Two Mile Ash School

DT

INTENT

National Curriculum

Confident Individuals | **Responsible Citizens** | **Successful Learners**

Design and Technology at Two Mile Ash School is an inspiring, creative and practical subject. Our Design and Technology curriculum encourages children to learn to think creatively to solve problems both as individuals and as members of a team. We teach them to be inspired by real world opportunities and relevant problems, identifying needs and developing a range of ideas and solutions in a variety of contexts. By researching past and present technologies, where possible meeting real industry workers and applying knowledge learnt across other areas of the curriculum, children build their confidence, resilience, practical and analytical skills. Skills are taught progressively to ensure that all children are able to learn and practice in order to develop as they move through the school including product research, disassembling and building products, making prototypes, testing, designing and evaluating. Furthermore, they learn to overcome challenges and improve designs and products. We aim to, wherever possible, make cross curricular links with relative subjects such as mathematics, science, engineering, computing and art. . By the time children reach Year 6, they would have had experience of food technology, textiles, design and construction; they should be confidently performing tasks and applying their knowledge, understanding and an increased level of skills as they progress through the school. They will be on the way to becoming innovators and will have used a range of tools, resources and materials, including the use of computing, to create effectively constructed and aesthetically pleasing results. This, along with a strong focus on the importance of evaluation, allows children to adapt and improve their work, providing them with a strong foundation for the next step of their learning and a key skill for life.

Essential Objectives (Our End Points)

What we want children to be able to do or know by the time they leave.

Confident Individuals

Responsible Citizens

Successful Learners

Design and Technology

- To master practical skills
- To design, make, evaluate and improve
- To take inspiration from design throughout history

Long Term Plan (What's taught when)

Design Technology

Years 3 and 4 - Milestone 2

MILESTONE 2 Autumn Term	MILESTONE 2 Spring Term	MILESTONE 2 Summer Term
Year 3 Basic skills • measuring, weighing and cutting accurately. **Kite Making Year 3** **EO: To design make evaluate and improve** • Design with purpose by identifying opportunities to design • Make products by working efficiently (such as by carefully selecting materials) • Refine work and techniques as work progresses continually evaluating the products design **EO: To take inspiration from design throughout history.** • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for design. • Improve upon existing designs, giving reasons for choices. **EO: To master practical skills in construction.** • Cut materials accurately and safely be selecting appropriate tools. • Measure and mark out the nearest millimetre • Apply appropriate cutting and shaping techniques that include cuts within perimeter of material (such as slots or cut-outs). • Select appropriate joining techniques.	**Year 3** **Seasonal foods** **EO: To master practical skills:** • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately • Cut materials accurately and safely be selecting appropriate tools. • Select appropriate joining techniques. **EO: To design, make, evaluate and improve** • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. **EO: To take inspiration throughout History.** • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for design • Improve upon existing designs, giving reasons for choices. **Year 4 – Viking money pouches** **EO: To design, make, evaluate and improve.**	**Year 3** **Sewing- samplers** **EO: To take inspiration from designers through history.** • Disassemble products to understand how they work. • Improve upon existing designs giving reasons for choice. **EO: To master practical skills (materials)** • To select the most appropriate techniques to decorate textiles. **EO: To design, make, evaluate, and improve.** • Refine work and techniques as work progresses, continually evaluating the product design. • Make products by working efficiently. • Design with purpose by identifying opportunities to design. Year 4 – European food **EO: To master practical skills:** • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately

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Milestone 3

• Choose suitable techniques to construct products or to repair items. **Year 4 – Christmas cards** **EO: To design, make, evaluate and improve.** • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • F: Refine work and techniques as work progresses, continually evaluating the product design. **EO: To take inspiration from design throughout history.** • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for design. • Improve upon existing designs, giving reasons for choices. **EO: To master practical skills Electrics/electronics (Do in science)** • Electricals and electronics: • Create series and parallel circuits. • Create circuits using electronics kits that employ a number of components (such as LEDs resistors, transistor and chips).	• Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • F: Refine work and techniques as work progresses, continually evaluating the product design. **EO: To take inspiration from design throughout history.** • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for design. • Improve upon existing designs, giving reasons for choices. **EO: To master practical skills in construction.** **Textiles. (Do in Art)** • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Join textiles with appropriate techniques to decorate textiles.	• Cut materials accurately and safely be selecting appropriate tools. • Select appropriate joining techniques. **EO: To design, make, evaluate and improve** • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. **EO: To take inspiration throughout History.** • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for design • Improve upon existing designs, giving reasons for choices.

