Marston Moreteyne VC School

Design Technology (DT) Coverage and Progression

Children will become independent, creative problem solvers and thinkers as individuals and part of a team. DT enables them to identify needs and opportunities and to respond to them by developing a range of ideas and by making products and systems. Through this subject children combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industry. This allows them to reflect on and evaluate past and present technology, its uses and impacts.

Pre-School objectives linked to DT

The environment allows children to build with blocks and construction kits of various sizes, within the creative area children have access to various resources that allow them to build and explore. Children are encouraged to think creatively and use resources available in original ways.

Reception objectives linked to DT

In Early Years DT is explored though the umbrella of 'Expressive Art and Design" and "Understanding the World". During Acorns the children develop essential basic skills in DT which prepares them for their transition into Year 1. We provide many opportunities for the children to carry out D&T related activities across all areas of learning. By the end of Early Years, it is expected that the children will be able to construct with a purpose in mind, use simple tools and techniques competently and appropriately. Build and construct with a wide range of objects and be able to select appropriate resources and adapt their work when necessary. Continuous Provision: Making Area Fixing & Fastening Junk Modelling Cutting Playdough Make & Manipulate Construction Kit Lego Blocks Tyres Tubes Guttering

Strand	Year 1	Year 2	Year 3	Year 4
National Curriculum for DT (DfE 2013) shows coverage for the End of each Key Stage (up to Y6)				
Design	Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology		Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	
Make	Select from and use a range of tools and equipment to perform practical tasks*. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics		Select from and use a wider range of tools and equipment to perform practical tasks*. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	

Evaluate	Explore and evaluate a range of existing products and evaluate their ideas and products against design criteria.	Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.
Technical Knowledge	Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms in their products.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products***. To understand and use electrical systems in their products. To apply their understanding of computing to program, monitor and control their products
Cooking and Nutrition	Use the basic principles of a healthy and varied diet to prepare dishes. To understand where food comes from	Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

* cutting, shaping, joining and finishing **levers, sliders, wheels and axles *** gears, pulleys, cams, levers and linkages

YEAR ONE	Strand	Children are taught to…	Topic	Lesson coverage
	Design	Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups	**Superhero's**	• Mask and cape designing, what will your superhero wear?
			Memory Box	• Wedding outfits, what make it special?
			Enchanted Woodland	• Woodland puppets for story- telling
	Make	Select from and use a range of tools and equipment to perform practical tasks. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	**Bright Lights, Big City**	• Using recycled material to make London landmarks • Make a souvenir- magnets-using shrinking material cooked in the oven
			Memory Box	• Celebration cards • Keepsake boxes
			Rio De Vida	• Decorative headdresses for the carnival. Make Carnival flags and bunting. • Musical Instruments for the Samba Band!
			Dinosaur planet	• Dinosaur museum
			Superhero's	• Become a superhero…make a mask and cape, (including an evaluation of own work)
			Enchanted Woodland	• Using simple joining techniques to make puppets. (including an evaluation of own work) • Den making in the woods
	Evaluate	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.	**Bright Lights, Big City**	• What makes a good souvenir? Explore a selection of examples
			Enchanted Woodland	• Features of puppets, what do they need to work effectively? • Who's Den was successful and why?
			Rio De Vida	• Carnival Parade, what makes a successful headdress, evaluate own and others
	Technical Knowledge	Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms in their products.	**Superhero's**	• Creating a vehicle for a Superhero- wheels and axles
			Enchanted Woodland	• Den making problem solving
			Bright Lights, Big City	• 3D models of London Landmarks using construction kits and recycled materials
	Cooking and Nutrition	Use the basic principles of a healthy and varied diet to prepare dishes. To understand where food comes from	**This is covered in 5 different topics**	• Dinosaur Biscuits, Picnic food, celebration cakes, Superfood salad, woodland Treats- Discussions about where food comes from happens in all lessons as well as daily healthy snack time (fruit and vegetables)

