.</li> <li>to work safely,</li> </ul>	<ul> <li>the origins of different British dishes.</li> <li>how to chop and cut safely.</li> <li>what RDA for sugar is on packaging and how to monitor it.</li> <li>the seasonality of different British fruit.</li> <li>how to</li> </ul>



				<ul> <li>why vegetables are part of a healthy lifestyle.</li> <li>when some British vegetables are in season.</li> <li>how fish and meat are reared and processed.</li> <li>why it is good to eat seasonally.</li> <li>how to use a variety of techniques safely and hygienically.</li> </ul>	and accurately to plan and evaluate a product.	follow a simple recipe to adapt a recipe to use tools safely and effectively to evaluate a product.
Be able to do	design purposeful, functional, appealing products for themselves and other users based on design criteria - select from and use a range of tools and equipment to perform practical tasks [for example, cutting,	design purposeful, functional, appealing products for themselves and other users based on design criteria - select from and use a range of tools and equipment to perform practical	- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular	- 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	- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular	<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> </ul>



shaping, joining and	tasks [for example,	individuals or	- understand	individuals or	- understand
finishing	cutting, shaping,	groups	seasonality, and	groups	seasonality, and
- select from and use a	joining and	- generate,	know where and	- generate,	know where and
wide range of materials	finishing	develop, model and	how a variety of	develop, model and	how a variety of
and components,	- select from and	communicate their	ingredients are	communicate their	ingredients are
including construction	use a wide range of	ideas through	grown, reared,	ideas through	grown, reared,
materials, textiles and	materials and	discussion,	caught and	discussion,	caught and
ingredients, according	components,	annotated	processed	annotated	processed
to their characteristics	including	sketches, cross-		sketches, cross-	
- evaluate their ideas	construction	sectional and		sectional and	
and products against	materials, textiles	exploded diagrams,		exploded diagrams,	
design criteria	and ingredients,	prototypes, pattern		prototypes, pattern	
- use the basic	according to their	pieces and		pieces and	
principles of a healthy	characteristics	computer-aided		computer-aided	
and varied diet to	- evaluate their	design		design	
prepare dishes	ideas and products	- select from and		- select from and	
	against design	use a wider range		use a wider range	
	criteria	of materials and		of materials and	
	- use the basic	components,		components,	
	principles of a	including		including	
	healthy and varied	construction		construction	
	diet to prepare	materials, textiles		materials, textiles	
	dishes	and ingredients,		and ingredients,	
		according to their		according to their	
		functional		functional	
		properties and		properties and	
		aesthetic qualities		aesthetic qualities	
		- investigate and		- investigate and	
		analyse a range of		analyse a range of	
		existing products		existing products	
		- evaluate their		- evaluate their	
		ideas and products		ideas and products	
		against their own		against their own	



		1		T	1	
			design criteria and		design criteria and	
			consider the views		consider the views	
			of others to		of others to	
			improve their work		improve their work	
			- understand and		- understand and	
			apply the principles		apply the principles	
			of a healthy and		of a healthy and	
			varied diet		varied diet	
			- prepare and cook		- prepare and cook	
			a variety of		a variety of	
			predominantly		predominantly	
			savoury dishes		savoury dishes	
			using a range of		using a range of	
			cooking techniques		cooking techniques	
Understand this	Grate, mash, cut,	whisk, cook, fry,	spread, cut, grate,	Pastry, shape,	Knead, yeast, rise,	Chop, cut, mix, rub,
Vocabulary	mould, freeze, cook,	skewer, cut, shape,	shape, roll, skewer,	crimp, bake, rise,	prove, combine,	peel, combine,
	bake, fruit, vegetable,	fruit, vegetables,	vegetable, salad,	filling, cut, stew,	mould, shape,	filling, melt, grate,
	roll, pastry, texture,	sweet, savoury,	savoury, taste,	deseed, mould,	taste, texture,	spread, taste,
	taste.	texture, taste.	texture.	mix, combine, fry,	sweet, savoury,	texture, sweet,
				bake, taste, texture,	weigh, measure.	savoury, measure,
				sweet, savoury,		weigh.
				seasonal.		

