Withnell Fold Primary School

DESIGN & TECHNOLOGY KEY LEARNING AND KNOWLEDGE



YEAR A

	AUTUMN 1 (ASTRONAUT ADVENTURES)	SPRING 1 (TRANSGLOBE EXPLORERS)	SUMMER 1 (WALKING THE AMAZON)
YEAR 5 & 6			
	AUTUMN 2 **(VIKINGS: WE DIDN'T WEAR HORNED HELMETS!)**	**SPRING 2** **(ZUES; KINGS OF GODS AND HUMANS)**	**SUMMER 2** **(MUSIC FOOD FEST)**
	Textiles- using patterns and combining fabrics ***Pupils should be taught to:*** ▫ Develop a simple design specification to inform the design of innovative, functional, appealing products that are fit for purpose- running stitch, cross stitch, spoke stitch. ▫ To utilise and develop a range of different stiches to both join and embellish fabric. ▫ Plan an order of methodical work, choosing appropriate materials, tools and techniques. **Linked Vocabulary**- material, fabric, stitch, running stitch, cross stitch, spoke stitch, tack, needle, thread, embroider, join, applique, add, tools, fix, embellish, process, evaluate, design, develop, brief		**Explore, analyse and prepare food from other cultures** ***Pupils should be taught to:*** ▫ Understand that different cultures and nationalities enjoy a range of traditional dishes that differ from country to country. ▫ Create and refine recipes that include a range of different ingredients. ▫ Know that food is grown, reared (such as and caught in the UK, Europe and the wider world. ▫ Begin to understand that seasons may affect the food available. ▫ Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. **Linked Vocabulary**- recipe, ingredient, grown, harvested,

			cultivated, reared, caught, cut, slice, dice, peel, chop, knead, spread, bake, group, combine, dish, aroma, savoury, sweet, national, traditional, develop, design, test, evaluate.
YEAR 3 & 4	**AUTUMN 1 (THERE'S NO PLACE LIKE HOME)**	**SPRING 1 (PANDEMIC)**	**SUMMER 1 (ROMANS ON THE RAMPAGE)**
	AUTUMN 2 (WILDERNESS EXPLORERS)	**SPRING 2 (FROM CHEWING TO POOING)**	**SUMMER 2 (THE IRON MAN)**
	Food – simple savoury food and cooking techniques ***Pupils should be taught to:*** ▫ Begin to understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. ▫ Analyse the taste, texture, smell and appearance of a range of food. ▫ to understand that a healthy diet is made up from a variety and balance of different food and drink. ▫ To understand how to use equipment (knives, heating elements) safely and with guidance. **Linked Vocabulary**- prepare, sweet, savoury, hygiene, heat, hot, cold, appearance, texture, smell, aroma, healthy, balanced, nutritious, ingredients, cut, chop, slice, combine, test, evaluate, varied, variety		**Mechanical systems- Leavers and linkages** ***Pupils should be taught to:*** ▫ Understand and use lever and linkage mechanisms. ▫ Distinguish between fixed and loose pivots. ▫ Know and use technical vocabulary relevant to the project at hand. ▫ Understand that different mechanisms produce different types of movement. **Linked Vocabulary**- levers, linkage, systems, process, loose pivots, fixed pivots, linear, reciprocating, rotary, oscillating, move, moving, mechanism, change, develop, design, build, craft, evaluate

YEAR 1 & 2	**AUTUMN 1 (A WALK ON THE WILD SIDE)**	**SPRING 1 (TO INFINITY AND BEYOND)**	**SUMMER 1 (SEE HOW MY GARDEN GROWS!)**
		Mechanisms; wheels and axles ***Pupils should be taught to:*** ▫ Explore and use mechanisms [for example, levers, sliders, wheels). ▫ Explain that wheels move because they are attached to an axle. ▫ Recognise that wheels and axles are used in everyday life, not just in cars. ▫ Identify and explain how some wheels and axles work using the correct vocabulary. **Linked Vocabulary**- build, mechanism, lever, axel, wheel, sliders, run, speed, move, motion, fast, slow, resistance, washer, develop, design, refine, evaluate.	**mechanisms – pop ups and simple leavers, Structures – stability and strength** ***Pupils should be taught to:*** ▫ Explore and use mechanisms. ▫ Select from and use a range of tools and equipment to perform practical tasks. ▫ Explore and evaluate a range of existing products. ▫ Build structures, exploring how they can be made stronger, stiffer and more stable. ▫ Discuss basic steps for design and making. ▫ Communicate ideas through observations and labelled drawings. **Linked Vocabulary**- structure, strength, material, stability, stiff, durable, label, discuss, evaluate, refine, design, change, evaluate, mechanism, pivot, move, model

