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| **Happiness Responsibility Friendship Respect Courage** | | | |
| **DESIGN & TECHNOLOGY** | | | |
| **Design Make Evaluate Technical Knowledge** | | | |
| **Food and Cooking** | | | |
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| **Year 5 - Developing a recipe** | | **Year 6** | |
| Knowledge | Skills | Knowledge | Skills |
| **TECHNICAL**  To know that beef comes from cows reared on farms.  To know that recipes can be adapted to suit nutritional needs and dietary requirements.  To know that nutritional information is found on food packaging.  To know that coloured chopping boards can prevent cross-contamination.  To know that food packaging serves many purposes. | **DESIGN**  Researching existing recipes.  Suggesting alternative ingredients.  Designing a jar label.  **MAKE**  Writing an alternative recipe.  Understanding cross-contamination.  Using preparation skills.  Making a developed recipe.  **EVALUATE**  Explaining the farm to fork process.  Analysing nutritional content. | Strand not taught in Year 6 | Strand not taught in Year 6 |
| **Textiles** | | | |
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| **Year 5** | | **Year 6 Waistcoat** | |
| Knowledge | Skills | Knowledge | Skills |
| Strand not taught in Year 5 | Strand not taught in Year 5 | **TECHNICAL**  To understand that it is important to design clothing with the client/target customer in mind.  To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric.  To understand the importance of consistently sized stitches. | **DESIGN**  Designing a waistcoat in accordance to a specification linked to set of design criteria.  Annotating designs, to explain their decisions.  **MAKE**  Using a template when cutting fabric to ensure they achieve the correct shape.  Using pins effectively to secure a template to fabric without creases or bulges.  Marking and cutting fabric accurately, in accordance with their design.  Sewing a strong running stitch, making small, neat stitches and following the edge.  Tying strong knots.  Decorating a waistcoat, attaching features (such as appliqué) using thread.  Finishing the waistcoat with a secure fastening (such as buttons).  Learning different decorative stitches.  Sewing accurately with evenly spaced, neat stitches.  **EVALUATE**  Reflecting on their work continually throughout the design, make and evaluate process. |
| **Mechanisms** | | | |
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| **Year 5 – Gears and pulleys.** | | **Year 6** | |
| Knowledge | Skills | Knowledge | Skills |
| **TECHNICAL**  That mechanical systems that use gears in everyday objects (eg bicycle, clock).  That gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another.  That gears allow us to increase the output of a mechanism. | **DESIGN**  Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design.  Using a series of prototypes to refine and improve their designs.  **MAKE**  Consistently apply safety instructions.  Select appropriate scissors to handle delicate cutting tasks and challenging materials.  Cutting patterns and drawings accurately.  In supervised groups, using hot glue guns safely.  Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly.  Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects.  **EVALUATE**  Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects.  Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost.  Considering alternative materials, tools or techniques that could enhance the product.  Providing feedback that is helpful, specific, and encouraging.  Incorporating feedback from peers or users improve their product further, explaining the changes they made and the impact they had | Strand not taught in Y6. | Strand not taught in Y6. |
| **Structures** | | | |
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| **Year 5 Pavilions (Y4 unit)** | | **Year 6 Bridges (Y5 unit)** | |
| Knowledge | Skills | Knowledge | Skills |
| **TECHNICAL**  To understand that wide and flat based objects are more stable.  To understand the importance of strength and stiffness in structures.  **ADDITIONAL**  To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose.  To know that a façade is the front of a structure.  To understand that a castle needed to be strong and stable to withstand enemy attack.  To know that a paper net is a flat 2D shape that can become a 3D shape once assembled.  To know that a design specification is a list of success criteria for a product. | **DESIGN**  Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect.  Building frame structures designed to support weight  **MAKE**  Creating a range of different shaped frame structures.  Making a variety of free-standing frame structures of different shapes and sizes.  Selecting appropriate materials to build a strong structure and cladding.  Reinforcing corners to strengthen a structure.  Creating a design in accordance with a plan.  Learning to create different textural effects with materials.  **EVALUATE**  Evaluating structures made by the class.    Describing what characteristics of a design and construction made it the most effective.  Considering effective and ineffective designs. | **TECHNICAL**  To understand some different ways to reinforce structures.  To understand how triangles can be used to reinforce bridges.  To know that properties are words that describe the form and function of materials.  To understand why material selection is important based on properties.  To understand the material (functional and aesthetic) properties of wood  **ADDITIONAL**  To understand the difference between arch, beam, truss and suspension bridges.  To understand how to carry and use a saw safely. | **DESIGN**  Designing a stable structure that is able to support weight.  Creating a frame structure with a focus on triangulation.  **MAKE**  Making a range of different shaped beam bridges.  Using triangles to create truss bridges that span a given distance and support a load.  Building a wooden bridge structure.  Independently measuring and marking wood accurately.  Selecting appropriate tools and equipment for particular tasks.  Using the correct techniques to saws safely.  Identifying where a structure needs reinforcement and using card corners for support.  Explaining why selecting appropriating materials is an important part of the design process.  Understanding basic wood functional properties.  **EVALUATE**  Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary.  Suggesting points for improvements for own bridges and those designed by others. |
| **DIGITAL WORLD** | | | |
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| **Year 5** | | **Year 6** | |
| Knowledge | Skills | Knowledge | Skills |
| Strand not taught in Year 5 | Strand not taught in Year 5 | **TECHNICAL**  To know that accelerometers can detect movement.  To understand that sensors can be useful in products as they mean the product can function without human input.  **ADDITIONAL**  To know that designers write design briefs and develop design criteria to enable them to fulfil a client’s request.  To know that ‘multifunctional’ means an object or product has more than one function.  To know that magnetometers are devices that measure the Earth’s magnetic field to determine which direction you are facing. | **DESIGN**  Writing a design brief from information submitted by a client.  Developing design criteria to fulfil the client’s request.  Considering and suggesting additional functions for my navigation tool.  Developing a product idea through annotated sketches.  Placing and manoeuvring 3D objects, using CAD.  Changing the properties of, or combining one or more 3D objects, using CAD.  **MAKE**  Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo).  Explaining material choices and why they were chosen as part of a product concept.  Programming an N,E, S, W cardinal compass.  **EVALUATE**  Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.  Developing an awareness of sustainable design.  Identifying key industries that utilise 3D CAD modelling and explaining why.  Describing how the product concept fits the client’s request and how it will benefit the customers.  Explaining the key functions in my program, including any additions.  Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.  Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch.  Demonstrating a functional program as part of a product concept pitch. |