# EYFS - Junk Modelling (Links to EAD)

## Vocabulary:

| | |
|---|---|
| Join<br>Stick<br>Cut<br>Bend<br>Slot | Scissors<br>Measure<br>Materials<br>Fix |

| Skills | Knowledge |
|---|---|
| - Making verbal plans and material choices.<br>• Developing a junk model.<br>• Improving fine motor/scissor skills with a variety of materials.<br>• Joining materials in a variety of ways (temporary and permanent).<br>• Joining different materials together.<br>• Describing their junk model, and how they intend to put it together.<br>• Giving a verbal evaluation of their own and others' junk models with adult<br>support.<br>• Checking to see if their model matches their plan.<br>• Considering what they would do differently if they were to do it again.<br>• Describing their favourite and least favourite part of their model. | • To know there are a range to different materials that can be used to make a<br>model and that they are all slightly different.<br>• Making simple suggestions for how to fix their junk model. |

## Year 1 Autumn Term: Structures
## Stable structures - pencil pots

## Vocabulary:

| | | |
|---|---|---|
| Better | Explain | Stable |
| Cut | Freestanding | Structure |
| Design | Join | Unstable |
| Dislike | Like | User |
| Even | Product | Worse |

| Skills | Knowledge |
|---|---|
| ● Thinking about what others might want from a design.<br>● Beginning to recognise how products and designs in the world around us solve certain needs.<br>● Considering who they are designing for – identifying the user.<br>● Stating what they intend to make and why – identifying the purpose.<br>● Talking about ideas, with purpose and user in mind.<br>● Talking about existing products when generating ideas.<br>● Using basic drawing skills to communicate ideas.<br>● Choosing between a small number of materials, ingredients or components.<br>● Explaining their choices based on personal experiences.<br>● Requesting equipment appropriate to the purpose (e.g. scissors for cutting, glue for joining).<br>● Beginning to use objects with a fixed width or length to create even | ● Recognising that different structures are used for different purposes.<br>● Exploring the features of structures.<br>● Describing structures as buildings or freestanding structures.<br>● Making stable structures from card.<br>● Creating supporting structures to aid stability.<br>● Using stable objects like cylinders to create structures.<br>● To know that the ‘user’ is the person who will use the product.<br>● To know that different users may want different things from a design.<br>● To know that who they are designing for makes a difference to what they design.<br>● To know that the purpose is what something is for.<br>● To know that existing products can help when deciding what to design. |

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| spacing of markings or cuts (e.g. a lolly stick).<br>● Refining their grip to cut competently and confidently.<br>● Cutting straight lines and evenly spaced lines.<br>● Beginning to cut large shapes and thicker materials like card.<br>● Discussing existing products, saying what they like about them.<br>● Comparing two products and discuss which is better for a specific purpose.<br>● Saying what they like about their peers' designs and products.<br>● Accepting feedback and understanding it is meant to improve their work. | ● To know that drawings are a way to explain ideas.<br>● To know that a plan is deciding what to do first and next.<br>● To know that different equipment does different things.<br>● To know the names of common pieces of equipment.<br>● To know that some products will be better than others.<br>● To know that their ideas or products can be made better.<br>● To know that their ideas can improve someone else's work.<br>● To know that other people's ideas can help make their work better.<br>● To know that a structure is something that has been made and put together.<br>● To know that stable structures do not topple.<br>● To know that shapes and structures with wide, flat bases or legs are the most stable.<br>● To know that adding weight to the base of a structure can make it more stable. |

