

KO: DT

“Creativity is nothing but a mind set free.” – Torrie T. Asai.

“People value design that values people.” Mark Jenkins

Critical Concepts

1 Designers understand and manipulate materials for their needs.

2 Designers are able to plan for purpose, and evaluate and adapt plans.

Moral element

Curriculum Threads

Sense of belonging **Appreciation of difference**

Appreciation of the World **Awe and Wonder**

Expressive Arts and Design

ELG: Creating with Materials

Children at the expected level of development will: -

- 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;
- Make use of props and materials when role playing characters in narratives and stories.

ELG: Being Imaginative and Expressive

Children at the expected level of development will:

- Invent, adapt and recount narratives and stories with peers and their teacher;
- Sing a range of well-known nursery rhymes and songs;
- Perform songs, rhymes, poems and stories with others, and – when appropriate – try to move in time with music.

	Autumn	Spring	Summer
Nursery	<ul style="list-style-type: none"> • Select and explore a variety of art materials in their self-led play e.g. scissors, paint, mark making resources, glue etc. • Participates in pretend play • Participates in sensory exploration. • Can talk about what they like and don't like when listening to music or looking at other media e.g. paintings. 	<ul style="list-style-type: none"> • Take part in simple pretend play, using an object to represent something else • Explore colour and colour mixing. • Talk about what they are doing, to another child or adult. 	<ul style="list-style-type: none"> • Begin to tell stories using small world equipment like animal sets, dolls and dolls houses, etc. • Explore different materials freely, to develop their ideas about how to use them and what to make. • Join different materials and explore different textures. • Respond to what they have heard, expressing their thoughts and feelings.

Cooking – Children will engage in opportunities to support the development of key skills in all areas of curriculum (particularly maths, science and CLL)

Large scale construction / scrap outside – guttering, planks of wood, tyres, ropes, hoses, cable drums, crates etc

Junk modelling

Construction kits – duplo, mobilo, Bioblo blocks, Briomec, wooden blocks

Reception	<p>Creating with materials:</p> <ul style="list-style-type: none"> • Begin to use emergent joining skills to combine materials. • Cut shapes using scissors and other modelling tools. • Build a construction/ sculpture using a variety of resources • Playdough table • Explore woodwork tools – hammer • Construction kits – duplo, mobilo, insterstar 	<p>Creating with materials:</p> <ul style="list-style-type: none"> • Begin to join materials with a variety of key resources, hole punching, using split pins and treasury tags, taping • Design and build a construction/ sculpture using a variety of objects e.g. recycled, natural and manmade materials— Deconstructive roleplay making materials to support role-play. • Use tools, materials and techniques in different ways to join a variety of materials together • Explore clay • Explore woodwork tools – hammer / saw / screwdriver • Construction kits – duplo, mobilo, insterstar – how can I improve my model? 	<p>Creating with materials:</p> <ul style="list-style-type: none"> • create with intention and share their processes • share creations, talk about process and evaluate their work. • confidently talk about my art work, explaining the processes they have used. • Use clay to create sculpture • Create something using woodwork tools– hammer / saw / screwdriver and drill (dowles) • Construction kits – mobilo, lego – plan, design model • Challenge - build a boat that floats
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Being imaginative:

- use props and materials when role playing characters in narratives and stories
- invent their own narratives, stories and poems.
- create narratives based around stories.

Cooking - Children will engage in opportunities to support the development of key skills in all areas of curriculum (particularly maths, science and CLL)

Large scale construction / scrap outside – guttering, planks of wood, tyres, ropes, hoses, cable drums, crates etc

Junk modelling

National Curriculum KS1:

Pupils should be taught:

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

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.

Food and Nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

At Key Stage 1, the main focus of food work within design & technology is:

To use the basic principles of a healthy and varied diet to prepare dishes

To understand where food comes from

To develop products to meet simple specifications, eg. a sandwich for a healthy lunchbox making products using hand tools and equipment, eg. using knives, mixing bowls working safely and hygienically in an organised way, eg.

