Deer Park Primary School

DESIGN & TECHNOLOGY CURRICULUM

Our Ultimate End Goal:

What will our designers be able to do when they leave us?

- **By the time our designers leave Deer Park Primary School they will have become resourceful, innovative, enterprising and capable citizens;**
- **They will have been inspired by inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products and in doing so made the world a better place;**
- **Our designers will be able to critique, evaluate and test their ideas and products and the work of others;**
- **They will use their creativity and imagination with confidence, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values;**
- **They will be given the opportunities to collaborate with others and to reflect on the products they have created;**
- **Each year, the children will utilise their skills and knowledge within the field of Design Technology to make the world a better place by designing, making and selling products as part of the Deer Park World of Work Curriculum.**

Curriculum Coverage (NC) **What are the most basic requirements from the National Curriculum?**		
EYFS	**Key Stage 1**	**Key Stage 2**
Expressive Art and Design • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function; • Share their creations, explaining the process they have used. **Physical Development (Moving and Handling)** • Children handle equipment and tools effectively, including pencils for writing. **Expressive Arts and Design (Being Imaginative)** • 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, art, music, dance, role play and stories.	**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. **Make** • select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria **Technical knowledge** • build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. • Cooking and Nutrition: • use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. **Cooking and Nutrition** • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.	**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. **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. **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 **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. **Cooking and Nutrition:** • understand and apply the principles of a healthy and varied diet. • prepare and cook a variety of predominantly savory dishes using a range of cooking techniques. • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught & processed.

Year Group Overview – Cycle A			
Key Stage	**Autumn**	**Spring**	**Summer**
EYFS	**Textiles** **Weaving**	**Structures** **Rockets**	**Cooking and Nutrition** **Strawberry Jam**
Year 1 & 2	**Textiles** **Weaving a Bag**	**Structures** **Bridges**	**Cooking and Nutrition** **Pizzeria**
Year 3 & 4	**Cooking and Nutrition** **Spiced Christmas Cookies**	**Mechanism** **Environmental Posters**	**Structures/Computers** **Stone Age Houses**
Year 5 & 6	**Structures** **Viking Longboats** that float and carry cargo	**Cooking and Nutrition** **Healthy muffins**	**Electrical Systems/Computers** **Father's Day Card**

Year Group Overview – Cycle B			
Key Stage	**Autumn**	**Spring**	**Summer**
EYFS	**Cooking and Nutrition - Gingerbread**	**Textiles - Teddy**	**Mechanism – Chicken and egg**
Year 1 & 2	**Cooking and Nutrition** **Salad**	**Textiles** **Bookmarks**	**Mechanism** **Drawbridges**
Year 3 & 4	**Mechanism** **Moving toys**	**Mechanism - Moving Toys** **Cooking and Nutrition - Smoothie Bar**	**Textiles/Computers** **Money Containers**
Year 5 & 6	**Cooking and Nutrition** **Soup Kitchen**	**Textiles** **Fashion Show**	**Electrical Systems/Computers** **Moving character from the Tempest**

Our curriculum

We have designed our curriculum to cover key concepts and common connections. These are outlined in the tables below:

Our Key Concepts and skills – Cycle A						
	Cooking and Nutrition	**Structure**	**Mechanical Systems**	**Electrical Systems**	**Computers**	**Textiles**
EYFS	**Strawberry Jam** • To cut and mix • To use a knife safely using the bridging technique. To use a wooden spoon to mix.	**Rockets** • Join cardboard using glue, masking tape and scissors carefully. • Explore materials, tools and techniques				**Weaving** • Cut, stick, stitch, weave in and out. • Scissors, glue, tread, plastic needles, felt fabric, sequin
Year 1 & 2	**Pizzeria** • To cut, chop, tear and grate safely. • To use the equipment knife, grater and hands.		**Drawbridge** • To use levers, wheels and pullies to raise and lower the drawbridge. To use triangularisation as			**Weaving** • To cut, tie, weave to strengthen and join material. • To use paper, card, scissors, glue, thread,

			a strengthening technic. • To use cardboard, dowel, string, masking tape, sellotape, cotton reels and wooden sticks.			fabric and needles.
Year 3 & 4	**Spiced Christmas Cookies** • To mix, grate, slice, knead and bake safely. • To use the equipment knife, grater, hands, oven, pastry cutters.	**Stone Age Houses** • Join twigs, mud, and straw to reinforce more complex structures. • Select a wider range of tools and equipment appropriate for building a cob house.	**Environmental posters** • To use levers and leverages to move mechanisms. To use triangularisation as a strengthening technic. • To use cardboard, glue, sellotape, scissors, paper and split pins.		**Stone Age Houses** • To use a computer to design the interior of a Stone Age Cob House. • To include the features found in an average Stone House.	
Year 5 & 6	**Healthy Muffins** • To cut, chop, tear and grate safely. • To use the equipment knife, grater and spoon.	**Longboats** • To cut, saw, stitch, glue safely to join paper, cardboard, wood or fabric together. To use triangularisation to strengthen a structure. • To use a variety of appropriate tools such as; scissors, glue gun, glue, saw, mitre, staples, needles and thread.		**Father's Day Card** • To use a series of circuits including a bulb, switch or sensor. • Crumble kits, bulb, sensor or switch, computer, card, decorative art materials.	**Father's Day Card** • To use a computer to program monitor and control their card. • To use a Crumble kit and computer	