## Year 1 Spring Term: Cooking and nutrition
## Fruit smoothies

## Vocabulary:

| | | | |
|---|---|---|---|
| Blender<br>Fruit<br>Healthy<br>Ingredients<br>Recipe | Smoothie<br>Vegetable<br>Seed<br>Root<br>Leaf | Stem<br>Flavour<br>Design<br>Cut<br>Juice | Table knife<br>Juicer<br>Plant<br>Bush |

| Skills | Knowledge |
|---|---|
| • Designing smoothie carton packaging by-hand.<br>• Learning where and how fruits and vegetables grow.<br>• Chopping fruit and vegetables safely to make a smoothie.<br>• Juicing fruits safely to make a smoothie.<br>• Identifying if a food is a fruit.<br>• Tasting and evaluating different food combinations.<br>• Describing appearance, smell and taste.<br>• Suggesting information to be included on packaging.<br>• Comparing their own smoothie with someone else's. | • To know that a blender is a machine which mixes ingredients together into a smooth liquid.<br>• To know that a fruit has seeds and a vegetable does not.<br>• To know that fruits grow on trees or vines.<br>• To know that vegetables can grow either above or below ground.<br>• To know that a vegetable is any edible part of a plant |

## Year 1 Summer term: Mechanisms
## Moving story book

## Vocabulary:

| | |
|---|---|
| Assemble | Sliders |
| Design | Stencil |
| Evaluation | Target audience |
| Mechanism | Template |
| Model | Test |

| Skills | Knowledge |
|---|---|
| • Explaining how to adapt mechanisms, using bridges or guides to control the movement.<br>• Designing a moving story book for a given audience.<br>• Following a design to create moving models that use levers and sliders.<br>• Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.<br>• Reviewing the success of a product by testing it with its intended audience. | • To know that a mechanism is the parts of an object that move together.<br>• To know that a slider mechanism moves an object from side to side.<br>• To know that a slider mechanism has a slider, slots , guides and an object.<br>• To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.<br>To know that in Design and technology we call a plan a ‘design’. |

## Year 2 Autumn term: Mechanisms
## Fairground wheel

## Vocabulary:

| | |
|---|---|
| Design brief<br>Design criteria<br>Evaluate<br>Frame<br>Model | Opinion<br>Rotate<br>Survey |

| Skills | Knowledge |
|---|---|
| ● Conducting simple surveys or discussions to gather opinions on what others need or like in a design.<br>● Knowing that a survey is used to find out what people like.<br>● Using a simple design brief that outlines the intended use, target user, and key features of the product, to create simple design criteria.<br>● Knowing that a design brief helps to decide what to make.<br>● Knowing that design criteria are the steps for making a product successful.<br>● Creating ideas with design criteria in mind.<br>● Referring to specific parts of existing products when generating ideas.<br>● Knowing that the design criteria help when thinking of ideas.<br>● Using labels to explain parts of a design, label materials, etc.<br>● Knowing that drawings can help explain how something works.<br>● Knowing that a label explains part of a drawing. | ● To know everyday objects have mechanisms.<br>● To know many things that move have parts inside to help them work.<br>● To know mechanisms usually limit unwanted movement.<br>● To know everyday objects utilise wheels and axles.<br>● To know wheels must be able to turn to work effectively.<br>● To know axles allow wheels to turn without falling off.<br>To know the features of a fairground wheel include the wheel, frame, pods, a base an axle and an axle holder. |

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| ● Choosing materials, ingredients or components from a wider range of materials, ingredients or components.<br>● Explaining their choices based on the properties of materials and components.<br>● Knowing some properties of materials like hard, soft, flexible, waterproof, strong etc.<br>● Following and recalling simple safety instructions.<br>● Knowing that some tools are sharp like scissors and knives.<br>● Choosing known geometric shapes when making.<br>● Beginning to shape objects to improve how they work.<br>● Knowing the names of some geometric shapes: triangle, pyramid, square, cube, circle, sphere.<br>● Considering balance in their finishing, like evenly spaced decoration.<br>● Discussing a range of existing products and saying what they like and dislike about them.<br>● Evaluating existing products against design criteria.<br>● Evaluating their ideas and creations against simple design criteria.<br>● Knowing that design criteria help to decide if their product is a success.<br>● Suggesting improvements to their peers' designs and products.<br>● Knowing that improve means to make something better.<br>● Knowing that their suggestions can improve someone else's work. | |

