# DESIGN AND TECHNOLOGY LONG TERM PLAN

LABURNUM PRIMARY SCHOOL & NURSERY
CHALLENGE • ACHIEVE • RESPECT • EFFORT

| | Autumn 2 | Spring 2 | Summer 2 |
|---|---|---|---|
| **Year 1** | **Mechanisms** – To know about the movement of simple Mechanisms - **Wheels and Axles - Vehicles** | **Food** – Preparing fruit and vegetables: chopping – **Vegetable soup** | **Joining - Structures** Investigating Simple Structures – **Making Bridges from a range of materials.** |
| **Year 2** | **Joining - Textiles** – Joining two pieces of material using simple stitches to make a 3d product – **Christmas decoration** | **Food** – Preparing fruit and vegetables: peeling, grating, chopping – **Bedfordshire Clangers** | **Mechanisms** – To know about the movement of simple Mechanisms – **Sliders and Levers – Moving Pictures (Under the sea)** |
| **Year 3** | **Joining - Structures** – Basic wooden picture frame to display sewing with decorative button | **Food** – Designing and making bread: kneading – **Bread of different shapes / flavours** | **Mechanical Systems** – How mechanical systems create movement – **Pneumatic Toys - frogs** |
| **Year 4** | **Food** – Melting method and sugar substitute – **Flapjacks** | **Electrical Systems** – To use simple circuits and switches in a functional product - **Lamp / Lighthouse** | **Joining - Structures**– **Bird feeder with 3d wooden frame** |
| **Year 5** | **Food** – Pureeing and following recipes – **Dips (various)** | **Joining - Textiles** – Making a useful produce with a paper pattern – **bags or purses** | **Mechanical Systems** – Levers and Pulleys – **Moon buggies from wood.** |
| **Year 6** | **Electrical Systems** - Electronics: More complex switches – **Christmas Lighting** | **Joining - Structures** – Stronger structures using different materials – **a shelter that is practical for purpose** | **Food** – Frying and writing recipes – **Savoury dinner / party food** |

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In Key Stage 1 the emphasis is on designing through a range of creative and practical activities. It should be based on imagination and own experience through story books, home and school, parks and gardens, local and wider community. They should explore and evaluate existing products before thinking of their own designs and products. They should talk about their designs and the intention of use.

Design – Design purposeful and appealing products for themselves and others based on own design criteria.

Make – Select and use a RANGE of tools for cutting, shaping, joining and finishing.

Evaluate – Evaluate their own products against their design criteria.

## YEAR 1 – Skills to introduce: Wheels and axles, Healthy Food, Structures

| Unit | Knowledge & Key Questions | Key Vocabulary |
|---|---|---|
| **Autumn Term**<br><br>**Mechanisms**<br>**Wheels and Axles**<br><br>**Fire Engines**<br>**(Projects on a Page – Wheels and Axles)** | **Vehicles (e.g. Fire Engines)** – Children to look at how vehicles move through exploration of toy cars/vehicles.<br><br>**Design:**<br>▪ Children to design a fire engine or other vehicle.<br>**Make:**<br>▪ Select from and use a range of materials and tools for constructing.<br>▪ Explore how their model can be made stronger, if need be.<br>▪ Measure, mark out and cut materials with support.<br>▪ Assemble, join and combine materials with different components.<br>**Evaluate:**<br>▪ Talk about their design ideas and evaluate against design criteria<br>**Technical Processes:**<br>▪ To know about the movement of simple mechanisms | Wheel<br>Axle<br>Model<br>Materials<br>Cardboard<br>Design<br>Plan<br>Evaluate<br>Measure<br>Ruler<br>Equipment<br>Tools<br>Saw<br>Glue |
| **Spring Term**<br><br>**Food**<br><br>**Vegetable Soup**<br>**(Projects on a Page – Preparing Fruit and Vegetables)** | **Vegetable Soup –** Children to investigate and try different types of vegetable soup (e.g. carrot, leek/potato, tomato).<br>To 'design' their own soup using preferred vegetables.<br>The focus to be on preparing vegetables safely and hygienically and then EVALUATE their soup.<br><br>**Design:**<br>▪ Children to explore different products (e.g. vegetable soups)<br>▪ To know where the food product comes from<br>▪ Introduce that vegetables are grown and are full of nutrients<br>**Make:**<br>▪ To prepare food using hygienic and safe procedures<br>▪ Use techniques such as cutting, peeling, grating<br>**Evaluate:**<br>▪ To make comments about their product and ask questions | Knife<br>Saucepan<br>Measuring Jug<br>Chopping Board<br>Recipe<br>Instructions<br>Peeler<br>Wooden Spoon<br>Boil<br>Blend/Blender<br>Liquid<br>Hob |

