HUNTINGTON PRIMARY ACADEMY

DESIGN TECHNOLOGY

SUBJECT INTENT

AS DESIGNERS WE LEARN HOW THINGS ARE MADE AND HOW TO JOIN, USE AND FIX MATERIALS. WE EMBRACE CHALLENGES AND USE OUR CREATIVITY TO PLAN, MAKE AND REVIEW PROJECTS.

How our curriculum is connected through our values:

As designers and makers we will take inspirations from design and inventions all over the world.

As designers and makers we embrace challenge and individuality.

As designers and makers we encourage resilience and independence to challenge.

As designers and makers we produce ideas and products that we are proud of.

LONG TERM PLAN AND NATIONAL CURRICULUM COVERAGE

	EYFS	YEAR 1	YEAR 2	
AUTUMN	Belong - **You, Me, Us** Belong **- Festivals, Celebrations & Heroes**	**Embrace responsibility** Structures- stability Build a bridge (Visit the river near All Saints)	**Belong (Our city) - Railways** Mechanisms -wheels/axles Vehicles - Trains (National Railway Museum)	
SPRING	Encourage Curiosity - **Discoveries** Encourage Curiosity **- Inventions**	**Belong (Our world)- Australia** Mechanisms-sliders/hinges	**Belong (Our world)- Africa** Textiles- joining African themed puppet (Lotherton Hall (African Birds))	
SUMMER	Embrace Diversity - **Growing & Farming** Embrace Diversity - **Places & Journeys**	**Embrace (Diversity)-Helping Heroes - Florence Nightingale and Mary Seacole** Mechanisms- simple winding	**Embrace (Diversity) Coming to England-Floella Benjamin and Windrush** Food technology Caribbean fruits	
	YEAR 3	**YEAR 4**	**YEAR 5**	**YEAR 6**
AUTUMN	**Belong (Our city) - Romans** Mechanisms- pneumatics Animal in myth (Romulus & Remus)	**Belong (Our city) - Vikings** Structures - strengthening Viking Longhouse (Murton Park)	**Belong (Our city)- WWII** Structures - Timber frame + combining Anderson Shelters project (Eden Camp / War Memorial Walk)	**Belong (Our city)- Victorians** Mechanisms- Automaton - Cams- control Victorian winding toy

SPRING	**Belong(Our world)- Extreme Earth** Textiles- fastenings Small container with fastening **Encourage (Curiosity) Spring 2** ***-Stone Age to the Iron Age*** Food Technology Oatcakes and toppings		**Belong(Our world)-** Mechanisms-electrical control/pulleys/motors Space buggy (Dome experience/ workshop)	**Encourage (curiosity)- Egypt- Spring2** Food Technology Bread/ Salad
SUMMER		**Embrace (Diversity)** **The Underground Railroad -** Harriet Tubman - CJ Control- Electrical circuits/switch Torch with switch **Encourage (Aspiration)** **Final Flight** Amelia Earhart **CJ** Mechanisms- Levers and linkages Pop up books	**Encourage (Aspiration)- sum 2** **Ancient Greeks** Textile - patterns, finishing and decorative techniques Fabric Greek toy	**Embrace (Diversity) Mountain Explorers** Junko Tabei and Ernest Shackleton - CJ Electrical based- monitoring and control with microbits

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Strand : Explore and Investigate	Explore, use and refine a variety of artistic effects to express their ideas and feelings. (Development Matters)	**Explore:** •who products are for and how they are used •what materials products are made from •what they like and dislike about products	**Explore:** • how products work and where they might be used • what materials products are made from • what they like and dislike about products	**Investigate and analyse:** • why materials have been chosen • how well products work •when products were designed and made • whether products can be recycled or reused • when and where products were designed and made •Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	**Investigate and analyse:** • why materials have been chosen and whether products can be recycled or reused • how well products work and achieve their purposes • what methods of construction have been used • when and where products were designed and made •Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	**Investigate and analyse:** • why materials have been chosen and how sustainable the materials in products are • how well products work and achieve their purposes (meet user needs and wants) • what methods of construction have been used • how much products cost to make •Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	**Investigate and analyse:** • how well products have been designed and made • why materials have been chosen for a product and how sustainable the materials are • how well products work and achieve their purposes (meet user needs and wants) • what methods of construction have been used • how much products cost to make • what impact products have beyond their intended purpose •Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products (how innovative products are)
Strand: Design	Create collaboratively, sharing ideas, resources and skills. (Development Matters)	•State what products they are designing and making and describe what it is for	•Describe what their products are for and how they will work	•Describe clearly the purpose of their products •Gather information about the needs and wants of individuals and groups and	•Describe clearly the purpose of their products •Indicate the design features of their products	•Describe the purpose of their products in detail •Identify the needs, wants, preferences and values of particular	•Describe the purpose of their products in detail •Carry out research, using surveys, interviews, questionnaires and