## Year 2 Spring Term: Cooking and nutrition
## Balanced diet (wraps)

## Vocabulary:

| | | | | |
|---|---|---|---|---|
| Appearance<br>Balanced<br>Carbohydrates<br>Combination<br>Dairy | Design<br>Design brief<br>Diet<br>Feel<br>Grate | Grater<br>Menu<br>Oils<br>Prepare<br>Proteins | Review<br>Scissors<br>Smell<br>Snip<br>Spread | Spreads |

| Skills | Knowledge |
|---|---|
| • Designing three wrap ideas.<br>• Chopping foods safely to make a wrap.<br>• Constructing a wrap that meets a design brief.<br>• Grating foods to make a wrap.<br>• Snipping smaller foods instead of cutting.<br>• Spreading soft foods to make a wrap.<br>• Identifying the five food groups.<br>• Learning about a balanced diet.<br>• Describing appearance, smell and taste.<br>• Tasting and evaluating different food combinations.<br>• Describing the information that should be included on a label | • To know that 'diet' means the food and drink that a person or animal usually eats.<br>• To know what makes a balanced diet.<br>• To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.<br>• To know that I should eat a range of different foods from each food group, and roughly how much of each food group.<br>• To know that 'ingredients' means the items in a mixture or recipe.<br>• To know how to cut, grate, snip and spread to prepare foods.<br>• To know how to review and give a score to evaluate |

## Year 2 Summer term: Textiles
## Pouches

## Vocabulary:

| | |
|---|---|
| Accurate | Sew |
| Fabric | Shape |
| Knot | Stencil |
| Pouch | Template |
| Running-stitch | Thimble |

| Skills | Knowledge |
|---|---|
| • Designing a pouch.<br>• Selecting and cutting fabrics for sewing.<br>• Decorating a pouch using fabric glue or running stitch.<br>• Threading a needle.<br>• Sewing running stitch, with evenly spaced, neat, even stitches to join fabric.<br>• Neatly pinning and cutting fabric using a template.<br>• Troubleshooting scenarios posed by teacher.<br>• Evaluating the quality of the stitching on others' work.<br>• Discussing as a class, the success of their stitching against the success criteria.<br>• Identifying aspects of their peers' work that they particularly like and why. | ● To know drawings are a way to explain ideas.<br>● To know that choosing different materials or components will affect what<br>the product does or looks like.<br>● To know the names of common pieces of equipment.<br>● To know that following instructions helps with safety.<br>● To know that spacing cuts or marks evenly can be useful.<br>● To know that texture is how something feels.<br>● To know their ideas or products can be made better.<br>● To know their final product might be different to their original idea.<br>● To know their ideas can make someone else's work better.<br>● To know other people's ideas can help make their work better.<br>● To know evenly spaced stitches help when following a pattern.<br>• To know that sewing is a method of joining fabric.<br>• To know that different stitches can be used when |

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| | sewing.<br>• To understand the importance of tying a knot after sewing the final stitch.<br>• To know that a thimble can be used to protect my fingers when sewing. |

## Year 3 Autumn term: Cooking and nutrition
## Eating seasonally (seasonal tarts)

## Vocabulary:

| | | | |
|---|---|---|---|
| Arid<br>Climate<br>Complementary<br>Country<br>Export | Import<br>Mediterranean<br>Mock up<br>Mountain<br>Peel | Polar<br>Seasonal<br>Seasons<br>Snip<br>Temperate | Texture<br>Tropical<br>Weather |

| Skills | Knowledge |
|---|---|
| • Describing how climate affects where foods grow.<br>• Identifying seasonal ingredients from the UK.<br>• Following the instructions within a recipe.<br>• Tasting seasonal ingredients.<br>• Peeling foods by hand or with a peeler.<br>• Cutting ingredients safely.<br>• Choosing ingredients based on a design brief.<br>• Describing the texture and flavour of ingredients.<br>• Describing the benefits of seasonal fruits and vegetables and the impact on<br>the environment. | • To know that seasonal means foods that grow in a given season in a given<br>country.<br>• To know some seasonal foods that grow in the UK and what season they<br>grow in.<br>• To know that eating seasonal foods can have a positive impact on the<br>environment.<br>• To know how to describe the flavour and texture of foods.<br>• To know how to cut and peel safely.<br>• To know that the appearance of food is as important as taste.<br>• To know that similar coloured fruits and vegetables often have similar<br>nutritional benefits. |