To follow a simple pictorial plan or storyboard

To taste and evaluate familiar foods, eg. fruits and vegetables developing technical vocabulary in order to describe food, egs. words to describe its flavour, aroma, texture and appearance

Key DT vocab for KS1

Y1: Design, cut, fix, evaluate, sturdy, plan, join, tape, strong, axle, product, glue, mix, stable, water, explain, sew, stir, stiff,

Y2: Y1 vocab plus: criteria, materials, template, reason, clean, blade, assemble, peel, hygiene, safely, centimetres, fix, features

KEY STAGE ONE

Topic Curric. Threads	Key skills	Substantive Knowledge	Vocabulary
<p>Y1/2 Year B</p> <p>Food and Nutrition</p> <p>Bring on breakfast make a fruit and yoghurt breakfast dish</p>	<p><u>Design</u></p> <ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make. • Identify simple design criteria • Make simple drawings and label parts <p><u>Make</u></p>	<p>Curriculum Link: Link to previous learning: Opportunities to explore spirituality/ thread: Key experiences: Tasting sessions Key reflection: -</p> <ul style="list-style-type: none"> • 'Breakfast is an opportunity to nourish not just the body, but the soul.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop a food vocabulary using taste, smell, texture and feel. • Group familiar food products e.g. fruit and vegetables. • Explain where food comes from. • Cut, peel, grate, chop a range of ingredients 	<p>Lots of discussion re. imperative (bossy verbs): Grate/ Slice/ Chop/ Peel/cut Depending on food choice - correct terms for fruits/vegetables used</p> <p>Healthy diet - a balanced selection of the food groups 5 a day - the 5 portions of fruit and veg that is recommended everybody eat as part of a healthy diet Dairy - a product containing milk Non-dairy - a product that does not contain milk Allergies - an immune response which can be affected by eating the wrong food</p>

	<ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them • Measure, cut and score with some accuracy • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them 	<ul style="list-style-type: none"> • Understand the need for a variety of foods in a diet. • Measure and weigh food items, non-statutory measures e.g. spoons 	<p>Vegetarian - a person who does not eat meat products Vegan - a person who does not eat any products which come from animals</p> <p>When tasting food - Sweet / sour / bitter / salty / sharp</p> <p>Texture - chewy / crunchy / crispy / creamy / milky / soggy / mushy soft / juicy / crunchy / sticky / smooth/ hard</p>
<p>Y1 / 2 Year B</p> <p>Mechanisms Wheels and Axles</p> <p>Make a safari jeep/moon buggy</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make. • Identify simple design criteria • Make simple drawings and label parts <p>Make</p> <ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them • Measure, cut and score with some accuracy • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them 	<p>Curriculum Link: PoR units: One day on our Blue Planet/Astro Girl Link to previous learning: Rec creating/being imaginative and building Opportunities to explore spirituality/ thread: <u>Key experiences:</u> <u>Key reflections:-</u> Reflect on most important human inventions/ discoveries incl wheel, fire- what impact will they have had? Have we invented anything to rival nature? Reflect on the saying 'no need to reinvent the wheel!' DT skills/knowledge:</p> <ul style="list-style-type: none"> • Join appropriately for different materials and situations e.g. glue, tape. • Mark out materials to be cut using a template. • Experiment with levers, paper fasteners, sliders and split pins to make a simple moving toy/artefact. • Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. 	<p>Vehicle - something used to transport people/goods etc. Wheel - a circular object that rotates on an axle Body - the section mounted onto the chassis Cab - the area of the vehicle where the driver sits Axle – a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle. Axle holder – the component through which an axle fits and rotates. Chassis – the frame or base on which a vehicle is built. Friction – resistance which is encountered when two things rub together. Dowel – wooden rods used for making axles to hold wheels.</p>