User and purpose --- **Generating ideas**		•Say whether their products are for themselves or others •Say how they will make their products suitable for their users ------- •Generate ideas by drawing on their own experiences •Develop and communicate ideas by talking and drawing •Model ideas by exploring materials, components and construction kits	•Say how they will make their products suitable and appealing for their users ------ •Use simple design criteria to help develop their ideas •Use knowledge of existing products to help come up with ideas •Develop and communicate ideas by talking and drawing simple labelled diagrams (Use information and communication technology, where appropriate) •Model ideas by exploring materials, components and construction kits and by making templates and mockups	explain how the product they have designed will appeal to specific intended users •Begin to explain how some parts of their products work ---- •Share and develop ideas through discussion, annotated sketches (Use information and communication technology, where appropriate) •Model their ideas using simple prototypes and pattern pieces •Generate realistic ideas, focusing on the needs of the user	that will appeal to intended users •Explain how some parts of their products work •Develop their own design criteria and use these to inform their ideas ------ •Share and develop ideas through discussion, annotated sketches and computer aided design •Model their ideas using simple prototypes and pattern pieces •Make design decisions that take account of the availability of resources	individuals and groups and explain in detail how different design features of their products will appeal to different intended users •Explain clearly how particular parts of their products work ------ •Share, develop and clarify ideas through discussion, annotated sketches, cross-sectional drawing •Model their ideas using more complex prototypes and pattern pieces •Make design decisions, taking account of constraints such as time, resources and cost	web-based resources to explain, in detail, how different design features of their products will appeal to different intended users •Explain, in detail, how particular parts of their products work •Develop a simple design specification to guide their thinking ------- •Share, develop and clarify ideas through discussion, annotated sketches, cross-sectional drawings, exploded diagrams and computer aided design •Model their ideas using more complex prototypes and pattern pieces •Generate innovative ideas, drawing on research
Strand: Plan and Make	***ELG- Fine motor skills*** •Use a range of small tools, including scissors, paintbrushes and cutlery ***ELG- Creating with materials*** •Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	* Know how to select and use a range of tools and equipment to perform practical tasks e.g. cutting, sticking, shaping, joining and finishing. *Write or say what materials and tools I will need. •Follow appropriate procedures for safety and hygiene •Use a range of simple materials and components,including construction materials, kits and food ingredients. •Cut and shape materials and components	•Discuss their plans step by step •Select from a wider range of tools and equipment, explaining their choices •Select from a wider range of materials and components according to their characteristics --------- •Follow appropriate procedures for safety and hygiene •Use a wider range of materials and components, including construction materials and kits, textiles and food ingredients •Measure, mark out, cut and shape materials and components	•Select tools and equipment suitable for the task, giving reasons for their choices •Select materials and components suitable for the task, giving simple reasons for their choices •Order the main stages of making -------- •Follow appropriate procedures for safety and hygiene •Use a wider range of materials and components, including construction materials and kits, textiles and food ingredients •Measure, mark out, cut and shape materials and components with some accuracy	•Select tools and equipment suitable for the task, giving reasons that mention the skills they will be using •Explain clearly their choice of materials and components •Produce a simple ordered plan --------- •Follow appropriate procedures for safety •Use a wider range of materials and components, including construction materials and kits, and electrical components •Measure, mark out, cut and shape materials and components with some accuracy	• Explain their choice of tools and equipment in relation to the skills and techniques they will be using •Explain their choice of materials and components according to functional properties and aesthetic qualities •Create step-by-step plans as a guide to making --------- •Follow appropriate procedures for safety •Use a wider range of materials and components*, including construction materials and kits, textiles and mechanical components* •Accurately measure, mark out, cut and shape materials and components	•Explain their choice of tools and equipment in relation to the skills and techniques they will be using •Explain their choice of materials and components according to functional properties and aesthetic qualities •Create step-by-step plans as a guide to making, including appropriate lists of tools, equipment and materials that they need -------- •Follow appropriate procedures for safety and hygiene •Use a wider range of materials and components *(including construction materials and kits, textiles, food ingredients, mechanical components and electrical components)*