YEAR TWO	Strand	Children are taught to…	Topic	Lesson coverage
	Design	Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups	**Towers, Tunnels and Turrets**	• Make a fortress for the three little pigs , castle building using recycled materials • Castle drawbridges • Slider cards for Easter
			Scented Garden	• Designing and making pizza boxes from nets, bookmarks and coaters
	Make	Select from and use a range of tools and equipment to perform practical tasks. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	**Scented Garden**	• Scented playdough • Pressed flower book marks and Binka coasters (different stiches for design)
			Towers, Tunnels and Turrets	• Building castles with recycled materials (including a lever drawbridge) • Who can make the tallest tower challenge • Marshmallow and spaghetti bridges
			Wriggle and Crawl	• Make a minibeast from various materials
			Land Ahoy!	• Making boats to carry pirate cargo
				• Easter, Christmas, Mother's Day Cards through the year
	Evaluate	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.	**Movers and Shakers**	• Columbus' ships and Isambard Kingdom Brunel designs
			Towers, Tunnels…	• Evaluate different castle lever systems then own our structures (castles and towers)
			Land Ahoy	• Why do boats float, evaluate own and structures
			Scented Garden	• Bookmarks and coasters, functions needed to be fit for purpose.
	Technical Knowledge	Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms in their products.	**Towers, Tunnels and Turrets**	• Making spaghetti bridges stronger, how?
				• What materials and techniques do we need to make floating boats?
				• How do pulleys work in real life, make a castle with a drawbridge
				• Make an Easter card with a sliding chick
	Cooking and Nutrition	Use the basic principles of a healthy and varied diet to prepare dishes. To understand where food comes from	**This is covered in 5 different topics**	• Pizza with own grown ingredients, sorting and grouping food (science link), making flapjacks

YEAR THREE

Strand	Children are taught to…	Topic	Lesson coverage
Design	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	**Mighty Metals**	• Parachute Investigation – Plan and make mini parachutes • Design and make a magnetic board game • Design and make a robot (friend for Iron Man) – Innovate Task
		Tremors	• Develop and make a seismograph to record the magnitude of an earth quake • Design and build a sturdy shelter to protect from a volcano eruption.
		Tribal Tales	• Design and make and ancient hunting tool. • Draw and plan a monument to celebrate seasonal change from an aerial perspective • Design Iron Age jewellery using given criteria • Design a settlement and an outfit for the tribe – planning the tools and equipment needed to make it – Innovate
		Gods and Mortals	• Develop a design for a pair of wings for Icarus and Daedalus – thinking about the materials and tools required • Design a decoy vessel that soldiers are able to get in and out of and that can move • Design own box based on Pandora's box
		Scrummdiddly-umptious	• Design packaging for sweets or chocolate • Create an idea for a healthy alternative treat • Design own smoothie- deciding upon own ingredients
Make	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, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	**Mighty Metals**	• Parachute Investigation – Plan and make mini parachutes • Design and make a magnetic board game • Construct a robot (Friend for Iron Man) selecting own materials and tools and thinking about joining technique - Innovate
		Tremors	• Develop and make a seismograph to record the magnitude of an earth quake • Design and build a sturdy shelter to protect from a volcano eruption
		Tribal Tales	• Make a Woolly Mammoth using recycled materials. • Make an ancient hunting tool that meets the needs of a Stone Age hunter-gatherer. • Make Iron Age jewellery using clay • Make a settlement – select own materials and tools – Innovate Task
		Gods and Mortals	• Create a pair of wings for Icarus and Daedalus – selecting own materials and tools. • Make a trojan horse following their own design. • Make own version of Pandora's box.
		Scrummdiddly-umptious	• Make packaging for sweets or chocolate. • Make a healthy alternative treat. • Make own smoothie – following own recipe.
		Ongoing	• Easter, Christmas, Mother's Day Cards through the year

	Evaluate	Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.	**Mighty Metals**	• Evaluate magnetic board game • Evaluate Robot – suggest improvements and how to implement them- Innovate Task
			Tribal Tales	• Evaluate Monument – what worked well, what improvements could be made
			Scrummdiddly-umptious	• Test and evaluate a range of different pre-made smoothies • Evaluate the packaging of smoothies and other sweets and chocolate bar wrappers • Evaluate flavour, texture, etc of own smoothie
	Technical Knowledge	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. Apply their understanding of computing to program, monitor and control their products.	**Mighty Metals**	• Explore how levers and pneumatics work • Add embellishments to robot including circuits - Innovate
			Tremors	• What materials and techniques are needed to build a sturdy shelter?
			Tribal Tales	• Decide on materials, tools and strengthening techniques to build a monument
			Gods and Mortals	• Ensure wings for Icarus and Daedalus are strong enough for their purpose • Add mechanical systems such as wheels and pulleys to their decoy vehicle
	Cooking and Nutrition	Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	**Scrummdiddly-umptious**	• Tasting of sweet treats (healthy alternatives) • Research alternatives to brownies/cookies • Design and make a healthy alternative treat • Taste a range of smoothies • Design, make, taste and evaluate own smoothie