<p>Y1 / 2 Year B</p> <p>Structures Free standing Bridges</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make. • Identify simple design criteria • Make simple drawings and label parts <p>Make</p> <ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them • Measure, cut and score with some accuracy • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them 	<p>Curriculum Link: Link to previous learning: Rec creating/being imaginative and building Opportunities to explore spirituality/ thread: Key experiences: Read 'Draw the Line' picture book Listen to 'Bridge Over Troubled Water' Key reflection:- Reflect on importance of connection- ref 'Bridge Over Troubled Water' Reflect on importance of building bridges with others- red Draw the Line DT skills/knowledge:</p> <ul style="list-style-type: none"> • Join appropriately for different materials and situations e.g. glue, tape. • Mark out materials to be cut using a template 	<p>Arched bridge - A bridge which is built with a carved arch Assemble - To put all parts together to form a final product Beam bridge - A bridge which is built with horizontal beams and vertical pillars. Mark out - measure and mark where something needs to be cut Measure -To find out or plan the size of something using standard units Reinforce - To make a structure or material stronger, especially by adding another material or element to it. Stable - Object does not easily topple over. Structure - Something that has been made and put together. It can usually stand on its own. Truss bridge - A bridge which is built from a series of triangular beams.</p>
<p>Y1 / 2 Year A</p> <p>Food and Nutrition Prepare to picnic – make a picnic dish; muffins/ cake / savoury skewer...</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make. • Identify simple design criteria • Make simple drawings and label parts <p>Make</p> <ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them • Measure, cut and score with some accuracy • Assemble, join and combine materials in order to make a product 	<p>Curriculum Link: Link to previous learning: Opportunities to explore spirituality/ thread: Key experiences: Key reflection:-</p> <ul style="list-style-type: none"> • 'Life's a picnic, enjoy the little things.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop a food vocabulary using taste, smell, texture and feel. • Group familiar food products e.g. fruit and vegetables. • Explain where food comes from. • Cut, peel, grate, chop a range of ingredients • Understand the need for a variety of foods in a diet. • Measure and weigh food items, non-statutory measures e.g. spoons, cups. 	<p>Ingredients - what is needed to make/bake/cook Protein - meat, pulses, beans, fish Carbohydrates - starchy foods such as rice, potatoes, pasta Fruit - apples, strawberries, bananas etc. Vegetables - peppers, lettuce, carrots etc. Dairy - milk, yogurts (or alternatives) sugars and fats</p> <p>When tasting food - Sweet, sour, bitter, salty, sharp</p> <p>Texture - chewy, crunchy, crispy, creamy, milky, soggy, mushy, soft, juicy, crunchy, sticky, smooth, hard</p>

	<ul style="list-style-type: none"> • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them 		
<p>Y1/2 Year A</p> <p>Textiles Templates and joining techniques</p> <p>Pouches</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make. • Identify simple design criteria • Make simple drawings and label parts <p>Make</p> <ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them • Measure, cut and score with some accuracy • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them 	<p>Curriculum Link: Link to previous learning: Rec creating/being imaginative and building Opportunities to explore spirituality/ thread: Key experiences: Key reflection: -</p> <ul style="list-style-type: none"> • 'Sewing brings the left and right side of the brain together.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Cut out shapes which have been created by drawing round a template onto the fabric. • Join fabrics by using e.g. running stitch, glue, staples, over sewing, tape. • Decorate fabrics with attached items e.g. buttons, beads, sequins, braids, ribbons. • Colour fabrics using a range of techniques e.g. printing, painting. 	<p>Template - a piece used as a pattern to follow Pin - to hold the fabric in place Sew - to join, fasten or repair with a needle and thread Running stitch - a simple stitch consisting of a line of small even stitches which run back and forth through the cloth without overlapping.</p>
<p>Y1/2 Year A Cards/Dioramas Mechanisms</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make. 	<p>Curriculum Link: Link to previous learning: Rec creating/being imaginative and building Opportunities to explore spirituality/ thread: Key experiences: Look at examples of cards and different approaches/ things they do Key reflection:- Reflect on importance of appreciating others/ of communicating with others</p>	<p>Lever - a rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.</p> <p>Slider - a rigid bar which moves backwards and forwards along a straight line</p> <p>Pivot - The central point/pin on which a mechanism turns</p>

	<ul style="list-style-type: none"> • Identify simple design criteria • Make simple drawings and label parts <p>Make</p> <ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them • Measure, cut and score with some accuracy • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them 	<p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Join appropriately for different materials and situations e.g. glue, tape. • Mark out materials to be cut using a template. • Experiment with levers, paper fasteners, sliders and split pins to make a simple moving toy/artefact. • Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. 	<p>Mechanism - a device used to create movement</p>
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National Curriculum in KS2:
Pupils should be taught:
 Key stage 2 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: 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.