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| **Summer Term**<br><br>**Joining - Structures**<br><br>**Making bridges (Projects on a Page – Freestanding Structures)** | **Bridges** – children to look at the famous bridges and consider the strength and structures of what makes a bridge secure.<br><br>**Design:**<br>▪ Building on making stronger free standing structures, children to design their own bench using drawing and labelling.<br>▪ State what their products are for.<br>**Make:**<br>▪ Use a range of materials and tools for constructing.<br>▪ Explore how their model can be made stronger, if need be.<br>▪ Measure, mark out and cut materials with support.<br>▪ Assemble, join and combine materials with different components.<br>**Evaluate:**<br>▪ Discuss their design ideas and evaluate against design criteria<br>**Technical Processes:**<br>▪ How free standing structures can be made stronger | Cut<br>Fold<br>Join<br>Fix<br>Construct<br>Plastic/Wood/Cardboard/ Paper<br>Thick/Thin<br>Straight<br>Curved<br>Weak<br>Strong |

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In Key Stage 1 the emphasis is on designing through a range of creative and practical activities. It should be based on imagination and own experience through story books, home and school, parks and gardens, local and wider community. They should explore and evaluate existing products before thinking of their own designs and products. They should talk about their designs and the intention of use.

Design – Design purposeful and appealing products for themselves and others based on own design criteria.

Make – Select and use a RANGE of tools for cutting, shaping, joining and finishing.

Evaluate – Evaluate their own products against their design criteria.

## YEAR 2 – Progression of skills: Strengthening Structures/joining, Sliders and Levers, Food skills

| Unit | Knowledge & Key Questions | Key Vocabulary |
|---|---|---|
| **Autumn Term**<br><br>**Joining - Textiles**<br><br>**Felt decoration (3D)**<br>**(Projects on a Page – Templates and Joining 2D shape to 3D product)** | **Felt Decoration** – Children to be taught sewing stitches to join 2 pieces of material together. They need to design their product to make it appealing for the user.<br><br>**Design:**<br>▪ Use simple design criteria -drawing and labelling<br>**Make/Technical Processes:**<br>▪ Joining 2 pieces of identical fabrics (patterns) together to make a 3D textiles product (e.g. Christmas Tree Decoration)<br>**Evaluate**<br>▪ Evaluate against design criteria | Fabric/Material/Textile<br>Needles<br>Thread/Wool/Cotton<br>Design<br>Pin<br>Stitch<br>Sew<br>Fold<br>Join<br>Stuff |
| **Spring Term**<br><br>**Food**<br><br>**Bedfordshire Clanger (Sandy link)**<br>**(Projects on a Page Preparing Healthy Fruit and Vegetables)** | **Clanger** – Children to investigate different fillings in both sweet and savoury pies. To explore different food groups when considering designing their pie/clanger. A visit from Gunn's Bakery would enhance this learning.<br>**Design and Knowledge:**<br>▪ Children to explore different products related to their design<br>▪ To know where the food product comes from<br>▪ To know that food is farmed, grown or caught<br>▪ Children to know that they should eat 5 fruit and vegetable portions a day and begin to learn about the 'Eat well' plate.<br>**Make:**<br>▪ To prepare food using hygienic and safe procedures<br>▪ Use techniques such as cutting, peeling, grating<br>**Evaluate:**<br>▪ To evaluate against their own design criteria | Ingredients<br>Chopping Board<br>Vegetable Knife<br>Grater<br>Baking Tray<br>Oven<br><br>**If Making Own Pastry**<br>Weigh<br>Mix<br>Knead<br>Rolling Pin<br>Baking Tray |