## Year 3 Spring term: Electrical systems
## Torches

## Vocabulary:

| | | | |
|---|---|---|---|
| Battery<br>Bulb<br>Buzzer<br>Cell<br>Component | Conductor<br>Copper<br>Design criteria<br>Electrical item<br>Electricity | Electronic item<br>Function<br>Insulator<br>Series circuit<br>Switch | Test<br>Torch<br>Wire |

| Skills | Knowledge |
|---|---|
| • Designing a torch, giving consideration to the target audience and creating both<br>design and success criteria focusing on features of individual design ideas.<br>• Making a torch with a working electrical circuit and switch.<br>• Using appropriate equipment to cut and attach materials.<br>• Assembling a torch according to the design and success criteria.<br>• Evaluating electrical products.<br>• Testing and evaluating the success of a final product. | • To understand that an electrical system is a group of parts (components) that<br>work together to transport electricity around a circuit.<br>• To understand common features of an electric product (switch, battery or<br>plug, dials, buttons, etc.).<br>• To list examples of common electric products (kettle, remote control etc.).<br>• To understand that an electric product uses an electrical system to work<br>(function).<br>• To know the name and appearance of a bulb, battery, battery holder and<br>crocodile wire to build simple circuits.<br>• To understand that electrical conductors are materials which |

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| | electricity can pass<br>through.<br>• To understand that electrical insulators are materials which electricity cannot<br>pass through.<br>• To know that a battery contains stored electricity that can be used to power<br>products.<br>• To know that an electrical circuit must be complete for electricity to flow.<br>• To know that a switch can be used to complete and break an electrical circuit. |

# Year 3 Summer term: Structures
# Product packaging

## Vocabulary:

| | |
|---|---|
| Computer aided design (CAD)<br>Feedback<br>Form<br>Function<br>Net | Shell structure<br>Tab<br>Three dimensional (3D) |

| Skills | Knowledge |
|---|---|
| ● Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences.<br>● Beginning to use 2D CAD software to communicate their ideas.<br>● Creating accurate shapes from templates.<br>● Cutting out more complex shapes accurately.<br>● Choosing shapes to suit the function of a product.<br>● Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements.<br>● Investigating and analysing a range of existing products by looking at their functionality and appeal.<br>● Reflecting on feedback to decide if and how it could be used to improve future iterations. | ● Beginning to understand how different structures are built.<br>● Strengthening structures by ribbing.<br>● Constructing a range of 3D shapes.<br>● To know that creating accurate shapes improves how they look and sometimes their function.<br>● To know good suggestions help give better feedback.<br>● To know that they can choose to use feedback or not.<br>● To know that a shell structure is a hollow shape with a thin outer layer.<br>● To know that 3D shapes can form structures.<br>● To know structures can be strengthened by manipulating materials and shapes. |

## Year 4 Autumn term: Cooking and nutrition
## Adapting a recipe (biscuits)

## Vocabulary:

| | | | | |
|---|---|---|---|---|
| Adapt | Comment | Fold | Multiplication | Target audience |
| Addition | Construct | Hygiene | Opinion | Texture |
| Buttery | Cream | Layout | Pounds | Unique |
| Budget | Crunchy | Market research | Sieve | Wooden spoon |
| Combine | Cuboid | Modify | Sift | |

| Skills | Knowledge |
|---|---|
| • Designing a biscuit within a given budget.<br>• Conducting market research.<br>• Following a baking recipe.<br>• Understanding safety and hygiene rules.<br>• Adapting a recipe.<br>• Evaluating an adapted recipe.<br>• Evaluating and comparing a range of products.<br>• Suggesting modifications. | To know that the amount of an ingredient in a recipe is known as the 'quantity.'<br>• To know that safety and hygiene are important when cooking.<br>• To know the following cooking techniques: sieving, measuring, stirring, cutting out<br>and shaping.<br>• To know the importance of budgeting while planning ingredients for a recipe.<br>• To know that products often have a target audience. |