Food and Nutrition
 Cooking and nutrition As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.
 At Key Stage 2: Diet and health be aware that we all need a balanced and varied diet to grow, be active and maintain health, and that we need to eat more of some foods than others e.g. we all need to eat at least 5 portions of fruit and vegetables every day recognise that food and water are basic requirements of life know that family and friends may eat or avoid certain foods be aware that being active and looking after yourself are important for health, e.g. brushing teeth twice a day Consumer awareness recognise that food can be grown at home or purchased from local farms and markets, shops and supermarkets be able to talk about which foods they like or dislike through tasting sessions know that people choose different types of food, based on who they are with, preference, season, time and occasion (including celebrations)

Key DT vocab for KS2
Using KS1 vocab plus:
Y3/4: research, quality, folding, germs, processed, annotate, technique, analysis, accuracy, seasonality, improvements, adaptability, reinforce, exploded diagrams, cross-section, functional
Using Y3/4 vocab plus:
Y5/6: purpose, innovative, appealing, sketches, prototype, sustainability, pattern pieces, aesthetics

LOWER KEY STAGE TWO

Topic Curric. Threads	Key skills	Substantive Knowledge	Vocabulary
<p>Y3/4 (Year A) Food and Nutrition</p> <p>Be a baker – Breads of the world</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Sew using a range of different stitches, weave and knit • Measure, tape or pin, cut and join fabric with some accuracy • Use simple graphical communication techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests • Evaluate and suggest ways that their product could be improved 	<p>Curriculum Link: Link to previous learning: Picnic unit KS1 Opportunities to explore spirituality/ thread: Key experiences: Tasting breads, Interviewing local bakers Key reflection:-</p> <ul style="list-style-type: none"> • 'Living life is like bread rising.' • 'Does bread unite us all?' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. • Analyse the taste, texture, smell and appearance of a range of foods. • Follow instructions/recipes. • Join and combine a range of ingredients. • Find out which fruit, vegetables and other foods are grown in countries/continents 	<p>Bake - Cooking food in a dry heat in an oven.</p> <p>Knead - to work a dough in order to help the food rise by stretching, folding and pushing.</p> <p>Leavening - an agent added to dough to help the food rise during cooking.</p> <p>Prove - Allow the yeast to combine itself with water until bubbles begin to form, which activates the yeast so that it will serve as a leavening agent and a rest period for the dough.</p> <p>Yeast - A living microscopic organism that turns sugars or starch into alcohol and carbon dioxide. Baker's yeast is used in the leavening of certain doughs.</p> <p>Gluten - a mixture of two proteins present in cereal grains, especially wheat, which is responsible for the elastic texture of dough.</p> <p>Bread - food made of flour, water, and yeast mixed together and baked.</p> <p>Naan - is a leavened, oven-baked or tawa-fried flatbread which is found in the cuisines mainly of Asia</p> <p>Rolls - a shaped loaf of bread usually round or oblong</p> <p>Baguette - a long, thin type of bread of French origin that is commonly made from basic lean dough</p>
<p>Y3/4 (Year A) Electrical Systems e.g. Fairground Ferris Wheel</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs <p>Make</p>	<p>Curriculum Link: Science Electricity unit Link to previous learning: Opportunities to explore spirituality/ thread: Key experiences: Making circuits – experimenting with them Key reflection:-</p> <ul style="list-style-type: none"> • 'Are our thoughts electrical?' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop vocabulary related to the project. • Use mechanical systems such as pneumatics • Incorporate a circuit into a model. • Use electrical systems such as bulbs and motors. • Develop vocabulary related to the project. 	<p>Electricity: It is a type of energy that is created by generators which can be powered by gas, coal, oil, wind, water or solar. It can be converted into other types of energy such as light, heat, sound or movement.</p> <p>Electrical circuit: A complete path through which electricity can flow. A circuit always needs a power source with wires connected to both the negative and positive ends.</p> <p>Current: The flow of an electric charge.</p> <p>Cells: A device used to create electricity. A battery is one or more cells connected.</p> <p>Wires: They are plastic coated and conduct the electricity</p>