Our Key Concepts and skills – Cycle B

	Cooking and Nutrition	Structure	Mechanical Systems	Electrical Systems	Computers	Textiles
EYFS	**Gingerbread** • To mix, cut and spread. • To use a wooden spoon to stir, to measure using balancing scales.		**Chicken and Egg** • To move a card using a basic lever. • To use paper, card, scissors and glue.			**Teddy** • To cut, stick, join and stuff. • Scissors, glue, felt fabric, stuffing
Year 1 & 2	**Salad** • To cut, chop, tear, grate, peel, toss and spiralize safely. • To use the equipment knife, grater, peeler, spiralizer and hands.	**Bridges** • Join paper using glue, sellotape, masking tape staples, paper clips and scissors carefully. • Strengthen, stiffen structures using rolling and concertinaing paper. To use triangularisation as a strengthening technic.				**Bookmarks** • To cut, thread, weave, cross stitch, embroidery, knotting • Scissors, needles, thread, Binca fabric,
Year 3 & 4	**Smoothie Bar** • To cut, chop, blend, juice, peel, mix. • To use the equipment safely; blender, juicer, knife, peeler.		**Moving Toys** • To understand and use mechanical systems using cams, camshafts, levers and linkages. To use triangularisation as a strengthening technic. • To use wood to make a cube, triangles to reinforce the structure, dowel, and		**Money Containers** • To use a computer to design the money container. • To include the features of a money container and materials, used as a digital design plan.	**Money Containers** • To Cut, thread, weave, cross stitch, glue, embroidery, back stitch, blanket stitch, knots, zip, buttons, staple. • To use scissors, thread, fabric, glue, buttons or a zip.

			cams of different shapes, glue gun, glue card, paper and masking tape.			
Year 5 & 6	**Soup Kitchen** • To cut, chop, peel, grate, mix, stir, season. • To use equipment safely; knife, peeler, grater, mini chopper		**Moving character from the Tempest** • To use previous knowledge of cams, camshafts, levers, leverages and triangularisation to make a character move in a Diarama. • To use a variety of equipment and materials appropriate to the design	**Moving character from the Tempest** • To use a series of circuits including a bulb, switch or sensor. • Crumble kits, bulb, sensor or switch, computer, card, decorative art materials.	**Moving character from the Tempest** • To use a computer to program monitor and control their character. • To use a Crumble kit and computer	**Fashion Show** • To use a variety of skills such as; cut, thread, weave, cross stitch, glue, embroidery, back stitch, blanket stitch, knots, zip, buttons, staple and tie to up-cycle materials to make new designs. • To use scissors, string, ribbon, fabric, needle, thread, buttons, zips, sequins, tassels, lace, paper, plastic, tissue, glue, tape paint, ink etc. to create new clothes.

The areas in grey are not relevant to EYFS and Key Stage 1

At Deer Park Primary School, we will use the six essentials of good practice in D&T:
USER: Children should have a clear idea of who they are designing their project for – considering needs, wants, interests or preferences
PURPOSE: children should know what the products they design and make are for. It should perform a clearly defined task that can be evaluated in use.
FUNCTIONALITY: Children should design and make products that function in some way to be successful.
DESIGN DECISIONS: Children need opportunities to select materials, components and techniques
INNOVATION: Children need scope to be original in their thinking and need open starting points
AUTHENTICITY: Children should design and make believable, real and meaningful products.

Each of the learning experiences will ensure that the children have 3 stages of learning:
Investigative and Evaluative Activities: Children learn from a range of existing products, learning about D&T in the wider world
Focused Tasks: Where they are taught specific technical knowledge, designing skills and making skills
Design, Make and Evaluate Assignment: where children create functional products with users and purposes in mind

PROCEDURAL KNOWLEDGE – Cycle A & B

What skills do we want our designers to have to support the DESIGNING, MAKING and EVALUATING stages? How will these skills build on what went before and help prepare our children for what is coming next?

Skill	EYFS	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
Background Research – Session 1 Exploring context and existing products	**Begin to:** talk about the different products using the correct names talk about how it works make comparisons with what they have seen before? Say what it made out of?	**Continue to:** understand what a product is and who it is for understand how a product works and how it is used identify where they might find a particular product identify the materials used to make a product express an opinion about a product	**Have developed/developing:** identify who made the product, when it was made and what its purpose is identify what the product has been made from evaluate the product on design and use **Brain Builders:** Research facts about famous inventors/ chefs / designers etc. linked to product	**Can/have/know:** identify who made the product, when it was made and what its purpose is identify what a product has been made from and how environmentally friendly the materials are evaluate a product on design, appearance and use identify the cost to make a product and whether it has any other purposes e.g. Leading innovation of the time, trend setting **Brain Builders:** Research facts about famous inventors/ chefs / designers etc. linked to product

Design Criteria – Session 2 Session 2 Understanding their intended users and their own product	**Begin to:**	**Continue to:**	**Have developed/developing:**	**Can/have/know:**
	Say who could use the product Identify if there anyone else that could use the product Explain their reasons describe who their product is for and why.	use own experiences and existing products to develop ideas explain what product they will be designing and making explain who their product will be used by describe what their product will be used for and how it will work explain why their product is suitable for the intended user	describe the purpose of their product and how it will work identify design features that will appeal to intended users explain how parts of their product works develop their own design criteria and use for planning ideas generate realistic ideas that meet needs of user and take into account availability of resources **Brain Builders:** Understand and gather information about what a particular group or people want from a product	describe the purpose of their product identify design features that will appeal to intended users explain how parts of their product will work develop their own design criteria and use for planning ideas generate innovative ideas that meet needs of user and take into account availability of resources create a design description for their product highlight the impact of time, resources and cost within their design ideas generate innovative ideas that meet needs of user **Brain Builders:** Understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc.

