Tywardreath School

Design Technology Overview
Key Knowledge, Skills and Vocabulary
Year A

What makes Tywardreath Curriculum unique? A clear focus on local, national and global communities, developing skills for life, promoting a respect for our environment, celebrating responsible citizens and providing opportunities to debate and reflect.

	Year 1 and 2	Year 3 and 4	Year 5 and 6
Autumn 1	Amazing Discoveries, Amazing People	Romans – Helpful Invaders?	How Mysterious were the Maya?
		Mechanisms –Levers and linkages	
National Curriculum Objectives		Pupils should be taught to: - generate, develop, model and communicate their ideas through discussion, annotated sketches, - use research and develop design criteria to inform the product design -select from and use a wider range of tools and equipment to form practical tasks accurately -select from and use a wider range of materials and components for construction according to their functional properties and aesthetic properties. - Investigate a range of existing products - evaluate their ideas and product against their own design criteria and consider the views of others to improve their work	
Key Knowledge		- To be able to make and use a simple lever to create movement (eg: a Roman catapult) -To use a saw safely and accurately to cut wood to make base for catapult	
Key Skills		- Use simple levers and linkages to create movement - Select appropriate tools - Alter product after checking to make it better -To know which tools are appropriate for different tasks to be able to safely use them -To be able to explain how I can improve something.	
Sequence of Learning		Can I use simple levers and linkages to create movement ? Can I select appropriate tools and use them safely? Can I alter my product after checking to make it better? Can I explain how I can improve something?	
Key Vocabulary		Ballista, engineering, design, forces, push, pull, mechanism, function, model, saw, plane	

	Year 1 and 2	Year 3 and 4	Year 5 and 6
Autumn 2	Where Are We?	How can I find my way?	How Amazing are the Americas?
	Food		Food
National Curriculum Objectives	Pupils should be taught to: - use the basic principles of a healthy and varied diet to prepare dishes - understand where food comes from. -Begin to understand some food preparation tools, techniques and processes.		Pupils should be taught to: -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.
Key Knowledge	Focus on Cornwall as a locality. -Know what foods Cornwall is famous for -Know what foods are eaten in Cornwall -Know what different flavour scones are available -Give an opinion as to which one is preferred and why		-Know what ingredients are needed to make a pasty -Know the techniques for making pastry -Know how to prepare chosen ingredients for pasty -Make a pasty using ingredients linked to produce grown in North America and/or Cornwall
Key Skills	-Have own ideas and opinions. -Explain purpose of product. -Plan own product -describe textures -wash hands & clean surfaces -think of interesting ways to decorate food -say where some foods come from, (i.e. plant or animal) -describe differences between some food groups (i.e. sweet, vegetable etc.) -discuss how fruit and vegetables are healthy -cut, peel and grate safely, with support		-explain how to be safe / hygienic and follow own guidelines -present product well - interesting, attractive, fit for purpose -understand food can be grown, reared or caught in the UK and the wider world -describe how recipes can be adapted to change appearance, taste, texture, aroma -explain how there are different substances in food / drink needed for health -prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source - use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
Sequence of Learning	Can I share my ideas and opinions? Can I explain the purpose of my product? Can I plan my own product Can I wash my hands & clean surfaces ? -Can I think of interesting ways to decorate food? Can I say where some foods come from ? (i.e. plant or animal)		Can I present product well? Can I describe how recipes can be adapted to change appearance, taste, texture, and aroma? Can I explain how there are different substances in food / drink needed for health?

	Can I describe differences between some food groups (i.e. sweet, vegetable etc)? Can I discuss how fruit and vegetables are healthy? Can I cut, peel and grate safely, with support?		Can I prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source? Can I use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking with growing confidence?
Key Vocabulary	Planning, make, purpose, ideas, product, peel, grate,		peeling, chopping, slicing, grating, kneading and baking, appearance, taste, texture, aroma, hygienically

	Year 1 and 2	Year 3 and 4	Year 5 and 6
Spring 1	The Lights of London	What did the Anglo-Saxons do for us?	Were the Vikings Victorious?
	Materials and Structures		Textiles
National Curriculum Objectives	Pupils should be taught to: -Select from and use a range of materials and components, including fabrics according to their characteristics -Build a structure, exploring how it can be made stronger, stiffer and more stable. -To adapt their construction.		Pupils should be taught to: -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 -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, textiles according to their functional properties and aesthetic qualities
Key Knowledge	-To choose materials to build a model house designed around the buildings in London in 1666. -Build a structure, exploring how it can be made stronger, stiffer and more stable. -Begin to adapt their construction by reflecting on its appearance, strength and stability -Know how to suggest changes for next time		-To understand that different styles and techniques can be used to produce an item from materials.
Key Skills	Design, Make, Evaluate -begin to measure and join materials, with some support -describe differences in materials -suggest ways to make material/product stronger -join materials in different ways -use joining, rolling or folding to make it stronger -use own ideas to try to make product stronger		think about user's wants/needs and aesthetics when choosing textiles -make a prototype -use a range of joining techniques -think carefully about what would improve product -understand that a single 3D textiles project can be made from a combination of fabric shapes.