# Year 4 Spring term: Textiles
# Fastenings (book sleeves)

## Vocabulary:

| | | |
|---|---|---|
| Aesthetic<br>Assemble<br>Book sleeve<br>Design criteria<br>Evaluation | Fabric<br>Fastening<br>Mock up<br>Net<br>Running stitch | Stencil<br>Target audience<br>Target customer<br>Template |

| Skills | Knowledge |
|---|---|
| • Writing design criteria for a product, articulating decisions made.<br>• Designing a personalised book sleeve.<br>• Making and testing a paper template with accuracy and in keeping with the design criteria.<br>• Measuring, marking and cutting fabric using a paper template.<br>• Selecting a stitch style to join fabric.<br>• Working neatly by sewing small, straight stitches.<br>• Incorporating a fastening to a design.<br>• Testing and evaluating an end product against the original design criteria.<br>• Deciding how many of the criteria should be met for the product to be considered successful.<br>• Suggesting modifications for improvement.<br>• Articulating the advantages and disadvantages of different fastening types. | • To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro.<br>• To know that different fastening types are useful for different purposes.<br>• To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions. |

## Year 4 Summer term: Mechanisms
## Pneumatic toys

## Vocabulary:

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|---|---|
| Exploded diagram | Mechanism |
| Function | Mechanical system |
| Input | Pivot |
| Level | Pneumatic system |
| Linkage | Thumbnail sketch |

| Skills | Knowledge |
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| ● Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences.<br>● Taking part in structured idea blasting sessions.<br>● Coming up with more ideas and considering the feasibility of their ideas in the classroom.<br>● Developing drawing and sketching skills with a focus on clarity and simplicity.<br>● Developing designs by adding detail and justifications about materials, tools, methods.<br>● Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (e.g. sketches, cross-sectional diagram, thumbnail sketches and exploded diagrams).<br>● Selecting equipment required for a series of tasks based on the plan. Explain why each piece is suitable for each stage. | ● Beginning to understand how mechanisms work.<br>● Recognising pneumatic systems in everyday objects (e.g. car boot, adjustable chair.)<br>● To know that a problem or need is something that a designer can help to solve.<br>● To know that extra information on drawings or diagrams can help the user understand a design or idea.<br>● To know that thumbnail sketches are less detailed quick sketches.<br>● To know that a cross-sectional diagram shows the inside of a product.<br>● To know that an exploded diagram shows how the parts of a product fit together.<br>● To know that different pieces of equipment will be used at different stages in a plan.<br>● To know that different tools and equipment have different dangers. |

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| ● Suggesting simple safety rules based on their understanding of tool dangers.<br>● Participating in discussions about classroom safety procedures.<br>● Cutting out more complex shapes accurately.<br>● Handle different sizes and types of scissors with confidence.<br>● Using PVA glue to join corrugated card and light wood (e.g. balsa wood).<br>● Choosing shapes to suit the function of a product.<br>● Painting or colouring precisely to improve the finish.<br>● Making facades from a range of materials.<br>● Sealing edges with tape to cover gaps in joins.<br>● Analysing why specific products, designers or inventors are successful.<br>● Evaluating their designs by comparing them against design criteria and considering feedback from peers to suggest improvements.<br>● Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements.<br>● Reflecting on feedback to decide if and how it could be used to improve future iterations. | ● To know that scissors are useful for cutting out complex shapes,<br>● To know that designers and inventors create products.<br>● To know that choices of materials and equipment can affect the final product.<br>● To know that feedback is ideas and suggestions from other people that can help improve their work.<br>● To know that they can choose to use feedback or not.<br>● To understand that a mechanical system can allow us to move something more easily.<br>● To know that mechanical systems have more than one mechanism that moves to make them work.<br>● To know that mechanical systems are often hidden in products to make them look more appealing.<br>● To know that pushing air can be used to move a mechanism.<br>● To know that pivots can be used to create more movement in the mechanical system.<br>● To know that a combination of mechanisms can improve a product. |