	AUTUMN 2 (PUDDING LANE)	SPRING 2 (NUTS AND BOLTS)	SUMMER 2 (RHYTHM, BEAT AND BOOGIE!)
	Baking – hygiene -preparing and combining foods ***pupils should be taught:*** ▫ The importance of hygiene when handling and preparing food. ▫ That some food (such as bread) is made from a combination of different ingredients. ▫ To know that all foods come from either an animal or a plant. ▫ Understand safety procedures for cooking with equipment. ▫ That ingredients need a heat source in order to bake. **Linked Vocabulary**- health, hygiene, bake, cook, safe, safety, combine, ingredients, recipe, handle, prepare, combine, stir, cut, chop, peel, design, evaluate		

EYFS	CHARACTERISTICS OF EFFECTIVE LEARNING	EARLY LEARNING GOALS
	▫ Show curiosity about objects, events and people. ▫ Question why things happen. ▫ Engage in open-ended activity. ▫ Thinking of ideas Find ways to solve problems. ▫ Find new ways to do things. ▫ Test their ideas Use senses to explore the world around them. ▫ Create simple representations of events, people and objects. ▫ Planning and making decisions about how to approach a task, ▫ Solve a problem and reach a goal, ▫ Checking how well their activities are going, ▫ Changing strategy as needed, ▫ Reviewing how well the approach worked	▫ Choose the resources they need for a specific activity. ▫ Handle equipment and tools effectively ▫ Children know the importance for good health of a healthy diet ▫ They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. ▫ Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. ▫ They represent their own ideas, thoughts and feelings through design and technology **Linked Vocabulary**- build, make, join, fix, experiment, design, evaluate, change, represent, texture, form, function

YEAR B

	AUTUMN 1 (RAIDING OR INVADING?)	SPRING 1 (MAY THE FORCE BE WITH YOU)	SUMMER 1 (LOST AT SEA)
YEAR 5 & 6		**Food heroes, designing a healthy menu.** ***pupils should be taught:*** ▫ prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. ▫ Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. ▫ Understand that recipes can be adapted to change the appearance, taste, texture and aroma. ▫ Understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health. ▫ now that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. ▫ To know that seasons may affect the food available. ▫ To know how food is processed into ingredients that can be eaten or used in cooking. **Linked Vocabulary**- heat, taste, texture, aroma, grown, harvested, cultivated, reared, caught, seasonal, season, produce, processed, organic, cook, bake, design, evaluate.	**Combined Learning- Mechanical Systems, Electrical Systems, ICT Programming & Control.** ***pupils should be taught:*** ▫ A deeper understanding of electrical circuits, switches and other components. ▫ Recognise and name most common conductors and insulators, and explain why these materials are good/bad conductors/insulators. **Linked Vocabulary**- electric/electrical, circuit, component, series, construct, conduct, insulate, materials, switch, wire, system, develop, design, refine, evaluate

	AUTUMN 2 **(GB V'S UK)**	**SPRING 2** **(TEMPLES, PALACES AND PYRAMIDS)**	**SUMMER 2 (MILLING AROUND WITHNELL FOLD)**
		Mechanical systems, gears, Leavers and Pulleys ***pupils should be taught:*** ▫ That mechanical and electrical systems have an input, process and an output. ▫ Gears and pulleys can be used to speed up, slow down or change the direction of movement ▫ Develop a simple design specification to guide my thinking. ▫ Develop and communicate ideas through discussion with adults and peers ▫ How best to test and evaluate products with intended user in mind. ▫ To critically evaluate the quality of the design, manufacture, functionality and fitness for purpose of the intended outcome. **Linked Vocabulary**- electric/electrical, circuit, component, process, input, output, manufacture, function, gear, pulley, mechanical, mechanism, electrical, system, test, design, evaluate	
YEAR 3 & 4	**AUTUMN 1** **(WALK LIKE AN EGYPTIAN)**	**SPRING 1** **(A MISSION NAMED ENDURANCE)**	**SUMMER 1** **(VIVE LA FRANCE)**
		Food – Eat well plate and a simple dish ***pupils should be taught:***	**Textiles- seams, stiffening and strengthening materials and fastenings**