Planning – Session 3 Session 3 Communicating ideas and creating prototypes for product	**Begin to:**	**Continue to:**	**Have developed/developing:**	**Can/have/know:**
	use ideas draw a picture of what they want to make. talk about what they will need to make it into something they can pick up. Talk about how will they put it together Say what colours they want to use	discuss what their steps for making could be represent ideas through talking, drawing and computing – (where appropriate) choose materials to use based on suitability of their properties create templates/pattern pieces and explore materials whilst developing ideas	share and discuss ideas with others order the main stages of making choose materials to use based on suitability of their properties represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate) create pattern pieces and prototypes	share and discuss ideas with others record a step by step plan for making produce lists for the tools, equipment and materials they will be using choose materials to use based on suitability of their properties and aesthetic qualities represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate) create pattern pieces and prototypes

Making –Session 4-5 Selecting the tools and applying the practical skills and techniques	**Begin to:** safely use and explore a variety of materials, tools and techniques experiment with colour, design, texture, form, and function	**Continue to:** choose suitable tools for making whilst explaining why they should be used follow safety and food hygiene procedures measure, mark, cut and shape materials and components join, assemble and combine materials and components use finishing techniques, including skills learnt in Art	**Have developed/developing:** choose suitable tools for making whilst explaining why they should be used Use design criteria whilst making follow safety and food hygiene procedures measure, mark, cut and shape materials and components with some accuracy join, assemble and combine materials and components with some accuracy use finishing techniques, including skills learnt in Art with some accuracy	**Can/have/know:** choose suitable tools for making whilst explaining why they should be used Use design criteria whilst making follow safety and food hygiene procedures measure, mark, cut and shape materials and components accurately join, assemble and combine materials and components accurately demonstrate problem solving skills when encountering a mistake or practical problem use finishing techniques that involve a number of steps, including skills learnt in Art accurately

Evaluation – Session 6 Referring to planning and initial ideas in evaluating their product	**Begin to:** share their creations, explaining the process they have used	**Continue to:** talk about their design ideas and what they have made make simple judgements of how the product met their design ideas suggest how their product could be improved	**Have developed/developing:** use design criteria to evaluate product – identifying both strengths and areas for development consider the views of others, including intended user, whilst evaluating product	**Can/have/know:** use design criteria to evaluate product – looking at quality of end product and design and whether it is fit for its intended purpose consider the views of others, including intended user, whilst evaluating product
Skills shown in green are the older year groups extra skills for mixed year classes				

Cooking and nutrition - Cross curriculum Links with Science			
Teaching cooking and nutrition **Understanding food and food preparation**	**Across KS1:** • Understand that food comes from plants or animals • Understand that food has to be farmed, caught, or grown	**Lower KS2:** • Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe • Understand that recipes can be changed by adding or taking away ingredients • Understand that the seasons can affect food produce	**Upper KS2:** • Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe • Understand that the seasons can affect food produce • Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg. De-feathering a chicken) • Understand that recipes can be adapted to change the appearance, taste and aroma of a dish
Teaching cooking and nutrition **Food preparation, cooking and nutrition**	**Across KS1:** • Sort foods into the 5 groups using The Eatwell Plate • Identify that people should eat at least 5 portions of fruit and vegetables a day • Prepare simple dishes hygienically and safely without a heat source • Use cooking techniques such as: cutting, peeling and grating	**Lower KS2:** • Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet • Identify that food and drink are needed to provide energy for a healthy and active lifestyle • Identify that people should eat at least 5 portions of fruit and vegetables a day • Prepare simple dishes hygienically and safely, where needed with a heat source • Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking	**Upper KS2:** • Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet • Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle • Identify that people should eat at least 5 portions of fruit and vegetables a day • Prepare simple dishes hygienically and safely, where needed with a heat source • Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking

LINES OF ENQUIRY

Questions to arise to show propositional knowledge:
What lines of enquiry do we want our Designers to follow?
What experiences do we want our Designers to have had?
What key concepts or knowledge will our designers have?

EYFS	YEAR 1 AND YEAR 2	YEAR 3 AND YEAR 4	YEAR 5 AND YEAR 6
TRAINS **Lines of enquiry** What do different trains look like? What can I use to make my train? How can I join cardboard together? **FISH** **Lines of enquiry** How does fabric stick together? How do you thread a needle? **STRAWBERRY JAM** **Lines of enquiry** Where do strawberries come from? Is jam healthy? How do strawberries change when they are made into jam? What can strawberry jam be used for? **CHRISTMAS CARDS** **Lines of enquiry**	**WEAVING** **Lines of enquiry** Is all material woven? Does weaving make the material stronger? Can all materials be woven?? **DRAWBRIDGES** **Lines of enquiry** How do I test the strength of different materials? What is a pulley mechanism? How does a pully work? How does my drawbridge work? Did my bridge hold the car? **PIZZERIA** **Lines of enquiry** Where does pizza come from? Why do we cook pizza?	**SPICED CHRISTMAS COOKIES TO HANG ON A TREE** **Lines of enquiry** Where do the different spices come from? What do the different spices taste like? Why do we do a taste test? How does the heat change the ingredients when cooked? **ENVIRONMENTAL POSTERS** **Lines of enquiry** What do I know about levelers and linkages? How do I make something move using a lever?? **STONE AGE HOUSES** **Lines of enquiry** How can computers be used to produce a design? How do you use mud and straw to make a Stone Age House?	**HEALTHY MUFFINS** **Lines of enquiry** What other recipes do you know that use the same ingredients? Can a muffin be part of a healthy diet? How does using beetroot change the appearance and taste of the muffins? Does using vegetables make the muffin healthy and why? **LONGBOATS** **Lines of enquiry** What was special about the design of the Longboat? How can I make my longboat water tight? Will my Longboat float? Can my Longboat balance? Can my Longboat hold ten Playmobil men? What unique features did the Vikings