MILESTONE 3 Autumn Term	MILESTONE 3 Spring Term	MILESTONE 3 Summer Term
Year 5 Bread Skills and vocabulary lessons for food EO: To design, make, evaluate and improve • Lessons to design before and evaluate and improve after. EO: To take inspiration from design throughout history EO: To master practical skills - Food: • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures. **Year 6 World at War – SEWING** Skills and vocabulary lessons for stockings for soldiers Cross curricular opportunities for weighing and measuring in maths EO: To design, make, evaluate and improve • Lessons to design before and evaluate and improve after. EO: To take inspiration from design throughout history	**Year 5 Tudor Cushion** **EO: To master practical skills** • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). • Join textiles with combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). EO: To design, make, evaluate and improve • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high-quality finish, using art skills where appropriate. EO: To take inspiration from design throughout history **Year 6 Microbit** EO: To master practise skills (coding) • Write code to control and monitor models or products. EO: To design, make, evaluate, and improve • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. EO: To desighn, make, evaluate, and improve	**Year 5 Bridges** EO: To master practical skills – Construction Bridges • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). • Develop a range of practical skills to create products and repair items (such as cutting, drilling and screwing, nailing, gluing and sanding). **Year 6 – Trains** EO: To master practical skills – Construction Bridges • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). • Develop a range of practical skills to create products and repair items (such as cutting, drilling and screwing, nailing, gluing and sanding). EO: To desighn, make, evaluate, and improve • Convert rotary motion to linear using cams.

EO: To master techniques SOS Bags • Join textiles with combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).	• Ensure products have a high-quality finish, using art skills where appropriate. • Deign with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Create innovative designs that improve upon existing products. •	• Use innovative combinations of electronics (or computing) and mechanics in product design. • Ensure products have a high-quality finish, using art skills where appropriate.

Progression of Knowledge and Skills

Essential Objective: To master practical skills (food)			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Skills	• Measure or weigh using measuring cups or electronic scales.	• Measure ingredients to the nearest gram accurately. • Follow a recipe.	• Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.
Knowledge	• Know how to cut, peel or grate ingredients safely and hygienically. • Know how to assemble or cook ingredients.	• Know how to prepare ingredients hygienically using appropriate utensils. • Know how to assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).	• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.

Essential Objective: To master practical skills (materials)			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Skills	• Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	• Join textiles with appropriate stitching. • Use the most appropriate techniques to decorate textiles.	• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).

Knowledge		• Understand the need for a seam allowance.	• Know how to create objects (such as a cushion) that employ a seam allowance.

Essential Objective: To master practical skills (electricals and electronics)			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Knowledge	• Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).	• Create series and parallel circuits	• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).

Essential Objective: To master practical skills (coding)			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Knowledge	• Model designs using software.	• Control and monitor models using software designed for this purpose.	• Write code to control and monitor models or products.

Essential Objective: To master practical skills (construction)			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Skills	• Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.	• Strengthen materials using suitable techniques.	• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).

Knowledge		• Choose suitable techniques to construct products or to repair items.	

Essential Objective: To master practical skills (mechanics)			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Skills	• Create products using levers, wheels and winding mechanisms.		• Use innovative combinations of electronics (or computing) and mechanics in product designs.
Knowledge		• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	• Convert rotary motion to linear using cams.

Essential Objective: To design, make, evaluate and improve			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Skills	• Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design.	• Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design.	• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and

			computer aided designs to represent designs.
Knowledge		• Use software to design and represent product designs.	•

Essential Objective: To take inspiration from design throughout history			
	MILESTONE 1 - End of Year 2	MILESTONE 2 - End of Year 4	MILESTONE 3 - End of Year 6
Knowledge	• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created.	• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work.	• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.

Yr. 3 Spring 1 Seasonal food Knowledge Organiser

Essential Objectives:

- To master practical skills (foods)
- To design, make, evaluate, and improve.

Key vocabulary

Hygienic – staying safe by keeping clean and sanitary.

Edible – Fit to be eaten.

Balanced diet a diet consisting of a variety of different types of food and providing proper amounts of the nutrients necessary for good health.

Grown- naturally developed in size.

Frozen- having turned into ice through extreme cold.

Fresh Food – food that is not preserved or processed.

Tinned – Food that is kept in a tin can.