	<ul style="list-style-type: none"> • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Sew using a range of different stitches, weave and knit • Measure, tape or pin, cut and join fabric with some accuracy • Use simple graphical communication techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests • Evaluate and suggest ways that their product could be improved 	<ul style="list-style-type: none"> • Create shell or frame structures. • Strengthen frames with diagonal struts. • Make structures more stable by giving them a wide base. • Measure and mark square section, strip and dowel accurately to 1cm. 	<p>to different components within the circuit.</p> <p>Switches: Opens and closes circuits, allowing the electric current to either pass through (closed circuit) or it prevents it from passing through (open circuit).</p> <p>Motor: A component which moves/spins when electricity passes through it.</p> <p>Conductors: a material that lets electricity pass through it easily. Good electrical conductors include many metals such as copper, iron and steel.</p> <p>Insulators: Materials that do not allow electricity to pass through them. Good insulators include wood, glass, plastic and rubber.</p>
<p>Y3/4 (Year A) Textiles Cushions/Shopping bag</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Sew using a range of different stitches, weave and knit • Measure, tape or pin, cut and join fabric with some accuracy • Use simple graphical communication techniques <p>Evaluate</p>	<p>Curriculum Link: One Plastic Bag PoR unit Link to previous learning: KS1 making pouches Opportunities to explore spirituality/ thread: Key experiences: Potential to sell products made to raise money Key reflection:-</p> <ul style="list-style-type: none"> • 'Pieces of fabric sewn together can represent the pieces of life coming together.' • 'A simple scrap can become something beautiful.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Understand seam allowance. • Join fabrics using running stitch, over sewing, blanket stitch. • Prototype a product and use it to make a pattern • Explore strengthening and stiffening of fabrics. • Explore fastenings and recreate some. • Sew on buttons and make loops. • Use appropriate decoration techniques 	<p>Cushion: a bag of cloth stuffed with a mass of soft material, used as a comfortable support for sitting or leaning on.</p> <p>Running stitch: a simple needlework stitch consisting of a line of small even stitches which run back and forth through the cloth without overlapping.</p> <p>Overstitch: a stitch made over an edge or over another stitch.</p> <p>Backstitch: overlapping stitches</p> <p>Cross stitch: a stitch formed of two stitches crossing each other. This stitch is stronger than the running stitch as it works in several directions.</p> <p>Hem: folding back and stitching down the edge of the material</p> <p>Seam: The line where two pieces of fabric are joined together with stitching</p> <p>Appliqué: literally means 'applied. Decorative needlework to create a design or picture on fabric.</p> <p>Pattern: a model or design used as a guide.</p> <p>Template: a shaped piece of rigid material used as a pattern for processes such as cutting out.</p>

	<ul style="list-style-type: none"> Evaluate their work both during and at the end of the assignment Evaluate their products carrying out appropriate tests Evaluate and suggest ways that their product could be improved 		
<p>Y3/4 (Year B) Food and Nutrition</p> <p>Lovely Lunch</p>	<p>Design</p> <ul style="list-style-type: none"> Generate ideas, considering the purposes for which they are designing Make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail Evaluate products and identify criteria that can be used for their own designs <p>Make</p> <ul style="list-style-type: none"> Select appropriate tools and techniques for making their product Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques Join and combine materials and components accurately in temporary and permanent ways Sew using a range of different stitches, weave and knit Measure, tape or pin, cut and join fabric with some accuracy Use simple graphical communication techniques <p>Evaluate</p> <ul style="list-style-type: none"> Evaluate their work both during and at the end of the assignment Evaluate their products carrying out appropriate tests Evaluate and suggest ways that their product could be improved 	<p>Curriculum Link: Link to previous learning: Y3/4 Be a Baker</p> <p>Opportunities to explore spirituality/ thread: Key experiences: Tasting sessions</p> <p>Key reflection:-</p> <ul style="list-style-type: none"> The keepers of recipes are the makers of culture.' 'Cooking can be a conversation with the past.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. Analyse the taste, texture, smell and appearance of a range of foods. Follow instructions/recipes. Join and combine a range of ingredients. Find out which fruit, vegetables and other foods are grown in countries/continents Revisit knife skills 	<p>Will also be imperative verbs and recipe specific vocabulary to be added dependent on cuisine choice</p> <p>Traditional - existing, long established routine/event</p> <p>Cultural- customs/behaviour of a society</p> <p>Chopping - cutting food into bite size pieces</p> <p>Grating - to 'cut' food into smaller pieces by rubbing it against the grain</p> <p>Dice - cutting food into small cube shape</p> <p>Blend - mix/whisk 2 or more ingredients together</p> <p>Slicing - to cut food into slices</p> <p>Boil - cooking food in high temperature water</p> <p>Simmer - cook in liquid just below boiling</p> <p>Julienne - a type of cut = long thin uniformed pieces (food cooks quickly) typically used in stir fry</p> <p>Stir fry - cooking small pieces of food over a high heat</p>
<p>Y3/4 (Year B) Structures Design a flood proof building (STEM unit - Beat the Flood)</p>	<p>Design</p> <ul style="list-style-type: none"> Generate ideas, considering the purposes for which they are designing Make labelled drawings from different views showing specific features. 	<p>Curriculum Link: Is the Climate breaking down? Geography unit</p> <p>Link to previous learning: Building bridges KS1</p> <p>Opportunities to explore spirituality/ thread: Key experiences: Waterways museum visit, Severn Trent workshop</p> <p>Key reflection:-</p>	<p>Criteria - standard by which something may be judged or decided</p> <p>Waterproof - something that keeps the water out</p> <p>Flood Proof - Something that has been designed to withstand a flood situation</p>