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| **Summer Term**<br><br>**Mechanisms**<br>**Sliders and Levers**<br><br>**Moving pictures (sliders and levers)**<br>**(Projects on a Page – Sliders and Levers)** | **Moving Pictures –** Children to investigate pop up books and other moving cards/pictures. They will need to make some mock ups using levers, split pins (pivots) and then design their own moving picture, using a form of transport.<br>This could result in a summer picture or moving postcard.<br>**Design:**<br>▪ Children to investigate pop up books and moving books to develop an understanding of their Mechanisms<br>▪ Children to learn about pivots and levers<br>▪ To plan mock ups as part of their design and understanding (Possible Twinkl resource examples)<br>▪ Explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products<br>▪ Design purposeful, functional, appealing products for themselves and other users based on design criteria<br>**Make:**<br>▪ Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]<br>▪ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics<br>**Evaluate:**<br>▪ Evaluate their ideas and products against design criteria<br>**Technical Processes:**<br>▪ Begin to measure, cut, mark out safely and accurately<br>▪ To know about the movement of simple mechanisms such as levers and sliders. | Movement<br>Pop Up<br>Pull<br>Push<br>Slider<br>Lever<br>Pivot<br>Split Pin<br>Function<br>Assemble<br>Materials<br>Design |

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In Lower KS2 we follow on from KS1 but begin to design with more purpose and intent. They should gather information about the needs and wants of a product and generate ideas focusing on the needs of the user. Children should be beginning to be more accurate in our measuring, cutting, joining and finishing. When evaluating, children should refer to their design.

## YEAR 3 – Progression of skills: Mechanical Systems (Pneumatic, Levers, Linkages), cross sectional diagrams, Food, Strengthening Structures

| Unit | Knowledge & Key Questions | Key Vocabulary |
|---|---|---|
| **Autumn Term**<br><br>**Joining - Structures**<br>**Wooden Structure**<br>**Textiles (revisit)**<br><br>**To cut and join strips of wood with accuracy to make a picture frame.**<br><br>**To practice a range of stiches to create a design.**<br>**To incorporate a button.**<br><br>**(Projects on a Page Textiles Frame Structures)** | **3D wooden picture frame** to display textile design (textile design on binca or felt).<br><br>**Design:**<br>▪ Children progress to focus on the needs and intended use/users of their product.<br>▪ Share and clarify ideas through discussion<br>▪ Create designs using annotated sketches<br>▪ Generate realistic ideas, focusing on the needs of the user<br>**Make:**<br>▪ Begin to measure, mark out and cut with increasing accuracy<br>▪ Assemble, join and combine materials with increasing accuracy.<br>▪ Apply a range of finishing techniques with some accuracy and intent<br>**Evaluate:**<br>▪ Refer to their design as they make<br>▪ Use their design criteria to evaluate against design criteria and with the user in mind. | Wood<br>Vice<br>Hacksaw<br>Frame<br>Join<br>Corners<br>Binca<br>Felt<br>Needle<br>Running Stitch<br>Button<br>Cross Stitch<br>Aesthetic<br>Strengthen |
| **Spring Term**<br><br>**Food**<br><br>**Egyptian Breads**<br>**(Projects on a Page Healthy and Varied Diet)** | **Bread** - Children to investigate different breads with a variety of flavours and fillings.<br><br>**Design:**<br>▪ Children to use their learning of Egyptian diet and food items when designing their product.<br>▪ Children to look at and taste the different ingredients that could be used in their bread (e.g. raisins, dates, honey)<br>▪ Children to understand where the foods come from in the wider world (grown, caught, farmed etc.)<br>**Make:**<br>▪ To use a wider range of techniques including grating, chopping, slicing, baking, kneading<br>▪ To prepare hygienically and ideally use a heat source (e.g. oven)<br>**Evaluate:**<br>▪ Refer to their design criteria to evaluate their own products. | Investigate<br>Research<br>Hygiene<br>Grams/Kilograms<br>Knead<br>Grate (?)<br>Bake<br>Knead<br>Rise (As in Bread)<br>Yeast<br>Scales<br>Temperature (Centigrade)<br>Golden Brown |