		▫ The importance of hygiene when handling and preparing food. ▫ To understand the need for a varied diet and how this can contribute to physical health. ▫ To understand that some animals are reared for meat produce whist other foods are derived from animals. ▫ To understand how food is grown and gathered ▫ To group foods according to the 'eat well' plate. **Linked Vocabulary**- safety, hygiene, varied, balanced, healthy, produce, fruit, vegetables, carbohydrates, dairy, protein, oil, design, evaluate	***Pupils should be taught to:*** ▫ That pieces of fabric can be joined together in a range of ways. ▫ To produce a simple running /tack stitch that can join two pieces of fabric together. ▫ To identify a range of fastenings that can be used within textile products. ▫ To understand how fabric can be strengthened at the seam my folding and stitching. ▫ To understand that a seam joins two pieces of fabric together. **Linked Vocabulary**- material, fabric, stitch, running stitch, tack stitch, pin, needle, thread, seam, seam allowance, fastening, zip, button, Velcro, hook & Eye, drawstring, clasp, design, evaluate
	AUTUMN 2 **(ERUPTION)**	**SPRING 2** **(STONE AGE BRITAIN)**	**SUMMER 2** **(SLEEP, EAT, WORK, REPEAT)**
		Shell Frame Structures. ***pupils should be taught:*** ▫ Investigated, explore and evaluate a range of shell structures including the materials, components and techniques that have been used. ▫ Test and evaluated our own products against design criteria and the intended user and	**ICT and electrical systems – control and electrical components** ***pupils should be taught:*** ▫ A general understanding of electrical circuits, simple switches and components. ▫ Identify common appliances that run on

		purpose. ▫ Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product ▫ Develop and refine ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. **Linked Vocabulary**- structure, shelter, shell, build, develop, function, refine, material, aesthetic, technology component, design, evaluate	electricity. ▫ Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. ▫ Identify whether or not a lamp will light in a simple series circuit, based on whether or not a lamp lights in a simple series circuit. ▫ Recognise some common conductors and insulators, and associate metals with being good conductors. **Linked Vocabulary**- electric/electrical, circuit, component, series, construct, conduct, insulate, materials, appliance, design, refine, test, evaluate, light, sound
YEAR 1 & 2	**AUTUMN 1 (WHO DO YOU THINK YOU ARE?)**	**SPRING 1 (THE LOCAL CHAMPION)**	**SUMMER 1 (WONDERFUL WITHNELL)**
	AUTUMN 2	**SPRING 2**	**SUMMER 2**

	(CIRCLE OF LIFE)	(THE GREAT OUTDOORS)	(NATURE DETECTIVES)
	Baking and hygiene, preparing foods. ***pupils should be taught:*** ▫ The importance of hygiene when handling and preparing food. ▫ Understand that all food comes from either a plant or animal. ▫ To sort foods into the five food groups. ▫ To recognise and understand the importance of a healthy, balanced and varied diet. ▫ To know how to use techniques such as cutting, peeling, grating and slicing. ▫ To prepare a simple dish safely and hygienically without the use of a heat source. **Linked Vocabulary**- cut, grate, peel, slice, spread, grow, crop, harvest, hygiene, health, balanced, varied, design, evaluate	**Structures, stability & Strength** ***pupils should be taught:*** ▫ That models can be made from a range of different media. ▫ That parts of models can be joined together using different techniques. ▫ To understand that some models may need an internal frame to be freestanding. ▫ To understand the ways in which a frame structure can be strengthened. ▫ To build structure models with a range of media. **Linked Vocabulary**- material, media, part, cut, fasten, join, build, fix, structure, strengthen, support, function, design, evaluate.	**Textiles- knowledge of basic stitiches and techniques** ***pupils should be taught:*** ▫ That fabric can be joined together as part of the 'construction' of an item or garment. ▫ That fabric can be joined using a variety of different techniques and different stitches. ▫ To recall and name some of these stitches. ▫ To pin fabric together before sewing. ▫ To thread a needle in preparation for hand stitching. ▫ To produce a range of simple joining stitches. **Linked Vocabulary**- fabric, material, join, attach, piece, thread, needle, stitch, running stitch, tack, pin, hold, garment, technique, design, evaluate
EYFS	**CHARACTERISTICS OF EFFECTIVE LEARNING**		**EARLY LEARNING GOALS**
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