		•Assemble, join and combine materials and components	•Assemble, join and combine materials and components •Use finishing techniques,including those from art and design	•Assemble, join and combine materials and components with some accuracy	•Assemble, join and combine materials and components with some accuracy •Apply a range of finishing techniques, including those from art and design, with some accuracy	•Accurately assemble, join and combine materials and components •Accurately apply a range of finishing techniques, including those from art and design	•Accurately measure, mark out, cut and shape materials and components •Accurately assemble, join and combine materials and components •Accurately apply a range of finishing techniques, including those from art and design •Use techniques that involve a number of steps •Demonstrate resourcefulness when tackling practical problems
Strand: Evaluate	*ELG • Share their creations, explaining the process they have used* Return to and build on their previous learning, refining ideas and developing their ability to represent them. (Development Matters)	Talk about their design ideas and what they are making	Make simple judgements about their products and ideas against design criteria Suggest how their products could be improved	Identify the strengths and areas for development in their ideas and products Consider the views of others to improve their work	Refer to their design criteria as they design and make and to evaluate their completed products Consider the views of others, including intended users, to improve their work	Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Consider the views of others, including intended users, to improve their work	Critically evaluate their ideas and products against their original design specification Consider the views of others, including intended users, to improve their work
Strand: Technical Knowledge		Know about the simple working characteristics of materials and components Know about the movement of simple mechanisms such as **sliders.** Know the correct technical vocabulary for the projects they are undertaking	Know how freestanding structures can be made stronger, stiffer and more stable Know about the movement of simple mechanisms such wheels and axles. Know that a 3-D textiles product can be assembled from two identical fabric shapes Know the correct technical vocabulary for the projects they are undertaking	Know how to use learning from science and mathematics to help design and make products that work Know how mechanical systems such as pneumatics create movement Know that a single fabric shape can be used to make a 3D textiles product Know the correct technical vocabulary for the projects they are undertaking	Know how to use learning from science and mathematics to help design and make products that work Know how to make strong, stiff shell structures Know how mechanical systems such as levers and linkages create movement Know that electrical systems have an input, process and output Know the correct technical vocabulary for the projects they are undertaking Know how simple electrical circuits and components can be used	Know how to use learning from science and mathematics to help design and make products that work Know that materials have both functional properties and aesthetic qualities Know the correct technical vocabulary for the projects they are undertaking Know how to make and reinforce, strong, stiff shell structures Know how more complex electrical circuits and components can be used to create functional products	Know how to use learning from science and mathematics to help design and make products that work Know that materials can be combined and mixed to create more useful characteristics Know the correct technical vocabulary for the projects they are undertaking Know how to reinforce and strengthen a 3D framework Know how more complex electrical circuits and components can be used to create functional products Know how mechanical systems such as cams create movement Know how to program a computer to monitor

					to create functional products Know how to program a computer to control their products	Know that a 3D textiles product can be made from a combination of fabric shapes	changes in the environment and control their products
Strand: Cooking and Nutrition	**ELG- Fine motor skills** Use a range of small tools, including cutlery **ELG- Creating with materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Know that all food comes from plants or animals Know that everyone should eat at least five portions of fruit and vegetables every day Know how to prepare simple dishes safely and hygienically, without using a heat source	Know that food has to be farmed, grown elsewhere (e.g.home) or caught Name and sort foods into the five groups in the eat well plate Know how to use techniques such as cutting, peeling and grating. Know that food ingredients should be combined according to their sensory characteristics	Know 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 Know that food ingredients can be fresh, pre-cooked and processed Know how to prepare a variety of mostly savoury dishes safely and hygienically Know how to use a wider range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, Know that a healthy diet is made up from a variety and balance of different food and drink Know that to be active and healthy, food and drink are needed to provide energy for the body	N/A Although you may choose to use some of these skills- See Y3 column	N/A Although you may choose to use some of these skills- See Y6 column	Know that seasons may affect the food available Know how food is processed into ingredients that can be eaten or used in cooking Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Use a wider range of techniques such as peeling, chopping, slicing, grating, kneading and baking baking with increasing skill Know that a recipe can be adapted by adding or substituting one or more ingredients Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health