Processed- Food that has been changed in preparation.

Seasonal- food that is ready to eat at a certain season.

Ingredients- food that is combined to make a certain dish.

Harvested- Food that has been gathered.

Taste – the sensation of flavour perceived in the mouth.

Sweet- food that has a sugary taste.

DT KNOWLEDGE

Explain the benefits and issues surrounding seasonal foods.

Understand how to prepare food hygienically and explain the importance of food safety.

Name fruits which are grown in Britain and explain why they are suited to our climate and weather. Explain how we are able to buy and taste all fruits all year round.

Explain the purpose of each part of a fruit tart.

Know how to design a product against a design brief.

Know how to prepare, measure, cut and assemble ingredients for making a fruit tart.

To know how to evaluate a product against a design brief.

DT SKILLS

Prepare ingredients hygienically using appropriate utensils.

Measure ingredients to the nearest gram accurately.

Follow a recipe.

Assemble or cook ingredients.

Follow a design brief.

Design, make and evaluate

Cross curricular knowledge links:

PSHE – Balanced diet.

PE – Healthy living and the benefits of exercise.

Link From	Link To
KS1 - Understand where food comes from. Prepare some simple healthy dishes.	**Y4 -** Making a food product from a European country.

Yr 5 Spring 1 Tudor Cushions Knowledge Organiser

Essential Objectives:

- To master practical skills (materials).
- To design, make, evaluate and improve.
- To take inspiration from design throughout history.

KNOWLEDGE

- Understand the themes within Tudor fashion.
- Know a variety of embellishment techniques.
- Know the main stitch types to use and how to leave a seam allowance.
- Understand how to design a product for a particular user.
- Join textiles with a combination of sticking techniques.

SKILLS

Design

Thread a needle

Knot the thread

Stitching/ sewing skills

Cutting

Select appropriate materials fit for purpose and explain choices

Finishing

Evaluating

Key vocabulary

Functionality – Does it fit the purpose?

Hem – Fabric that's folded over and sewn

Seam – The line of sewing

Running – The way of stitching in a line

Allowance – Extra material that allows room for the seam

Finishing – Making sure your sewing is finished properly

Fabric – Material used to make the cushion

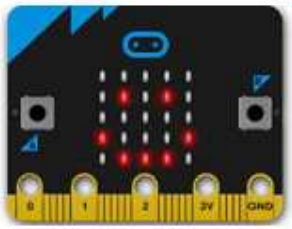
Link From	Link To
Y4 – Previous sewing in year 4 – Money Pouches	Year 6 – Hokusai Embellishment hessian

Cross curricular knowledge links:

History- To use original ways to present information from the past.

To give a broad overview of life in Tudor Britain

Yr 6 Spring DT Micro bit Knowledge Organiser



KNOWLEDGE

Know how to use CAD to control a product.

Know the flow of a program and use algorithms in a project.

Create a code where physical input changes a variable.

Design a code to control a microbit. Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.

Understand how to use code to programme a microbit.

SKILLS

To use a computer programme to control input and output of a product.

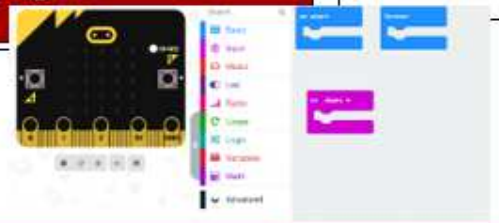
To use a variety of input variables to programme a micro-bit.

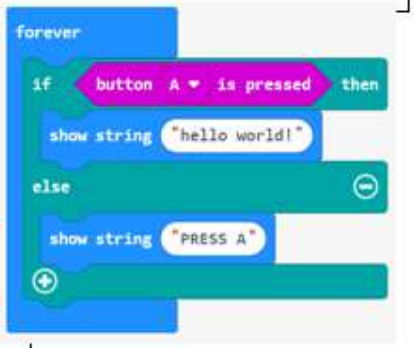
To use a sensory input to control a variable.

Design and write code to create a step counter.

Essential Objectives:

- To master practical skills (coding)
- To design, make, evaluate, and improve.