	<ul style="list-style-type: none"> • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Sew using a range of different stitches, weave and knit • Measure, tape or pin, cut and join fabric with some accuracy • Use simple graphical communication techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests • Evaluate and suggest ways that their product could be improved 	<ul style="list-style-type: none"> • 'What does flooding represent?' • 'How it used as a metaphor in life?' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop vocabulary related to the project. • Create shell or frame structures. • Strengthen frames with diagonal struts. • Make structures more stable by giving them a wide base. • Measure and mark square section, strip and dowel accurately to 1cm. 	<p>Shelter- a place giving temporary protection from bad weather or danger</p> <p>Purpose - the reason for which something is done or created or for which something exists</p>
<p>Y3/4 (Year B) Mechanisms Pneumatic Toys</p>	<p>Design</p> <ul style="list-style-type: none"> • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Sew using a range of different stitches, weave 	<p>Curriculum Link:</p> <p>Link to previous learning: KS1 moving cards</p> <p>Opportunities to explore spirituality/ thread:</p> <p>Key experiences:</p> <p>Key reflection:-</p> <ul style="list-style-type: none"> • 'The Greek word for spirit is the same as wind – pneuma.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop vocabulary related to the project. • Use mechanical systems such as pneumatics • Incorporate a circuit into a model. • Use electrical systems such as bulbs and motors. 	<p>pneumatics - The use of pressurised air to make things move.</p> <p>input movement,</p> <p>process - series of actions/steps to get to a particular end</p> <p>Compressed air - air that is kept under pressure greater than atmospheric pressure</p> <p>Pneumatic pressure - pressure exerted by pressurised gas</p> <p>Inflate - to fill with a gas so it becomes extended</p> <p>Deflate - to remove/let out the gas from an object</p> <p>Pump - a way of moving gases</p> <p>Air-tight - not allowing air/gas to escape</p>

	<p>and knit</p> <ul style="list-style-type: none"> • Measure, tape or pin, cut and join fabric with some accuracy • Use simple graphical communication techniques <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests • Evaluate and suggest ways that their product could be improved 		
<p>UPPER KEY STAGE TWO</p>			
<p>Y5/6 (Year A)</p> <p>Serve a salad</p>	<p>Design</p> <ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models • Construct products using permanent joining techniques • Make modifications as they go along • Pin, sew and stitch materials together create a quality product <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved 	<p>Curriculum Link:</p> <p>Link to previous learning: Y3/4 Lunch and Bread units</p> <p>Opportunities to explore spirituality/ thread:</p> <p>Key experiences: growing own salad ingredients and harvesting</p> <p>Key reflection: -</p> <ul style="list-style-type: none"> • 'Just like natural fruit, the Fruits of the Spirit are ALL good and necessary.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Prepare food products taking into account the properties of ingredients and sensory characteristics. • Weigh and measure using scales. • Select and prepare foods for a particular purpose. • Show awareness of a healthy diet e.g. the eatwell plate. • Use a range of cooking techniques. 	<p>Relevant fruit and vegetable names</p> <p>Relevant equipment</p> <p>Imperative verbs - range to be used</p> <p>Vitamins - vital for life - compound necessary for healthy functioning</p> <p>Nutrients - the substances in food that our bodies process to enable it to function</p> <p>Nutrition - all the stuff that's in your food, such as vitamins, protein, fat, and more</p> <p>Allergy - what affects a person's immune system</p> <p>Food intolerance - the body cannot digest food properly and therefore the digestive system is irritated</p> <p>Seasonality - cycles in which food is grown and ripened</p>