How do pop up books work? What do I have to do to make levers move? **SCONES** **Lines of enquiry** What is a scone? Why do we have to bake scones? What ingredients can we change and what can we keep the same? Where do the ingredients come from? **TEDDY** **Lines of enquiry** What materials are Teddies made out of? Why do we need a design?	Is pizza good for you? Why do I need a recipe? **SALAD** **Lines of enquiry** Why do we clean our hands and ingredients to make a salad? Why is some food safe to eat raw? Why should I eat fruit and vegetables? Where do the ingredients come from? **BOOKMARK** **Lines of enquiry** Why do we use stitches? What different stitches can I use? What stitch will be best for my design? **BRIDGES** **Lines of enquiry** What different kinds of bridges are there? What do I know about strengthening a structure? Can I push George Stephenson's Rocket over the bridge without collapsing? Can I work to a design brief?	Does the exterior material (mud and straw) need to be waterproof? **SMOOTHIE BAR** **Lines of enquiry** Are all smoothies healthy? What ingredients go in a smoothie? Which flavours are most popular? How can you find out? What combination of ingredients makes the heathiest, tastiest smoothie? **MOVING TOYS** **Lines of enquiry** What are cams? Are there different designs of cams? Which will be the best cam design to use? Is a cam the only thing I need to make something move? **MONEY CONTAINERS** **Lines of enquiry** How many different ways can I fasten a container together? How can I plan my design using 2-Design in Purple mash?	use when making a Longboat? Can I follow a design brief? **FATHER'S DAY CARD** **Lines of enquiry** What do I know about electrical circuits? How can I use a circuit for a greeting card? How do I use a crumble kit to make an electronic program? **SOUP** **Lines of enquiry** Where does the ingredients come from? Does all soup have to be cooked? Is soup a healthy option? What part of the vegetable is used? What vegetable are grown in the school garden? Are all vegetables grown at the same time? **MOVING CHARACTERS FROM THE TEMPEST** **Lines of enquiry** Can I use what I know about circuits to help me?

		How can I join my container together? What can I use to fasten my container together?	What do I know about levers and linkages to help me? Can I work with a team? How do I use a crumble kit to make an electronic program? **FASHION SHOW** **Lines of enquiry** Where could I get materials from? What different ways can we join materials together? How will this impact the environment?

What experiences do we want our Designers to have?

EYFS	YEAR 1 AND YEAR 2	YEAR 3 AND YEAR 4	YEAR 5 AND YEAR 6
TRAINS **Structures** Creative area in the classroom about Polar express and trains. Make a train from up cycling boxes using recycle materials in the outdoor area. (Link English, Science, computers) **FISH** **Textiles** Different materials and textures in the investigation and dressing up area. **STRAWBERRY JAM** **Cooking and Nutrition** Tasting area of different fruits. Sell strawberry jam at the school fair. (Link Community, Fund Raising, UTW) **CHRISTMAS CARDS** **Mechanism** Construction area with mechanical parts that move. To make a pop-up card to send home for Christmas. (Link R.E. Beliefs)	**WEAVING** **Textiles** To make a woven basket to hold a product out of a chosen material. To take as a gift for Christmas. (Link Science) **DRAWBRIDGES** **Structures** To experiment with different pully systems using levers, sliders and axles to make the bridge rise up. (Link History) **PIZZERIA** **Cooking and Nutrition** To do a taste test of different toppings. To make a pizza parlour to invite parents in to taste the different pizzas. (Link science and Geography) **SALAD** **Cooking and Nutrition** To do a taste test of different vegetables and fruits. To make a salad and invite parents in to taste. (Link R.E. and Harvest Festival) **BOOKMARK** **Textiles**	**SPICED CHRISTMAS COOKIES TO HANG ON A TREE** **Cooking and Nutrition** To do a taste test of different spices. To choose spices to make a Christmas cookie to hang on a Christmas tree. To sell at the Christmas fayre. (Link Geography, Science Community and Fund Raising) **MOVING POSTERS (ENVIRONMENTAL POSTERS)** **Mechanism** To go on a trip to The Deep. (Link Science) **STONE AGE HOUSES** **Structures/Computers** To make a Stone Age Village as a class. Plan the interior of a Stone Age House on 2-design on Purple Mash (Link History) **SMOOTHIE BAR** **Cooking and Nutrition** Do a taste test of different vegetables and fruits. Make a smoothie bar and invite parents in to taste. (Link Science)	**HEALTHY MUFFINS** **Cooking and Nutrition** Compare healthy muffins and sweet muffins (Link Science and school garden) **LONGBOATS** **Structures** Test the product against the design brief. (Link History) **MOVING CHARACTERS FROM THE TEMPEST** **Mechanism/Electrical Systems/Computers** Use Crumble kit to make (Link Computers and English) **SOUP KITCHEN** **Cooking and Nutrition** Collect vegetables and herbs from the school garden and make soup to invite people from the local community in for Harvest Festival. (Link school garden, community and Harvest Festival) **LIGHT UP CARD**