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| **Summer Term**<br><br>**Mechanical Systems**<br>**Pneumatic Movement**<br><br>**Moving toys**<br>**(Projects on a Page Pneumatics)** | **Pneumatics –** Moving toys<br><br>**Design**:<br>▪ Children progress to focus on the needs and intended use/users of their product.<br>▪ Share and clarify ideas through discussion<br>▪ Develop their own design criteria and use these to inform their ideas<br>▪ Create designs using annotated sketches or cross sectional drawings<br>▪ Use computer aided design to develop and communicate their ideas<br>▪ Generate realistic ideas, focusing on the needs of the user<br>**Make**:<br>▪ Select tools and materials with intent – suitable for the model<br>▪ Explain the choice of materials and tools for the model<br>▪ Begin to Measure, mark out and cut with accuracy<br>▪ Assemble, join and combine materials with increasing accuracy.<br>▪ Apply a range of finishing techniques with some accuracy and intent<br>**Evaluate**:<br>▪ Refer to their design as they make<br>▪ Use their design criteria to evaluate with increasing intent.<br>**Technical Knowledge** –<br>▪ How to apply knowledge from Science and maths to help design and make products that work<br>▪ How mechanical systems such as levers, linkages and pneumatic systems create movement. | Components<br>Pipe/Tubing<br>Syringe<br>Pump/Plunger<br>Pressure<br>Pneumatic<br>Movement<br>Inflate Deflate<br>Seal |

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In Lower KS2 we follow on from KS1 but begin to design with more purpose and intent. They should gather information about the needs and wants of a product and generate ideas focusing on the needs of the user. Children should be beginning to be more accurate in our measuring, cutting, joining and finishing. When evaluating, children should refer to their design.

**YEAR 4 – Progression of skills:** Electrical Circuits, Strengthening Structures based on previous, exploded diagrams, learning, Food – healthy eating and following a recipe.