		<ul style="list-style-type: none">• Know where and how ingredients are grown and processed.	
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<p>Y5/6 (Year A) Structures</p> <p>Bird Boxes</p>	<p>Design</p> <ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models • Construct products using permanent joining techniques • Make modifications as they go along • Pin, sew and stitch materials together create a quality product <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved 	<p>Curriculum Link: Link to previous learning: Y3/4 Beat the Flood unit Opportunities to explore spirituality/ thread: Key experiences: Make a product to sell to customers Key reflection: -</p> <ul style="list-style-type: none"> • 'Can a bird box be the new beginning for a bird and its family?' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Use the correct terminology for tools materials and processes. • Use bradawl to mark hole positions. • Use hand drill to drill tight and loose fit holes. • Cut strip wood, dowel, square section wood accurately to 1mm. • Join materials using appropriate methods. • Stiffen and reinforce complex structures. 	<p>Design brief- a document or set of instructions for a project. It explains the purpose of the project and instructions for what is required. Design criteria- the important goals that a project must achieve in order to be successful. Prototype- a test or model of a product from which improvements, upgrades or fundamental changes can be made Resistant material- hard materials such as wood Compliant materials- soft material such as food or fabric Triangulation- a way of making a structure stronger (more stable)</p>
<p>Y5/6 (Year A)</p> <p>WW2</p> <p>Recycling clothes - eco focus- sock toys with outfit</p> <p>2022/2024 Eco swish event - upcycling clothing. Why the Clothes Quit</p>	<p>Design</p> <ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models 	<p>Curriculum Link: WW2 History unit/Eco curriculum Link to previous learning: Sewing cushion/bags Y3/4 Opportunities to explore spirituality/ thread: Key experiences: Visiting designers to talk about their craft, Local pupils from Cirencester college Key reflection:-</p> <ul style="list-style-type: none"> • 'A good steward should be able to maximize anything that God has given them.' <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Create 3D products using patterns pieces and seam allowance. • Understand pattern layout. • Decorate textiles appropriately i.e. tie dye (often before joining components). • Pin and tack fabric pieces together. 	<p>Running stitch: a simple needlework stitch consisting of a line of small even stitches which run back and forth through the cloth without overlapping. Overstitch: a stitch made over an edge or over another stitch. Cross stitch: a stitch formed of two stitches crossing each other. This stitch is stronger than the running stitch as it works in several directions. Applique: literally means 'applied'; appliqué is now often used purely as decoration. It is ornamental needlework in which pieces or patches of fabric in different shapes and patterns are sewn or stuck onto a larger piece to form a picture or pattern. Pattern: a model or design used as a guide. Template: a shaped piece of rigid material used as a</p>

	<ul style="list-style-type: none"> • Construct products using permanent joining techniques • Make modifications as they go along • Pin, sew and stitch materials together create a quality product <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved 	<ul style="list-style-type: none"> • Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision). • Combine fabrics to create more useful properties. 	<p>pattern for processes such as cutting out.</p>
<p>Y5/6 (Year B)</p> <p>Grab and Go Make an all-in-one, handheld dish.</p>	<p>Design</p> <ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models • Construct products using permanent joining techniques • Make modifications as they go along • Pin, sew and stitch materials together create a quality product <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved 	<p>Curriculum Link: Aztecs History (guacamole/salsa/tortilla/hot chocolate) Link to previous learning: Opportunities to explore spirituality/ thread: Key experiences: Cooking on an open fire Key reflection:-</p> <ul style="list-style-type: none"> • ‘Sharing a meal with others strengthens the bonds that unite.’ <p>DT skills/knowledge:</p> <ul style="list-style-type: none"> • Prepare food products taking into account the properties of ingredients and sensory characteristics. • Weigh and measure using scales. • Select and prepare foods for a particular purpose. • Show awareness of a healthy diet e.g. the eatwell plate. • Use a range of cooking techniques. • Know where and how ingredients are grown and processed. • Identify and sort different hand-held snacks from around the world <p>Identify food types from around the world</p> <ul style="list-style-type: none"> • Sort ingredients using the eatwell plate • Revise and practise technical skills - chopping, cutting, mixing, grating, combining, mashing etc... 	<p>Hand-held - to be held by the hand, not requiring utensils Vegan - no animal products of any sort Vegetarian - no meat products Gluten - a mixture of two proteins present in cereal grains, especially wheat, which is responsible for the elastic texture of dough. Tortilla - a thin, usually round, piece of bread made from maize Salsa - a spicy sauce originated from Latin America Guacamole - a dish of mashed avocado, seasoning, onion and chilli peppers</p>