AFTERNOON TEA (SCONES) **Cooking and Nutrition** Make scones and choose different ingredients to put in the scones and invite parents for afternoon tea. (Link R.E. Shrove Tuesday) **TEDDY** **Textiles** Make a teddy for a teddy bears picnic and invite parents. (Link History) Teddies, blankets and picnic wear in outside area.	Make a bookmark to sell at the school fair (Link community, fund raising) **BRIDGES** **Structures** Make a bridge to a given criteria to test a model of George Stephenson's Rocket working in Kagan teams. Visit the Railway museum in York. (Link History)	**MOVING TOYS** **Mechanism** Make a moving toy using cams for a Key Stage 1 child. (Link Computers) **MONEY CONTAINERS** **Textiles/Computers** Test if the product holds coins.	**Electrical Systems/Computers** make a light up card for Father's day. (Link Science) **FASHION SHOW (UP-CYCLING MATERIALS)** **Textiles** Collect unwanted clothes at school. Up-cycle the materials and design and make a variety of costumes for a fashion show. The classes perform in front of the school. (Link environmental)

What key vocabulary will our designers need? Vocabulary will be continually revisited throughout each year group.
Vocabulary is important because it embodies and communicates concepts.

	EYFS	YEAR 1 and YEAR 2	YEAR 3 and YEAR 4	YEAR 5 and YEAR 6
	Key Design Vocabulary	**Key Design Vocabulary**	**Key Design Vocabulary**	**Key Design Vocabulary**
Design	Picture, drawing, **user, design**	**Purpose, develop, model, template**, information, materials, **Mock up, function, product, media, appeal, prototype, client/audience**	user, purpose, design, model, **evaluate**, prototype, **annotated sketch,** mock-up**, functional, innovative, investigate, label, drawing, function, planning, design criteria, appealing, design brief, design criteria, innovative**, **sensory**	**design decisions**, **functionality, authentic,** user, purpose, **design specification**, design brief, innovative, **research**, evaluate, design criteria, annotate, evaluate, mock-up, prototype, function, innovative, purpose design brief, design specification, prototype, annotated sketch
Make	**Experiment, change, tools, materials,** use	Design, **equipment**, material**, fabric, thread,** shape, glue, cut, **fold, sew, staple, join, function, refine, mechanism, adhesive, template**	**Select, tools**, equipment, **skills, technique,** perform, explain, **components,** material, construction, build, **create, product, stages, utensils**,	**Combine, functional properties, aesthetic qualities, electrical components, function, step-by-step plan, resources**, measure, **assemble**, **connect electrical components, reliable**, functional, **decorative techniques**
Evaluate	**Materials,** use**, idea, improve.**	**Evaluate, improve**, design, **product, criteria, judge**	**Investigate, levers and linkages, project, test, original design criteria,** evaluate, **purpose, strengths, improvement**	**Compare, record evaluations, consider views,** improve, **modify, features, specification, critical, development, appropriate test, demonstrate, effectiveness**
Technical Knowledge	**technology, record, video, photograph**, computer	**roll, pleat, stiffen, strengthen, reinforce, structure, pulleys, hinge, levers, Corrugate, hinge,** lever**, pivot, linkages.**	evaluating, **design brief, design criteria, innovative,** prototype, user, **purpose,** function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations, design, model, evaluate, annotated sketch, functional, innovative, investigate, label, drawing, design criteria, appealing	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype, function, innovative, design user, purpose design brief, design specification, prototype, annotated sketch
Cooking and	food, **meal, snack, healthy, diet**	**chop**, cut, **peel**, cook, healthy, **farm, factory, nutrition, balance,**	**name of products, names of equipment, utensils, techniques** and	Ingredients, **yeast, dough, bran**, flour, **wholemeal**, **unleavened**, **baking soda,**