## Year 5 Autumn term: Mechanisms
## Gears and pulleys

## Vocabulary:

| | | |
|---|---|---|
| Annotate<br>Gear<br>Gear system<br>Input<br>Market research | Output<br>Problem statement<br>Pulley<br>Pulley system<br>Research | Sustainability<br>Teeth |

| Skills | Knowledge |
|---|---|
| ● Noticing wider-reaching problems or needs in the community.<br>● Identifying a wide range of needs and potential barriers through market research.<br>● Writing more complex problem statements that consider multiple factors and constraints.<br>● Creating more complex design criteria that require considering detailed user needs, environmental impact, materials and cost.<br>● Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality.<br>● Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design.<br>● Using a series of prototypes to refine and improve their designs.<br>● Consistently apply safety instructions.<br>● Select appropriate scissors to handle delicate cutting tasks and | ● That market research is a way of collecting information about problems or needs.<br>● That constraints are things that might stop our ideas being successful.<br>● That original and innovative ideas are different from what has been made before.<br>● That annotations are detailed labels and comments on diagrams.<br>● That risks are things that might happen.<br>● That hot glue creates a strong bond quickly.<br>● That is often better to choose safer equipment.<br>● That sustainability means thinking about the materials that were used to make a product and how the product was made.<br>● That their final product can still be improved by different materials or techniques.<br>● That evaluating their designs in detail will help them understand its |

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| challenging materials.<br>● Cutting patterns and drawings accurately.<br>● In supervised groups, using hot glue guns safely.<br>● Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly.<br>● Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects.<br>● Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects.<br>● Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost.<br>● Considering alternative materials, tools or techniques that could enhance the product.<br>● Providing feedback that is helpful, specific, and encouraging.<br>● Incorporating feedback from peers or users improves their product further, explaining the changes they made and the impact they had. | successful and less successful parts.<br>● That feedback should be positive, helpful and specific.<br>● That explaining how they used feedback to improve their design can help them create better products in the future. |

## Year 5 Spring term: Structures
## Bridges

## Vocabulary:

| | | | |
|---|---|---|---|
| Abutment | Evaluation | Predict | Suspension bridge |
| Accurate | File | Reinforce | Tenon saw |
| Arched bridge | Mark out | Research | Test |
| Beam bridge | Material properties | Sandpaper | Trust bridge |
| Coping saw | Measure | Set square | Wood |

| Skills | Knowledge |
|---|---|
| • Designing a stable structure that is able to support weight.<br>• Creating a frame structure with a focus on triangulation.<br>• Making a range of different shaped beam bridges.<br>• Using triangles to create truss bridges that span a given distance and support a load.<br>• Building a wooden bridge structure.<br>• Independently measuring and marking wood accurately.<br>• Selecting appropriate tools and equipment for particular tasks.<br>• Using the correct techniques to saws safely.<br>• Identifying where a structure needs reinforcement and using card corners for support.<br>• Explaining why selecting appropriating materials is an important part of the design process.<br>• Understanding basic wood functional properties. | To understand some different ways to reinforce structures.<br>• To understand how triangles can be used to reinforce bridges.<br>• To know that properties are words that describe the form and function of materials.<br>• To understand why material selection is important based on properties.<br>• To understand the material (functional and aesthetic) properties of wood.<br>• To understand the difference between arch, beam, truss and suspension bridges.<br>• To understand how to carry and use a saw safely. |

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| • Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary.<br>• Suggesting points for improvements for own bridges and those designed by others. | |