Key vocabulary

- Input – put data into a system
- Process – a series of actions or steps to reach an end result
- Output – produce data
- USB – connects between computers to store and move data.
- Variable – something that will change
- Condition – criteria the user must meet for something to happen
- If statement – a condition which must be met for something to happen
- Else – the criteria isn't met (a wrong button is pressed for example)
- Random – something happens without a plan/ decision
- MakeCode – a platform for learning how to code
- Algorithm – a process or set of rules
- Emulator – allows one computer system to behave like another
- Microbit – a pocket-sized computer
- Code – programme instructions
- Step counter – something worn on the body which counts how many steps you do
- Flashing – uploading your code to your microbit
- Accelerometer – something that measures how fast something accelerates/ moves
- Debug – finding and removing errors from computer software

Link From	Link To
KS2 - Computer programming in year 3.	KS3 - apply computing and use electronics to embed intelligence in products that respond to inputs and outputs.

Cross curricular knowledge links:

Computing

Vocabulary Progression

MILESTONE 1 - End of Year 2	
down,	surface,
straight,	thinner,
curve,	thicker,
forwards,	corner,
backwards	point,
vehicle,	straight,
wheel,	curved,
axle,	metal,
axle holder,	wood,
chassis,	plastic
body,	circle,
cab	triangle,
assembling,	square,
cutting,	rectangle,
joining,	cuboid,
shaping,	cube,
finishing,	cylinder
fixed,	slider,
free,	lever,
moving,	pivot,
mechanism	slot,
card,	bridge/guide,
masking	card,
tape,	masking
paper fastener,	tape,
join,	paper fastener,
pull,	join,
push,	pull,

MILESTONE 2 - End of Year 4	
Nutrition	hygienic,
Nutrient	edible,
Balanced diet	grown,
Growth.	reared,
Exercise	caught,
Activity	frozen,
Fresh Food.	tinned,
Processed	processed,
Agriculture	seasonal,
Ingredients	harvested
name of products,	Joining process
names of equipment, utensils,	Measure,
techniques and ingredients	Millimetre,
texture,	Precise,
taste,	Accurate,
sweet,	Saw
sour,	user,
hot,	purpose,
spicy,	design,
appearance,	model,
smell,	evaluate,
preference,	prototype,
greasy,	annotated
moist,	sketch,
cook,	functional,
fresh,	innovative,
savoury,	investigate,
healthy/varied diet	label,

MILESTONE 3 - End of Year 6	
triangulation,	authentic,
stability,	user,
shape,	purpose,
join,	design
temporary,	specification,
permanent	design brief,
shell	innovative,
structure,	research,
vertex,	evaluate,
edge, face,	design
length,	criteria,
width,	annotate,
breadth,	evaluate,
capacity,	mock-up,
marking out,	prototype
scoring,	frame
shaping,	structure,
tabs,	stiffen,
adhesives,	strengthen,
joining,	reinforce,
assemble,	corrugating,
accuracy,	ribbing,
material,	laminating,
stiff,	font,
strong,	lettering,
reduce,	text,
reuse,	graphics,
recycle,	decision,

MILESTONE 1 - End of Year 2		MILESTONE 2 - End of Year 4		MILESTONE 3 - End of Year 6	
strong,	planning,	drawing,	Safe,	pour, mix,	button,
base,	investigating	function,	Safety,	rubbing in,	structure,
top,	design,	planning,	Socket,	whisk,	finishing technique,
underneath,	evaluate,	design	wire,	beat,	weakness,
side,	make,	criteria,	simple	roll out,	stiffening,
edge,	user,	annotated	circuit,	shape,	pattern
up,	purpose,	sketch,	parallel circuit,	sprinkle,	stitch,
down,	ideas,	appealing	series circuit,	crumble	seam,
straight,	product,	Battery,	fault,	Bridge,	seam allowance
curve,	investigating,	Batteries,	connection,	span,	button,
forwards,	planning,	Break,	toggle	beam,	strength,
backwards	design,	Bulb,	switch,	cantilever,	innovative,
vehicle,	make,	Bulb holder,	push-to-make switch,	Strength,	annotated sketch,
wheel,	evaluate,	filament,	push-to-break switch,	truss	sensory evaluations ,
axle,	user,	buzzer,	wire,	arch	innovative,
axle holder,	purpose,	Cell	insulator,	cable,	appealing,
chassis,	ideas,	Electricity,	conductor,	Stability,	planning,
body,	design	Electron,	control,	Support,	annotated sketch,
cab	criteria,	Circuit,	program,	Idea,	sensory evaluations
assembling,	product,	Connection,	system,	Experiment	fabric,
cutting,	function	Crocodile clips	input	Joint,	names of fabrics,
joining,	cut,	Current,	device,	Material,	fastening,
shaping,	fold,	Appliance,	output	Design	zip
finishing,	join,	Danger,	device	Evaluate,	Normalizing,
fixed,	fix	Dangerous,	Viking, Helmet,	Improve	Break,
free,	structure,	Electric shock,	Strength	decisions,	Bulb,
moving,	wall,	Mains,	Paper machete Normalizing,	functionality,	
mechanism	tower,	Plug,	Viking, Helmet,		