| Unit | Knowledge & Key Questions | Key Vocabulary |
|---|---|---|
| **Autumn Term**<br><br>**Food**<br><br>**Honey, Oat and Spice Cakes**<br>Focus on healthy eating, learn about how honey can be used a substitute for sugar.<br>http://cookit.e2bn.org/historycookbook/958-honey-oat-and-spiced-cakes.html<br>**(Projects on a Page Healthy and Varied Diet)** | **Flapjacks –** Children to design a flavoured flapjack or oat biscuit using honey as a sweetener.<br><br>**Design:**<br>▪ Children to use their learning of Roman diet and food items when designing their product.<br>▪ Children to look at and taste the different ingredients that could be used in their design (e.g. apple. Apricot, raisins)<br>▪ Children to understand where the foods come from in the wider world (grown, caught, farmed etc.)<br>**Make:**<br>▪ To use a wider range of techniques including grating, chopping, slicing, baking, kneading<br>▪ To prepare hygienically and ideally use a heat source (e.g. oven)<br>▪ To read and follow recipes<br>**Evaluate:**<br>▪ Refer to their design criteria to evaluate their own products. | melt<br>Grate (apples)<br>Dice (as in fruit)<br>Spoon (as in verb)<br>Spice<br>Sweetener (honey)<br>Bake<br>Golden brown<br>Temperature (Centigrade)<br>Recipe<br>Method |
| **Spring Term**<br><br>**Electrical Systems**<br>**Electrical Circuits**<br><br>**Windmill/Lighthouse/ Torch**<br>Electrical Circuits based on light and dark or movement<br>https://www.twinkl.co.uk/resource/design-and-make-an-electrical-model-activity-t2-d-156<br>**(DT Projects on a Page for Simple Circuits & Switches and Simple Programming and Controls)** | **Electrics and Circuits within a model –** children to design torch/lighthouse etc. to incorporate a light.<br>**Design**:<br>▪ Children progress to focus on the needs and intended use/users of their product<br>▪ Share and clarify ideas through discussion<br>▪ Design with both functional and aesthetic qualities in mind.<br>▪ Create designs using exploded diagrams.<br>▪ Use computer aided design to develop and communicate their ideas<br>▪ Generate realistic ideas, focusing on the needs of the user<br>**Make**:<br>▪ Select suitable tools and materials for the model<br>▪ Explain the choice of materials and tools for the model<br>▪ Begin to Measure, mark out and cut with accuracy<br>▪ Assemble, join and combine materials with more accuracy<br>▪ Apply a range of finishing techniques with increased accuracy and intent<br>**Evaluate**:<br>▪ How well have products been designed?<br>▪ How well have they been made?<br>▪ How well did the product achieve their purposes?<br>▪ How well did the product work?<br>▪ What went right/wrong?<br>**Technical Knowledge:**<br>▪ How simple electrical circuits and components can be used to make a functional product<br>▪ How scientific and mathematical knowledge can help to design products | Series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip<br><br>Control, program, system, input device, output device<br><br>User, purpose, function, prototype, design criteria, innovative, appealing, design brief |

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| **Summer Term**<br><br>**Joining - Structures (shell)**<br><br>**Shell structures using computer aided design (if possible)**<br>**(Projects on a page Shell structures (computer aided) Using wood in addition)** | **Boxes/3D frames** - Children will look at different 3D shell structures/boxes from a range of materials. They will compare the different materials and consider the functional use of each. (E.g. why don't cereals come in a wooden box? Is a jewellery box made from cardboard a good idea?).<br>Children to consider the best materials for a bird feeder and consider what features are needed in their designs.<br>They will use different lengths of wood to create a shell structure in order to produce a bird feeder.<br>They may wish to add suitable embellishments from their designs.<br><br>**Design:**<br>▪ To look at a range of existing products when designing (e.g. gift boxes) and look at 'nets'<br>▪ Design your product through pattern pieces, mock ups or ICT<br>▪ Design with an aim for functional use.<br>**Make:**<br>▪ Select appropriate tools from a wider choice<br>▪ Measure, cut and join with accuracy in mind.<br>**Evaluate:**<br>▪ Evaluate existing products as well as your own.<br>▪ Evaluate against your own design and suggest improvements | shell structure,<br>net,<br>cube,<br>cuboid,<br>edge,<br>face,<br>length,<br>width,<br>marking out<br>adhesive,<br>joining/assembling accuracy,<br>reduce – reuse - recycle,<br>corrugating,<br>evaluating,<br>design brief,<br>design criteria,<br>innovative,<br>prototype |

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In Upper KS2, the progression focuses on carrying out research at a wider level when designing products through (surveys, interviews, questionnaires and web based resources). Identify the needs of the user when thinking of your design and generate innovative ideas based on this research. Children should begin to compile a list of equipment and materials needed and formulate step by step plans. Focus on accuracy should be key when measuring, marking, cutting, assembling, joining etc. Children should learn how to evaluate critically – and look at the cost of making their products, how innovative they are and what impact the products have beyond their purpose.