Nutrition		**carbohydrates, protein, sugar, vitamin, mineral,** fat, thin**, exercise** and fitness**, organic, hygienic**	ingredients **texture**, taste, sweet, **sour**, hot, **herb, spicy, appearance,** smell, **preference, greasy**, **moist**, cook, fresh, **savoury,** hygienic, **edible**, grown, **reared, caught,** frozen, tinned, **processed, seasonal, harvested** healthy/**varied diet**	**spice,** herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, **nutrition**, healthy, varied, **gluten**, dairy, allergy, **intolerance**, savoury, **source**, **seasonality utensils**, combine, **fold, knead,** stir, pour, mix, **rubbing in**, **whisk, beat, roll out**, shape, sprinkle, crumble
Structures	**TRAINS** **Structures** **card, masking tape, assembling, cutting, joining, vehicle, wheel, body, cab**	**BRIDGES** **Structures -** **Freestanding structures** **cut, fold, join, stick structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder design,** make, **evaluate**, user, purpose, ideas, design criteria, product, function	**STONE AGE HOUSES** **Structures- Computers** **Cave painting, mammoth, spears, house, Neolithic, fur pelt, Skara Brae, hand axe, antler, hammerstone, stone, wood, shelter, fire, settlement, prey, B.C.**, artefact, **mud, cob, adobe, straw, construct**	**LONGBOATS** **Structures** structure, **stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary**, permanent design brief, **design specification, prototype**, annotated sketch, purpose, user, innovation, **research functional** shape, design specification, innovative, research, **evaluate**, design brief
Cooking and Nutrition	**STRAWBERRY JAM** **Cooking and Nutrition** Strawberries, butter, sugar, **jar, stir, chop, mix, pan, hob, change, melt, knife** **SCONES** **Cooking and Nutrition** **Flour**, eggs, cheese, jam, cream, **stir, mix, bowl, oven, change**, butter, spoon	**PIZZERIA** **Cooking and Nutrition** **design criteria, purpose, user, annotated sketch, sensory, evaluations, peeling, chopping, slicing, grating,** mixing, **spreading, kneading,** baking**, fresh, pre-cooked, processed,** oven, **SALAD** **Cooking and Nutrition** Vegetables, fruit, carrot, spinach, lettuce, tomato, cucumber, onion, cheese, olives, grapes, strawberry, raspberry, blueberry, orange, apple, pear, lemon, mango **(depending on the year groups**	**SPICED CHRISTMAS COOKIES TO HANG ON A TREE** **Cooking and Nutrition** **Spice, nutmeg, cinnamon, ginger, bicarbonate of soda, golden syrup, combined, dusting, grind, grate** **SMOOTHIE BAR** **Cooking and Nutrition** Fruit, **shake, beverage, blend, juicer, squeeze, berries, vegetables, options, popular**	**HEALTHY MUFFINS** **Cooking and Nutrition** **Comparison test, vegetables, beetroot, carrot, spinach, basil, tomato, cheese, salt, pepper** **SOUP** **Cooking and Nutrition** design criteria, purpose, user, **annotated sketch, sensory, evaluations,** peeling, chopping, slicing, grating, mixing, **spreading, kneading, baking, fresh, pre-cooked, processed, seasoning, herbs**

		experience)		
Textiles	**TEDDY** **Textiles** **Join, decorate,** finish, **template,** shiny, **scale, tread, sew, needle, cut,** eye of the needle, fabric, wadding **FISH** **Textiles** **Join, decorate**, finish, **template, shiny**, scale, **tread, sew, needle**, cut, **eye of the needle**, **fabric**	**WEAVING** **Textiles** **joining** and **finishing techniques, tools**, **fabrics** and **components, pattern pieces, mark out.** **BOOKMARK** **Textiles** **stitch, running stitch, cross stitch, embroidery, fabric, finishing,**	**MONEY CONTAINERS** **Textiles - Computers** **names of fabrics, fastening, compartment, zip, button**, structure, **finishing technique,** strength, weakness, **stiffening, templates**, stitch, running stitch, cross stitch, embroidery, **back stitch, blanket stitch, seam, seam allowance, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype**	**FASHION SHOW** **Textiles** **Up-cycle, recycle, re-use, environment, fashion, seam,** seam allowance, wadding, **reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins,** needles, thread, **pinking shears, fastenings,**
Mechanism	**CHRISTMAS CARDS** **Mechanism** **slider, lever, pivot, slot, bridge/guide**, card, masking tape, paper fastener, **join, pull, push, up, down, straight, curve, forwards, backwards**	**DRAWBRIDGES** **Mechanisms** **slider, lever, pivot, slot, bridge/guide, paper fastener,** join, **pull, push, up, down, straight, curve, forwards, backwards, shaping, finishing, fixed, free, moving**, mechanism names of tools, equipment and materials used	**MOVING POSTERS** **Mechanism** Mechanism, lever, linkage, pivot, slot, bridge, **guide system**, **input, process, output, linear, rotary, oscillating, reciprocating** **MOVING TOYS** **Mechanism** **Cam, camshaft,** mechanism, guide, test, **diagram, gravity, rotary motion, pivot, off centre, axle, force, framework**	**MOVING CHARACTERS FROM THE TEMPEST** **Mechanisms, Electrical Systems, Computers** **pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch, circuit diagram**, **annotated drawings, exploded diagrams, mechanical system, electrical system**, input, process, output **design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief**
Electrical Systems				**FATHER'S DAY CARD** **Electronics, Computers** **prototype, annotated sketch,** purpose, user, **innovation, research** functional, design specification, innovative, research, evaluate, design brief, **circuit, light, LED, switch, instruction**

				MOVING CHARACTERS FROM THE TEMPEST **Mechanisms, Electrical Systems, Computers** **pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch,** circuit diagram, **annotated drawings, exploded diagrams, mechanical system, electrical system**, input, process, output **design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief**
Computer			**MONEY CONTAINERS** **Textiles - Computers** names of fabrics, **fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, functionality, innovation, authentic,** user, purpose, evaluate, **mock-up, prototype** **STONE AGE HOUSES** **Structures- Computers** **Cave painting,** mammoth, spears, house, **Neolithic, fur pelt**, **Skara Brae, hand axe, antler, hammerstone, stone, wood, shelter, fire, settlement, prey, B.C., artefact.**	**FATHER'S DAY CARD** **Electrical Systems, Computers** **prototype**, **annotated sketch**, purpose, user, innovation, **research functional, design specification, innovative,** research, **evaluate, design brief, circuit, light, LED, switch, instruction** **MOVING CHARACTERS FROM THE TEMPEST** **Mechanisms, Electrical Systems, Computers** **pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch,** circuit diagram, **annotated drawings, exploded diagrams, mechanical system, electrical system**, input, process, output **design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief**