## Year 5 Summer term: Electrical systems ((digital world)
## Monitoring devices

## Vocabulary:

| | | | | |
|---|---|---|---|---|
| Alert<br>Ambient<br>Boolean<br>Consumables<br>Decompose | Development<br>Device<br>Duplicate<br>Durable<br>Electronic | Inventor<br>Lightweight<br>Man-made<br>Manipulate<br>Manouevre | Microplastics<br>Model<br>Monitor<br>Monitoring device<br>Moulded | Plastic<br>Plastic pollution<br>Programming content<br>Programming loop<br>Reformed |
| Replica<br>Research<br>Sensor<br>Strong<br>Sustainability | Synthetic<br>Thermometer<br>Thermoscope<br>Value<br>Variable | Versatile<br>Water-resistant<br>Workplane | | |

| Skills | Knowledge |
|---|---|
| • Researching (books, internet) for a particular (user's) animal's needs.<br>• Developing design criteria based on research.<br>• Generating multiple housing ideas using building bricks.<br>• Understanding what a virtual model is and the pros and cons of traditional and | • To know that a 'device' means equipment created for a certain purpose or job and<br>that monitoring devices observe and record.<br>• To know that a sensor is a tool or device that is designed to monitor, detect and<br>respond to changes for a purpose. |

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| CAD modelling.<br>• Placing and manoeuvring 3D objects, using CAD.<br>• Changing the properties of, or combining one or more 3D objects, using CAD.<br>• Understanding the functional and aesthetic properties of plastics.<br>• Programming to monitor the ambient temperature and coding an (audible or<br>visual) alert when the temperature rises above or falls below a specified range.<br>• Stating an event or fact from the last 100 years of plastic history.<br>• Explaining how plastic is affecting planet Earth and suggesting ways to make<br>more sustainable choices.<br>• Explaining key functions in my program (audible alert, visuals).<br>• Explaining how my product would be useful for an animal carer including<br>programmed features. | • To understand that conditional statements (and, or, if booleans) in programming<br>are a set of rules which are followed if certain conditions are met.<br>• To understand key developments in thermometer history.<br>• To know some key events and facts from the history of plastic and how these<br>affect the future outlook.<br>• To know the 6Rs of sustainability.<br>• To understand what a virtual model is and the pros and cons of traditional vs<br>CAD modelling. |

## Year 6 Autumn term: Cooking and nutrition
## Developing a recipe

## Vocabulary:

| | | | |
|---|---|---|---|
| abattoir | design | label | recipe |
| adaptation | enhance | measure | safety |
| balanced | equipment | nutrient | theme |
| beef | evaluate | nutrition | |
| brand | farm | nutritional value | |
| cook | grate | preference | |
| cross-contamination | hygiene | press | |
| cut | ingredients | process | |

| Skills | Knowledge |
|---|---|
| -Researching existing recipes.<br>-Suggesting alternative ingredients.<br>-Designing a jar label.<br>-Writing an alternative recipe.<br>-Understanding cross-contamination.<br>-Using preparation skills.<br>-Making a developed recipe.<br>-Explaining the farm to fork process.<br>-Analysing nutritional content. | -To know that beef comes from cows reared on farms.<br>-To know that recipes can be adapted to suit nutritional needs and dietary requirements.<br>-To know that nutritional information is found on food packaging.<br>-To know that coloured chopping boards can prevent cross-contamination.<br>-To know that food packaging serves many purposes. |

## Year 6 Autumn term: Cooking and nutrition
## Come dine with me (alternative unit)

## Vocabulary:

| | | | |
|---|---|---|---|
| Balance<br>Bitter<br>Bridge method<br>Complementary<br>Cookbook | Farm to fork<br>Method<br>Nationality<br>Reared<br>Research | Pairing<br>Preparation<br>Salty<br>Sour<br>Storyboard | Sweet<br>Umami |