**Year 5 Progression of Skills** – Sewing/Joining by designing a pattern and adding embellishments, Food – pureeing and healthy recipes, Mechanical Systems – pulleys and gears.

| Unit | Knowledge & Key Questions | Key Vocabulary |
|---|---|---|
| **Autumn Term**<br><br>**Food**<br><br>**Dips and a side**<br>(consider, in your design what side dish would go well with a dip<br>E.g. bread, crackers, crudités)<br>**(Projects on a Page Celebrating Culture and Seasonality)** | **Dips and a side –** Children to follow a recipe, focus on savoury and healthy dishes.<br><br>**Design:**<br>▪ Explore existing 'dips' what can be used as a base? (fruit, veg, beans) What things are added? (herbs, spices, yoghurt, cream, mayonnaise)<br>▪ That different food and drink contain different substances that are needed for health<br>▪ Understand how food is grown, farmed etc. to make it safe to eat<br>▪ To create own design criteria<br>▪ To explore combinations of different flavours and ingredients (in small groups)<br>**Make:**<br>▪ To make a basic flatbread and add appropriate flavourings<br>▪ To make a 'dip' of choice using chosen ingredients<br>▪ To apply techniques taught-cutting, slicing, measuring, kneading, mixing, grating.<br>▪ To combine different ingredients in different ways to produce an end product | Flavour<br>Herb<br>Spice<br>Combine<br>Mix<br>puree<br>Slice<br>Knead<br>Bake/cook |
| **Spring Term**<br><br>**Joining - Textiles**<br><br>**Make a bag/purse or pouch**<br>**(Projects on a Page – using computer aided design in Textiles)** | **Bag or Purse –** Children to look at a range of designs and designers, past and present to compare before designing their own and adding embellishments and fastenings.<br><br>**Design:**<br>▪ Research products of time to inform planning (including web based resources)<br>▪ Create Prototypes to show ideas<br>▪ Design pattern pieces<br>**Make:**<br>▪ Accurate and Precise measurements so that joins and fastening are in the right place (e.g. hole in pendant, button on bag)<br>▪ Produce own step by step instructions of making the design – including tools and materials<br>▪ Accurately apply a range of finishing techniques (e.g., fastenings, patterns on jewellery pendant)<br>**Evaluate:**<br>▪ Detailed evaluation of existing products (during designing) as well as critically evaluating your own and each other's' work<br>T**echnical Processes:**<br>▪ Strengthening 3D products using prior knowledge | Purposeful<br>Functional<br>Fastenings<br>Hook and eye<br>Zip<br>Press stud<br>Pinking shears<br>Pattern /prototype<br>Tacking<br>Pins<br>needles<br>Sewing machine (if used) |

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| **Summer Term**<br><br>**Mechanical Systems**<br>**Pulleys and Gears**<br><br>**Design and make a vehicle that incorporates a pulley or gear**<br>**(Projects on a Page Pulleys or Gears)** | **Vehicles with a pulley or gear (e.g. Moon buggy)** - To design and make a model wooden moon buggy with added function of a pulley (to lift moon rock) or gear. Children to make a simple wooden shell with wheels and think about adding a pulley or gear.<br><br>**Design:**<br>▪ To research structures of existing buggies<br>▪ To identify appropriate materials<br>▪ To make mock ups<br>▪ To use exploded diagrams<br>**Make:**<br>▪ To measure, mark and cut accurately<br>▪ To choose appropriate materials to strengthen<br>▪ To apply finishing techniques<br>▪ To join materials securely<br>**Evaluate**<br>▪ Can you lift a moon rock (Lego piece) | Pulley<br>Gear<br>Drive Belt<br>Rotation<br>Mechanical System<br>Spindle<br>Axle |

In Upper KS2, the progression focuses on carrying out research at a wider level when designing products through (surveys, interviews, questionnaires and web based resources). Identify the needs of the user when thinking of your design and generate innovative ideas based on this research. Children should begin to compile a list of equipment and materials needed and formulate step by step plans. Focus on accuracy should be key when measuring, marking, cutting, assembling, joining etc. Children should learn how to evaluate critically – and look at the cost of making their products, how innovative they are and what impact the products have beyond their purpose.