Curriculum Links						
	Cooking and Nutrition	**Structure**	**Mechanical Systems**	**Electrical Systems**	**Computers**	**Textiles**
EYFS Cycle A	**Strawberry Jam** Links with topic next year scones (if in that class). C**ommunity** – selling at the summer fair	**Trains** Link with Bridges topic in Y1 & 2 making materials stronger, stiffer and reinforced. Designing a product for a purpose.				**Fish** Link with Y1&2 Weaving and Bookmark. Sewing, joining making materials stronger, stiffer and reinforced. Designing a product for a purpose.
EYFS Cycle B	**Scones** Links - Same basic ingredients in Pizza (Y1&2), cookies (Y3&4) and muffins (Y5&6) How these basic ingredients make many different foods. Invite parents for afternoon tea		**Christmas Cards** Previous knowledge – Pop up books. In Y1&2 the children will design, make and evaluate Drawbridges using pullies, levers and linkages. Also they will make an Environmental Poster in Y3&4			**Teddy** This links in Y1&2 Weaving and Bookmark. Sewing, joining making materials stronger, stiffer and reinforced. Designing a product for a purpose.

Year 1 & 2 Cycle A	**Pizzeria** Builds on previous knowledge from EYFS: Strawberry Jam, scones or Year 1 which will be Salad. Skills will be developed from just cutting and grating to peeling and spiralizing vegetables and fruit. Where does these vegetables and fruits come from? Link with cookies(Y3&4) and muffins(Y5&6) How these basic ingredients make many different foods. Invite parents to the Pizzeria.		**Drawbridge** Builds on previous knowledge from EYFS Christmas cards using leverages and levers. In Y3&4 they will be making Environmental posters which include levers and leverages evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.			**Weaving** Builds on EYFS topic on Fish or Teddy. Using materials investigate different ways of joining materials together. If Y1 next year in Bookmarks they will learn a variety of sewing techniques to develop the skills needed to make a money container in Y3&4
Year 1 & 2 Cycle B	**Salad** Builds on previous knowledge from EYFS: Strawberry Jam or scones or Year 1 which was Pizzeria. Skills will be developed from just cutting and grating to peeling and spiralizing vegetables and fruit. Where does these vegetables and fruits come from? Link with Pizzera adding vegetables and fruit as toppings and the preparation.	**Bridges** Builds on Trains in EYFS using construction material to design, make and evaluate working in a team to construct a bridge to a design brief. In Y3&4 they will design the interior of a Stone Age house using a computer program and make the structure.				**Bookmarks** Builds on EYFS topic on Fish or Teddy. Using materials investigate different ways of joining materials together. If Y1 next year in weaving they will learn a variety of sewing techniques to develop the skills needed to make a money container in Y3&4

Year 3 & 4 Cycle A	**Spiced Christmas Cookies** Builds on previous Pizza base using the same main ingredients for a different purpose. Where do the spices come from? Link with muffins(Y5&6) How these basic ingredients make many different foods? To sell at the Christmas fayre	**Stone Age Houses** Builds on Bridges in Y1&2 using construction material for the eternal features of a Stone Age House and a computer program for the interior design. In Y5&6 they will make Longboats using research to develop design criteria to inform the design of innovative, functional, appealing Longboat that is fit for purpose.	**Environmental posters** Builds on Y1&2 to design a drawbridge using wheels and pullies. Next year they will make a moving toy using cam and camshafts as well as levers (If in Y3). If in Y4 they will build on these skills in Y5&6 to design a character from the tempest using mechanical, computer programming and electronical skills.		**Stone Age Houses** Use computer programming to design the interior of a Stone Age House. Next Year (If in Y3) will use a computer program to design a money container. In Y5&6 to program controls for an electronic father's day card and a moving character from The Tempest	
Year 3 & 4 Cycle B	**Smoothie Bar** Builds on Salad (Yr1&2) the preparation of fresh fruit, vegetables and hygiene. Link with Healthy Muffins and soup (Y5&6) food preparation and where our food comes from. Invite parents to the smoothie bar for testing. Which is the healthiest, tastiest smoothie?		**Moving Toys** Builds on previous knowledge from Y1&2 making a Drawbridge In Y3&4 they will be making Environmental posters which include levers and leverages evaluate their ideas and products against their own design criteria and consider the views of others to improve their work (if in Y4). In Y5&6 they will build on these skills to design a character from the tempest using mechanical, computer programming and electronical skills.		**Money Containers** Use computer programming to design a money container. Next Year (If in Y3) will use a computer program to design the interior of a Stone Age House. In Y5&6 to program controls for an electronic father's day card and a moving character from The Tempest	**Money Containers** Builds on Y1&2 Weaving and Bookmarks using materials investigate different ways of joining materials together. In Y5&6 up-cycle materials to design, make and evaluate garments for a fashion show.