MILESTONE 1 - End of Year 2		MILESTONE 2 - End of Year 4		MILESTONE 3 - End of Year 6	
		Layers,	Layers,	wire,	buzzer,
		Actuate	Actuate	insulator,	Cell
		Measurement	Measurement	conductor,	Electricity,
		evaluating,	evaluating,	control,	Electron,
		design brief	design brief	program,	Circuit,
		design criteria,	design criteria,	system,	Connection,
		innovative,		input	Crocodile clips
		prototype,		device,	Current,
		user,		output	Appliance,
		purpose,		device	Danger,
		function,		Viking, Helmet,	Dangerous,
		prototype,		Strength	Electric shock,
		design		Paper machete	Mains,
		criteria,		Layers,	Plug,
		innovative,		Actuate	Safe,
		appealing,		Measurement	Safety,
		planning,		evaluating,	Socket,
		annotated sketch,		design brief	wire,
		sensory evaluations fabric,		design criteria,	simple
		names of fabrics, fastening,		innovative,	circuit,
		compartment,		prototype,	parallel circuit,
		zip,		user,	series circuit,
		button,		purpose,	fault,
		structure,		function,	connection,
		finishing technique, strength,		prototype,	toggle
				design	switch,

MILESTONE 1 - End of Year 2		MILESTONE 2 - End of Year 4		MILESTONE 3 - End of Year 6	
				seam,	turret,
				seam allowance,	tracks,
				wadding,	armaments
				reinforce,	pulley,
				right side,	drive belt,
				wrong side,	gear,
				hem,	rotation,
				template,	spindle,
				pattern pieces,	driver,
				name of textiles	follower,
				fastenings used,	ratio,
				pins,	transmit,
			,	needles,	axle,
				thread,	motor,
				pinking shears,	circuit,
			,	fastenings,	switch,
				Design,	circuit
				Motif,	diagram,
				Running stitch,	annotated drawings,
				Tacking,	diagrams,
				Textiles	mechanical system,
			,	Materials,	input,
				Thread,	process,
				tank	output
				electrical system,	vehicle,
				exploded	wheel,
				Makecode	turret,
				Input	accelerometre
				Process	Algoritm
				Output	Step counter
				Flashing	test
				USB Selection	debug
				Condition	
				If then else	
				Variable	
				Random	,
				Selection	
				sensing	

Assessment Criteria

DESIGN AND TECHNOLOGY - MILESTONE 2 Essential Objective: To master practical skills			
KEY INDICATORS	BASIC (Y3 WA, Y4 WT)	ADVANCING (Y3 GD, Y4 WA)	DEEP (Y4 GD)
Food: Prepare ingredients hygienically using appropriate utensils.	When reminded, appropriate utensils are chosen to safely and hygienically prepare food.	Appropriate utensils are generally chosen to safely and hygienically prepare food.	Appropriate utensils are chosen to safely and hygienically prepare food, with clear explanations for choices made.
Food: Measure ingredients to the nearest gram accurately.	With support from a teacher, accurate gram, is experienced.	There is generally accurate measurement to the nearest gram.	There is accurate measurement to the nearest gram using a variety of scales.
Materials: Cut materials accurately and safely be selecting appropriate tools.	When reminded, appropriate tools are chosen to safely cut materials.	Appropriate tools are generally chosen to safely cut materials.	Appropriate utensils are chosen to safely cut materials, with clear explanations for the choices made.
Materials: Measure and mark out the nearest millimetre.	With support from a teacher, accurate measurement and marking, to the nearest millimetre, is experienced.	There is generally accurate measurement and marking to nearest millimetre.	There is accurate measurement and marking to the nearest millimetre using a variety of scales.
Materials: Apply appropriate cutting and shaping techniques that include cuts within perimeter of material (such as slots or cut-outs).	With support from a teacher, appropriate techniques are used to cut and shape materials.	Appropriate techniques are generally chosen to cut and shape materials.	Appropriate techniques are chosen to cut and shape materials, with clear explanations for the choices made.
Materials: Select appropriate joining techniques.	When reminded, appropriate joining techniques are used.	Appropriate joining techniques are generally selected and used well.	Appropriate joining techniques are selected and used to good effect, with reasons for choices clearly explained.
Textiles: Understand the need for a seam allowance.	When demonstrated by a teacher, and support provided, appropriate allowances are made when joining fabrics.	Generally, appropriate allowances for joining fabrics are used.	Accurate and well-planned allowances for joining fabrics are used.