## **Year 6 Progression of Skills** – Electrical Systems – a circuit with a switch within a more complex design, Structures – moving the design beyond a cuboid

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|---|---|---|
| **Autumn Term**<br><br>**Electrical Systems**<br>**Electrical Systems (link with science)**<br><br>**Christmas lights display**<br>**(Projects on a Page**<br>**More complex switches)** | **Christmas Lights Display –** Children will work alongside their science to design an electrical system that they can control such as an alarm or a traffic light system<br><br>**Design:**<br>▪ To link to science knowledge<br>▪ To explore existing systems<br>▪ To make mock ups<br>▪ To use exploded drawing<br>▪ To produce own design criteria<br>**Make:**<br>▪ To join materials safely and securely<br>▪ To identify ways to disguise Mechanical Systems<br>▪ To apply knowledge of electricity to create the system<br>**Evaluate:**<br>▪ To evaluate effectiveness based on design criteria | Reed Switch, Toggle Switch, Push-To-Make Switch, Push-To-Break Switch, Light Dependent Resistor (LDR), Tilt Switch<br><br>Light Emitting Diode (LED), Bulb, Bulb Holder, Battery, Battery Holder, USB Cable, Wire, Insulator, Conductor, Crocodile Clip<br><br>Control, Program, System, Input Device, Output Device, Series Circuit, Parallel Circuit |
| **Spring Term**<br><br>**Joining - Structures**<br><br>**Famous Designs and Designers**<br>**(Projects on a Page**<br>**Frame Structures)** | **Frame Structure –** Children to solve 'The great escape' problem to design a shelter based on research.<br><br>**Design:**<br>▪ Research famous designers and inventors to inform the design of your own product (Morse/Anderson)<br>▪ Generate designs through annotated sketches, cross sectional and exploded diagrams, prototypes/pattern pieces and ICT<br>▪ Use previous technical knowledge to problem solve when designing and making<br>▪ Use knowledge of famous designs and research to explain the effectiveness of the product<br>**Make:**<br>▪ Use a wide range of methods to strengthen, stiffen and reinforce complex structures<br>▪ To use knowledge of pulleys, cams, levers and linkages to influence the finished product<br>▪ Apply knowledge of computing to program, monitor and control the product<br>**Evaluate:**<br>▪ Evaluate the effectiveness of the product based on the design criteria | Frame Structure, Stiffen, Strengthen, Reinforce, Triangulation, Stability, Shape, Join, Temporary, Permanent, Design Brief, Design Specification, Prototype, Annotated Sketch, Purpose, User, Innovation, Research, Functional Vice, Hack Saw, Clamp, Sand Paper |

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| **Summer Term**<br><br>**Food**<br><br>**Savoury Meals (e.g. pasta and sauce)**<br>**(Projects on a Page Celebrating Culture and Seasonality)** | **Savoury Meals (e.g. pasta and sauce) –** In KS2, children are taught how to read and follow a recipe. They need to make a 'light lunch' (e.g. pasta and sauce, that incorporate a range of techniques such as blending, chopping, slicing, boiling or frying.<br>**Design**<br>▪ To research popular pasta dishes.<br>▪ Research flavour combinations (tomato and ham, cheese and onion etc.)<br>▪ Consider allergies<br>▪ Use information on food labels to inform choices<br>▪ Consider costings and being able to produce them 'en masse'<br>▪ To use previous skills and knowledge to inform their design<br>▪ To produce own design criteria<br>**Make:**<br>▪ To use previous skills of food preparation to prepare ingredients<br>▪ To mix ingredients based on research and planning<br>▪ To safely and hygienically prepare their chosen snack<br>**Evaluate:**<br>▪ Whole class to feedback and evaluate products (use of questionnaires?)<br>▪ To evaluate based on design criteria | Pasta (look at different shapes and names)<br>Boil<br>Simmer<br>Drain<br>colander<br>Al dente<br>Sauce<br>Fry/sauté |