Year 5 & 6 Cycle A	**Healthy Muffins** Builds on Smoothie Bar and Spiced Christmas Cookies (Y3&4). Same main ingredients used for a different purpose. (Y1&2) salad – food preparation and hygiene. Where does our food come from? Shrove Tuesday for using ingredients up, why? Link with Soup Kitchen (If in Year 5). Invite parents for Muffin tasting.	**Longboats** Builds on Stone Age House (Y3&4) using construction material for the eternal features and a computer program for the interior design. In Y5&6 they will make Longboats using research to develop design criteria to inform the design of innovative, functional, appealing Longboat that is fit for purpose.		**Father's Day Card** Builds on circuits in science from Y3 &4. In Y5&6 using circuits to make a moving character from the Tempest (if Y5).	**Father's Day Card** Builds on previous learning Stone Age House (Y3&4) Using a computer to design. (If in Y5) Y5&6 to use a computer to program electrical circuit Moving Character from the Tempest.	
Year 5 & 6 Cycle B	**Soup Kitchen** Builds on Smoothie Bar and Spiced Christmas Cookies (Y3&4). Same main ingredients used for a different purpose. (Y1&2) salad – food preparation and hygiene. Where does our food come from? Link with Healthy Muffins (If in Year 5) Invite people from the local community for Harvest Festival.		**Moving character from the Tempest** In Y3&4 the children designed, made and evaluated Environmental Posters and Moving Toys. They will build on these skills and knowledge to design a character from the tempest using mechanical, computer programming and electronical skills.	**Moving character from the Tempest** Builds on circuits in science from Y3 &4. In Y5&6 using circuits to make a Father's Day card(if Y5).	**Moving character from the Tempest** Builds on previous learning Stone Age House (Y3&4) Using a computer to design. (If in Y5) Y5&6 to use a computer to program electrical light circuit for a Father's day cards.	**Fashion Show** Builds on Y3&4 Money Containers using different techniques to join materials and fasten together.

END POINTS

What key learning to we want our children to know and remember by the end of each unit?
What will we assess our children against?

EYFS	YEAR 1 AND YEAR 2	YEAR 3 AND YEAR 4	YEAR 5 AND YEAR 6
TRAINS **End Point** What can I use to make a train? How can I join cardboard together? Do I like my design and why? **FISH** **End Point** How and why do we join fabric together? **STRAWBERRY JAM** **End Point** Where do strawberries come from? Is jam healthy? Can you sell your jam at the Summer Fayre? **CHRISTMAS CARDS** **End Point** How do pop up books work? What do I have to do to make levers move? **SCONES** **End Point** What ingredients can we change and what can we keep the same?	**WEAVING** **End Point** Is all material woven? Does weaving make the material stronger? Is your design strong enough to hold an object? **DRAWBRIDGES** **End Point** How do I test the strength of different materials? How does a pully work? How does my drawbridge work? **PIZZERIA** **End Point** Where does pizza come from? Why do we cook pizza and is it good for you? Did you invite parents in to test the best pizza design? **SALAD** **End Point** Why do we clean our hands and ingredients to make a salad?	**SPICED CHRISTMAS COOKIES TO HANG ON A TREE** **End Point** Where do the different spices come from? What do the different spices taste like? Did you decorate your cookies and sell them at the Christmas Fayre? **ENVIRONMENTAL POSTERS** **End Point** How did I use levelers and linkages in my poster? How do I make something move using a lever? How did I help people improve their work? **STONE AGE HOUSES** **End Point** How can computers be used to produce an interior design? How do you use mud and straw to make a Stone Age House? Does the exterior material (mud and straw) need to be waterproof?	**HEALTHY MUFFINS** **End Point** What other recipes do you know that use the same ingredients? Can a muffin be part of a healthy diet? Does using vegetables make the muffin healthy and why? **LONGBOATS** **End Point** How can I make my longboat water tight, float, balance and hold 10 Playmobil people? What unique features did the Vikings use when making a Longboat? Can I follow a design brief? **FATHER'S DAY CARD** **End Point** How did I use electrical circuits to make a greeting card? How do I use a Crumble Kit to make an electronic program to light up a greeting card? What would I do differently next time?

Where do the ingredients come from? Did you invite parents in for afternoon tea? **TEDDY** **End Point** What materials are Teddies made out of? Why do we need a design? Did you have a Teddy Bears picnic and invite parents?	Why should I eat fruit and vegetables? Where do the ingredients come from? **BOOKMARK** **End Point** Why do we use stitches? What different stitches can I use? **BRIDGES** **End Point** What are the different ways to make a structure stronger? Can I work to a design brief? How did George Stephenson influence the building of bridges?	**SMOOTHIE BAR** **End Point** Did you make a healthy and tasty smoothie? Did you take a survey of the most popular smoothie? Did you invite parents in for a taste test? **MOVING TOYS** **End Point** What are the different designs of cams and what difference do they make? Is a cam the only thing I need to make something move? Was my moving toy appropriate for a child from Key Stage 1? **MONEY CONTAINERS** **End Point** What was they most appropriate way to fasten my money container and why? Did I use a computer program to design my money container? Can your money container hold money?	**SOUP** **End Point** Where does the ingredients come from including herbs? Does all soup have to be cooked and is it a healthy option? Did you provide soup for people in the local community for harvest time? **MOVING CHARACTERS FROM THE TEMPEST** **End Point** Can I use what I know about circuits, cams, levers and leverages to help me make a moving character? How do I use a Crumble Kit and a computer to make an electronic program? In teams did you perform a diorama from the Tempest? **FASHION SHOW** **End Point** Where could I get materials from and what different ways can we join materials together? How will this impact the environment? Can you put a fashion show together to show your design?