Textiles: Join textiles with appropriate stitching.	When demonstrated by a teacher, appropriate stitching is attempted with some good effects.	Generally, stitching is appropriate to the product and effective.	Confident and carefully chosen stitching, suitable for the product's purpose, is well executed.
Textile: Join textiles with appropriate techniques to decorate textiles.	When reminded, appropriate techniques are used to decorate textiles.	Generally, interesting and appropriate techniques are used to decorate textiles.	Excellent choices of appropriate techniques provide interesting and eye-catching textile decorations.
Electricals and electronics: Create series and parallel circuits.	When reminded, knowledge of science is applied to create series and parallel circuits in products.	Generally, science knowledge is applied well to create series and parallel circuits in products.	Science knowledge is readily applied to good effect in creating series and parallel circuits in products.
Construction: Choose suitable techniques to construct products or to repair items.	When reminded by a teacher, suitable techniques are used to construct products or repair items.	Suitable techniques are generally used to construct or repair items.	Suitable techniques are chosen and justified when constructing or repairing items.
Mechanics: Use scientific knowledge of transference of forces to choose appropriate mechanisms for a product (such as lever, winding mechanisms, pulleys and gears).	When reminded, knowledge of science is applied to creating mechanism products.	Generally, knowledge of science is applied to creating mechanism products.	Knowledge of science is readily applied when creating mechanism products.

DESIGN AND TECHNOLOGY - MILESTONE 2 Essential Objective: To design, make, evaluate and improve			
KEY INDICATORS	BASIC (Y3 WA, Y4 WT)	ADVANCING (Y3 GD, Y4 WA)	DEEP (Y4 GD)
Design with purpose by identifying opportunities to design.	During structured activities, opportunities for design are realised.	Generally, there is a good understanding of opportunities for design.	Excellent examples of suggestions for design show an in-depth understanding of the need for design.
Make products by working efficiently (such as by carefully selecting materials).	When supported by a teacher, appropriate materials are selected.	Planning of workflows and careful selection of materials means work is generally carried out efficiently.	Very efficient workflows and well-reasoned choices of materials make work very efficient.
Refine work and techniques as work progresses, continually evaluating the product design.	When encouraged, techniques are refined throughout a project to improve the design.	Generally, designs are evaluated and refined throughout a project,	Designs are continually evaluated and improved throughout a project, resulting in high-quality products.

DESIGN AND TECHNOLOGY - MILESTONE 2 Essential Objective: To take inspiration from design throughout history			
KEY INDICATORS	BASIC (Y3 WA, Y4 WT)	ADVANCING (Y3 GD, Y4 WA)	DEEP (Y4 GD)
Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for design.	With support from a teacher, some of the most notable designers' work is examined to provide inspiration for ideas.	A growing knowledge of a range of notable designers is used to provide inspiration for designs.	An in-depth knowledge of some notable designers provides inspiration and ideas for designs.
Improve upon existing designs, giving reasons for choices.	With support from a teacher, existing designs are evaluated and improvements made.	Generally, some opportunities for improving, existing designs are made, giving reasons for choices.	Many good opportunities for developing existing designs are noticed and acted upon.

Design and Technology

Milestone 3

DESIGN AND TECHNOLOGY - MILESTONE 3 Essential Objective: To master practical skills			
KEY INDICATORS	BASIC (Y5 WA, Y6 WT)	ADVANCING (Y5 GD, Y6 WA)	DEEP (Y6 GD)
Food: Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).	There is some awareness of the principles and practices of safe food storage and handling.	Science knowledge is applied to the safe storage and handling of ingredients.	A thorough scientific understanding of micro-organisms is rigorously applied to the practices of storage and handling of ingredients.
Food : Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.	When reminded, mathematical knowledge is applied to accurately calculate ratios of ingredients.	Mathematical knowledge is generally applied to calculate ratios of ingredients.	Knowledge of mathematics is readily applied to calculate ratios of ingredients.
Food: Demonstrate a range of baking and cooking techniques.	When guided, a range of baking and cooking techniques is demonstrated	A developing range of baking and cooking techniques is demonstrated.	A good range of baking and cooking techniques is demonstrated.
Food: Create and refine recipes, including ingredients, methods, cooking times and temperatures.	With support from a teacher, a range of recipes are created.	A developing range of interesting recipes is created.	A wide repertoire of recipes with interesting combinations of ingredients is created.
Materials: Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).	There are some good examples of precision cutting.	There are many good examples of precisions cutting using a growing range of cutting implements.	There are widespread examples of precision cutting using a wide variety of cutting implements.