Sequence of Learning	Can I begin to measure and join materials, with some support? Can I describe differences in materials ? Can I suggest ways to make material/product stronger? -Can I join materials in different ways? Can I use joining, rolling or folding to make my product stronger? Can I use own ideas to try to make product stronger?		Can I create a design criteria? (Viking tunic) Can I make a prototype? Can I use a range of joining techniques? Can I explain what would improve my product? Can I understand that a single 3D textiles project? Can be made from a combination of fabric shape?
Key Vocabulary	Construct, join, explore, material, strong , weak, stretch , bend, stable		Sew, materials, evaluate, design, compare and contrast, influences, Technique, investigate , replicate

	Year 1 and 2	Year 3 and 4	Year 5 and 6
Spring 2	Does it rain in Kenya?	Why Do People Live Near Volcanoes?	Does Alaska Need Saving?
		Food	
National Curriculum Objectives		Pupils should be taught to: -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, know where, how a variety of ingredients are grown, reared, caught + processed.	
Key Knowledge		-Describe a variety of bread recipes -Know what ingredients make up dough -Know that there are different types of dough - Understand the process of making dough -Make pizza	
Key Skills		-carefully select ingredients -use equipment safely -make product look attractive -begin to understand food comes from UK and wider world -prepare and cook some dishes safely and hygienically -grow in confidence using some of the following techniques: mixing, spreading, kneading and baking -describe purpose of product - follow a given design criteria -create a plan which shows order, equipment and tools -select suitable tools/equipment, explain choices; begin to use - select appropriate materials, fit for purpose. - work through plan in order - begin to assemble and combine materials and components with some accuracy	
Sequence of Learning		Can I carefully select ingredients? Can I use equipment safely? Can I make product look attractive? Can I begin to understand that food comes from UK and wider world? Can I prepare and cook some dishes safely and hygienically? Am I growing in confidence using some of the following techniques: mixing, spreading, kneading ,baking? Can I describe purpose of product and follow a given design criteria? Can I create a plan which shows order, equipment and tools? Can I begin to assemble and combine materials and components with some accuracy?	
Key Vocabulary		Knead, bake, dough, ingredients, recipe, process, Italy, toppings, sourdough, pizza	

	Year 1 and 2	Year 3 and 4	Year 5 and 6
Summer 1	Do I know the History on My Doorstep?	Who Had the Power?	Crime and Punishment- Who Done it?
		Materials and Structures	
National Curriculum Objectives		Pupils should be taught to: -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, -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, according to their functional properties and aesthetic qualities	
Key Knowledge		Know how water wheels work	
Key Skills		-measure carefully to avoid mistakes -attempt to make product strong -continue working on product even if original didn't work -make a strong, stiff structure, made fit for purpose -discuss by whom, when and where products were designed	
Sequence of Learning		Can I define, refine and suggest solutions to a problem? Can I plan my design? Can I test my ideas? Can I improve on my original idea? Can I make my final product? Can I test and evaluate my final product?	
Key Vocabulary		Construction, product, material, instrument, assembly, function, visuals, sound, tone, hollow, solid, scale	

	Year 1 and 2	Year 3 and 4	Year 5 and 6
Summer 2	Fire and Ice	Is Iceland a Frozen Land?	What Journey Does a River Take?
	Mechanisms – Wheels and Axles		Mechanisms – Hydraulics and Pneumatics
National Curriculum Objectives	Pupils should be taught to: -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. -Select from and use a range of tools and equipment to perform practical taks -Select from and use a wide range of materials and components, including construction materials. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.		Pupils should be taught to: -Understand and use mechanical systems in their products [for example, hydraulics, pneumatics, gears, pulleys, cams, levers and linkages]
Key Knowledge	-Know how to make a simple push/pull toy for a story character to sit in/ on e.g. wind powered skate board, wheeled chair, wheel barrow. (link to English text)		-Explain what a design brief is and the importance of meeting criteria. -Know what a mechanical system is. -Explain what hydraulics and pneumatics are. -Know how to make a 'moving product' using hydraulics and pneumatics
Key Skills	-Begin to understand how to use wheels and axles. -Measure, cut and join materials and explain how they did it.		-refine product after testing, considering aesthetics, functionality and purpose -incorporate hydraulics and pneumatics -be confident to try new / different ideas
Sequence of Learning	Can I begin to understand how to use wheels and axles? Can I measure, cut and join materials? Can I explain how I joined my materials? Can I make a simple push/pull platform for a toy character to sit on?		Can I explain a design brief? Can I explain how hydraulics and pneumatics work? Can I use hydraulics/pneumatics to create movement? Can I refine my product after testing? Can I evaluate my product in terms of aesthetics, function and purpose?
Key Vocabulary	Wheel, axle, vehicle, chassis, body , cab, assembling, cutting, joining, shaping, finishing, , fixed		Design brief, gears, pulleys, cams, levers, linkages, hydraulics, pneumatics, evaluate, aesthetics, function, purpose