	Strand	Children are taught to…	Topic	Lesson coverage
YEAR FOUR	Design	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	**I am Warrior**	• Use an annotated sketch to design a roman Standard • Design and create a Roman shield for an auxiliary or a legionary based on research • Design and make a Roman plaque to celebrate victory
			Road Trip UK	• Research and then design a UK landmark • Create an annotated sketch of the landmark they are going to make
			We'll Meet Again	• Research and then design a bomb shelter • Create an annotated drawing of shelter
			Burps, Bottoms and Bile	• Design a Gignata-gut using an annotated gut
			Blue Abyss	• Research both submarines and moving propellers • Design a submarine that can propel itself through the water • Use exploded diagram to show design of submarine
			Potions	• Design and make a potion bottle
	Make	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, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	**I am Warrior**	• Make a Roman helmet based on historical research • Make a Roman standard, selecting materials and tools • Make a Roman shield based on own design • Build a Roman Road using given criteria • Use clay to create own roman plaque based on design
			Road Trip UK	• Make a UK landmark using junk materials – based on own designs
			We'll Meet Again	• Make do and mend – use different techniques to upcycle and mend items • Make a toy using 'make do and mend' method • Make a shelter using chosen materials, tools and techniques
			Burps, Bottoms and Bile	• Model the digestive system • Make a wearable digestive system • Make a Giganta-gut as a group choosing and selecting materials, tools and techniques
			Blue Abyss	• Create a submarine that propels through the water
			Potions	• Follow instructions to make a bath bomb • Make a potion bottle out of clay
			Ongoing	• Easter, Christmas, Mother's Day Cards through the year

	Evaluate	Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.	**I am Warrior**	• Evaluate Roman Shield whilst working and make modifications • Evaluate Roman Shield considering what went well, what could be improved • Investigate and identify the design features of a Roman road
			Road Trip UK	• Evaluate existing landmarks • Evaluate Landmark and make adjustments and modifications whilst working • Evaluate final landmark – what went well, what could be improved
			We'll Meet Again	• Evaluate shelters whilst making so as to modify so that it is fit for purpose • Peer evaluation of finished shelters
			Burps, Bottoms and Bile	• Evaluate how the model digestive system works
			Blue Abyss	• Find out about the inventor Cornelius Drebbel and the materials he used to build the first submarine • Find out about Jaques Cousteau and how his invention of the aqua lung changed the exploration of the oceans • Investigate and analyse submarines throughout history • Self and peer evaluation of completed moving submarine
	Technical Knowledge	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. Apply their understanding of computing to program, monitor and control their products.	**I am Warrior**	• Create a Roman standard and a shield, fit for purpose • Use correct techniques for scoring and joining clay
			Road Trip UK	• Make a UK landmark using junk materials thinking carefully about how to strengthen and reinforce their structures
			We'll Meet Again	• Create a spy-catcher using mechanical systems and electrical circuits
			Blue Abyss	• Build a submarine that is able to propel itself through the water
			Potions	• Use correct techniques for scoring and joining clay
			Ongoing	• Making Cards with moving parts – Mother's Day – Pulleys
	Cooking and Nutrition	understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	**Road Trip UK**	• Tasting and evaluating foods from around the UK • Recognise where each food comes from in the UK and the seasonal differences • Prepare, cook and taste Bedfordshire Clangers • Design a healthy packed lunch
			We'll Meet Again	• Make WW2 food to celebrate VE day using food produced locally – thinking about rationing and where foods would have been grown, etc • Tasting and evaluating WW2 foods
			Burps, Bottoms and Bile	• Design and make a healthy snack or packed lunch • Compare healthy snacks or packed lunches