| Skills | Knowledge |
|---|---|
| • Writing a recipe, explaining the key steps, method and ingredients.<br>• Including facts and drawings from research undertaken<br>• Following a recipe, including using the correct quantities of each ingredient.<br>• Adapting a recipe based on research.<br>• Working to a given timescale.<br>• Working safely and hygienically with independence<br>• Evaluating a recipe, considering: taste, smell, texture and origin of the food group.<br>• Taste testing and scoring final products.<br>• Suggesting and writing up points of improvements in productions.<br>• Evaluating health and safety in production to minimise cross contamination | • To know that 'flavour' is how a food or drink tastes.<br>• To know that many countries have 'national dishes' which are recipes associated<br>with that country.<br>• To know that 'processed food' means food that has been put through multiple<br>changes in a factory.<br>• To understand that it is important to wash fruit and vegetables before eating to<br>remove any dirt and insecticides.<br>• To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork). |

## Year 6 Spring term: Electrical systems
## Steady hand game

## Vocabulary:

| | | | | |
|---|---|---|---|---|
| Assemble | Bulb holder | Conductor | Fine motor skills | Insulator |
| Battery | Buzzer | Copper | Fit for purpose | LED |
| Battery pack | Circuit | Design | Form | User |
| Benefit | Circuit symbol | Design criteria | Function | |
| Bulb | Component | Evaluation | Gross motor skills | |

| Skills | Knowledge |
|---|---|
| • Designing a steady hand game - identifying and naming the components required.<br>• Drawing a design from three different perspectives.<br>• Generating ideas through sketching and discussion.<br>• Modelling ideas through prototypes.<br>• Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.<br>• Constructing a stable base for a game.<br>• Accurately cutting, folding and assembling a net.<br>• Decorating the base of the game to a high quality finish.<br>• Making and testing a circuit.<br>• Incorporating a circuit into a base.<br>• Testing own and others finished games, identifying what went well and making | • To know that series circuits only have one direction for the electricity to flow.<br>• To know when there is a break in a series circuit, all components turn off.<br>• To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.<br>• To know a motorised product is one which uses a motor to function.<br>• To know that batteries contain acid, which can be dangerous if they leak.<br>• To know the names of the components in a basic series circuit, including a buzzer.<br>•To know that 'form' means the shape and appearance of an object.<br>•To know the difference between 'form' and 'function'. |

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| suggestions for improvement.<br>• Gathering images and information about existing children's toys.<br>• Analysing a selection of existing children's toys. | •To understand that 'fit for purpose' means that a product works how it should and<br>is easy to use.<br>• To know that form over purpose means that a product looks good but does not<br>work very well.<br>• To know the importance of 'form follows function' when designing: the product<br>must be designed primarily with the function in mind.<br>• To understand the diagram perspectives 'top view', 'side view' and 'back'. |

## Year 6 Summer term: Textiles
## Waistcoats

## Vocabulary:

| | | | |
|---|---|---|---|
| Accurate<br>Adapt<br>Annotate<br>Design<br>Design criteria | Detail<br>Fabric<br>Fastening<br>Knot<br>Properties | Running stitch<br>Seam<br>Sew<br>Shape<br>Target audience | Target customer<br>Template<br>Thread<br>Unique<br>Waistcoat |
| Waterproof | | | |

| Skills | Knowledge |
|---|---|
| • Designing a waistcoat in accordance with a specification linked to set of design criteria.<br>• Annotating designs, to explain their decisions.<br>• Using a template when cutting fabric to ensure they achieve the correct shape.<br>• Using pins effectively to secure a template to fabric without creases or bulges.<br>• Marking and cutting fabric accurately, in accordance with their design.<br>• Sewing a strong running stitch, making small, neat stitches and following the edge.<br>• Tying strong knots. | • To understand that it is important to design clothing with the client/ target customer in mind.<br>• To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric.<br>• To understand the importance of consistently sized stitches. |

| | |
|---|---|
| • Decorating a waistcoat, attaching features (such as appliqué) using thread.<br>• Finishing the waistcoat with a secure fastening (such as buttons).<br>• Learning different decorative stitches.<br>• Sewing accurately with evenly spaced, neat stitches.<br>Reflecting on their work continually throughout the design, make and evaluate<br>process. | |