	Textiles									
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6				
Topic Area		Puppets	Pencil Cases		Christmas decorations*	Memory Blanket*				
Know										
Be able to do										



Understand this			
Vocabulary			

<sup>\*</sup>Stand alone projects rather than taught units.

			Electrical			
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Topic Area				Light up signs	Pioneering Programming	Fairgrounds
Know				- to identify features of illuminating signs how a simple circuit can be constructed the aesthetic and practical uses of LED bulbs appropriate ways to fit electrical components in their designs how to write an edit programs to	See objectives below	- to know how a pulley and belt system can transfer movement to know how an electrical circuit with a motor can create rotating parts to know how to manipulate pulleys to create different movements to know how to plan to a certain criteria how to use equipment



		control and	safely and
		LED light.	correctly.
		- how to	- to know how
		create	to evaluate
		algorithms	and make
		with a set of	improvements
		instructions.	to a plan.
Be able to do		- use research and	-use research and
		develop design	develop design criteria
		criteria to inform the	to inform the design of
		design of innovative,	innovative, functional,
		functional, appealing	appealing products that
		products that are fit	are fit for purpose,
		for purpose, aimed at	aimed at particular
		particular individuals	individuals or groups
		or groups	-generate, develop,
		- generate, develop,	model and
		model and	communicate their
		communicate their	ideas through
		ideas through	discussion, annotated
		discussion, annotated	sketches, cross-
		sketches, cross-	sectional and exploded
		sectional and	diagrams, prototypes,
		exploded diagrams,	pattern pieces and
		prototypes, pattern	computer-aided design
		pieces and computer-	-investigate and
		aided design	analyse a range of
		- select from and use	existing products
		a wider range of tools	evaluate their ideas
		and equipment to	and products against
		perform practical	their own design
		tasks [for example,	criteria and consider
		cutting, shaping,	the views of others to
		joining and finishing],	improve their work
		accurately	



- select from and use	-apply their
a wider range of	understanding of how
materials and	to strengthen, stiffen
components,	and reinforce more
including	complex structures
construction	understand and use
materials, textiles and	mechanical systems in
ingredients, according	their products [for
to their functional	example, gears, pulleys,
properties and	cams, levers and
aesthetic qualities	linkages]
- investigate and	-understand and use
analyse a range of	electrical systems in
existing products	their products [for
- evaluate their ideas	example, series circuits
and products against	incorporating switches,
their own design	bulbs, buzzers and
criteria and consider	motors]
the views of others to	apply their
improve their work	understanding of
- apply their	computing to program,
understanding of how	monitor and control
to strengthen, stiffen	their products
and reinforce more	
complex structures	
- 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	



Understand this Vocabulary				and control their products  Circuit, switch, bulb, motor, program, monitor, control, algorithm, LED, aesthetic, design, electrical.		pulley, levers, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch, circuit diagram annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic, user, purpose, design specification, design
						brief
			Computing			
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Topic Area				Light up signs	Pioneering Programming	Fairgrounds
Know				See objectives above.	<ul> <li>how         embedded         systems         monitor and         control         products.</li> <li>to create         prototypes         of a</li> </ul>	See objectives above.



			computer	
			controlled	
			electrical	
			system.	
			- how to	
			incorporate	
			more than	
			one	
			electrical	
			component	
			in their	
			system.	
			- how to	
			debug their	
			system.	
			- to evaluate	
			a program	
			and their	
			own design.	
Be able to do			-use research and	
De able to do			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
	- select from and use
	a wider range of tools
	and equipment to
	perform practical
	tasks [for example,
	cutting, shaping,
	joining and finishing],
	accurately
	- 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
	- 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
	program, monitor



			and control their products	
Understand this			Algorithm, debug,	
Vocabulary			design, circuit,	
			electrical system,	
			component,	
			prototype,	