<p>Y5/6 (Year B) Mechanisms</p> <p>Rainforests / Eco focus cam toy</p>	<p>Design</p> <ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models • Construct products using permanent joining techniques • Make modifications as they go along • Pin, sew and stitch materials together create a quality product <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved 	<p>Curriculum Link: Rainforest Geography Link to previous learning: Pneumatics Y3/4 Opportunities to explore spirituality/ thread: Key experiences: Speaker in whose job it is to find solutions to environmental issues- Dale Vince? Hugh Yarrow? Learn about our solar panels- meet the engineers who helped us to get solar panels. Key reflection:- Do you think humans have the means to save the environment? Why is it important for us to be curious about nature, the world, the environment? In what ways can we show we appreciate the environment? DT skills/knowledge:</p> <ul style="list-style-type: none"> • Use the correct terminology for tools materials and processes. • Use bradawl to mark hole positions. • Use hand drill to drill tight and loose fit holes. • Cut strip wood, dowel, square section wood accurately to 1mm. • Join materials using appropriate methods. • Stiffen and reinforce complex structures. • Develop a technical vocabulary appropriate to the project. • Use mechanical systems such as cams, pulleys and gears. • Use electrical systems such as motors, bulbs, switches and/or buzzers. 	<p>Cam - a device by which circular motion may be transformed into stop-and-start or back-and-forth motion. Pulley - wheel with a grooved rim around which a cord passes, which acts to change the direction of a force applied to the cord and is used to raise heavy weights. Gear - mechanical part with teeth that interlock with another gear or belt to transfer motion and power while changing speed, or direction in a mechanical system linear motion - when an object moves in a straight line rotary motion - takes place around a fixed axis, meaning that it doesn't wobble or move up and down Off-centre -not quite in the centre/middle of something crank handle - a device for controlling the movement Axle - a rod or spindle (either fixed or rotating) passing through the centre of a wheel or group of wheels frame structure cam follower - the part of a machine in sliding or rolling contact with a rotating cam and given motion by it.</p>
<p>Y5/6 (Year B) Electrical Vehicles</p>	<p>Design</p> <ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques <p>Make</p> <ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models • Construct products using permanent joining techniques • Make modifications as they go along 	<p>Curriculum Link: Electricity Science Link to previous learning: Y3/4 Electrical toys Opportunities to explore spirituality/ thread: Key experiences: Robot Wars visit Key reflection: - Reflect on forces/ energy as elements 'beyond us' - elements that exist regardless of human beings DT skills/knowledge:</p> <ul style="list-style-type: none"> • Develop a technical vocabulary appropriate to the project. • Use mechanical systems such as cams, pulleys and gears. • Use electrical systems such as motors, bulbs, switches and/or buzzers. • Use construction kits to practise attaching wheels and axles to chassis using the two different methods • Experiment with different ways to make the vehicles bodies 	<p>Vehicle - something used to transport people/goods etc. Wheel - a circular object that rotates on an axle Body - the section mounted onto the chassis Cab - the area of the vehicle where the driver sits Axle – a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle. Axle holder – the component through which an axle fits and rotates. Chassis – the frame or base on which a vehicle is built. Friction – resistance which is encountered when two things rub together. Dowel – wooden rods used for making axles to hold wheels.</p>

	<ul style="list-style-type: none">• Pin, sew and stitch materials together create a quality product <p><u>Evaluate</u></p> <ul style="list-style-type: none">• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests• Record their evaluations using drawings with labels• Evaluate against their original criteria and suggest ways that their product could be improved		
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