Materials: Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).	When reminded, the qualities of materials are considered when selecting tools.	The properties of materials are generally considered in choosing tools.	All in-depth understanding of the properties of materials is used to carefully select appropriate tools.
Textiles: Join textiles with combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).	There are some examples of effective joins.	There I a growing range of examples of effective joining techniques that show control and some precision.	There is a wide range of very effective joining techniques that show a high level of precision and control.
Textiles: Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).	There are some good examples of art skills being used to provide decoration.	There are many good examples of art skills being applied to good effect to provide visual and tactile decoration.	Well-chosen art skills are used to create eye-catching decoration.
Electricals and electronics: Create circuits using electronics kits that employ a number of components (such as LEDs resistors, transistor and chips).	With support, and reminders of science knowledge, a range of circuits I created and used in products.	Science knowledge is generally applied to the design process to create products that employ a range of electronic components.	Science knowledge is readily applied to the design process, creating high
Construction: Develop a range of practical skills to create products and repair items (such as cutting, drilling and screwing, nailing, gluing and sanding).	With support, a range of practical skills are emerging to help create or repair products.	A growing range of practical skills are used effectively to make or repair products.	A wide range of practical skills are put to very effective use to make or repair a wide variety of products.
Mechanics: Convert rotary motion to linear using cams.	With support, cams are created.	A range of differently shaped cams are created.	Combinations of differently shaped cams are used to create interesting and useful movement.
Mechanics: Use innovative combinations of electronics (or computing) and mechanics in product design.	With support, combinations of design components are used in product designs.	There is some interesting experimentation with combinations of design components in product designs	There are some innovative combinations of design components in product designs.

DESIGN AND TECHNOLOGY - MILESTONE 3 Essential Objective: To design, make, evaluate and improve			
KEY INDICATORS	BASIC (Y5 WA, Y6 WT)	ADVANCING (Y5 GD, Y6 WA)	DEEP (Y6 GD)
Deign with the user in mind, motivated by the service a product will offer (rather than simply for profit).	With guidance, products are designed with some reference to user experience.	Generally, the user experience is used as a rationale for design choice.	The experience of the user drives the design process. There are many excellent examples and explanations of how choices improve the user experience.
Make products through stages of prototypes, making continual refinements.	With support, prototypes are made and later developed.	Generally improvements are continual throughout the making process, with initial prototypes often changed radically through a number of refinements.	Initial prototypes and alternative designs are thoroughly explored and explained. Refinements are continually made throughout the making process.
Ensure products have a high-quality finish, using art skills where appropriate.	When reminded, a high quality finish is achieved by applying art skills.	Art skills are generally applied and along with attention to detail, create a high-quality	Impeccable attention to detail and the extremely effective application of art skills create a professional quality finish.

DESIGN AND TECHNOLOGY - MILESTONE 3 Essential Objective: To take inspiration from design throughout history			
KEY INDICATORS	BASIC (Y5 WA, Y6 WT)	ADVANCING (Y5 GD, Y6 WA)	DEEP (Y6 GD)
Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.	With support, elements of design from notable designers are incorporated into designs.	Generally, there are some well-reasoned choices for climbing elements from a range of designers.	An in-depth knowledge of some designers' work is reflected in some striking designs. The rationale and background to design ideas are explained thoughtfully.
Create innovative designs that improve upon existing products.	There are some good examples of designs that improve upon existing products.	There is a growing range of examples of designs that improve upon existing products.	There are some notable examples of how the design of existing product has been greatly improved.
Evaluate the design of products so as to suggest improvement to the user experience.	When reminded, evaluations are carried out throughout and at the end of the design process.	Evaluations are generally ongoing and thorough. They relate to the user experience.	The user experience drives critical self-evaluation and helps to identify current and future improvements.