|  |  |  |  |
| --- | --- | --- | --- |
| **Happiness Responsibility Friendship Respect Courage** | | | |
| **DESIGN & TECHNOLOGY** | | | |
| **Design Make Evaluate Technical Knowledge** | | | |
| **Food and Cooking** | | | |
| **3 S’s = Something, for someone, for some purpose.**  **Potential of product or Evaluating = User, purpose,innovation,authenticity, functionality and design decisions.** | | | |
| **Year 3 Seasonal food** | | **Year 4 Adapting a recipe** | |
| Knowledge | Skills | Knowledge | Skills |
| **TECHNICAL**  To know that seasonal means foods that grow in a given season in a given country.  To know some seasonal foods that grow in the UK and what season they grow in.  To know that eating seasonal foods can have a positive impact on the environment.  To know how to describe the flavour and texture of foods.  To know how to cut a peel safely.  To know that the appearance of food is as important as taste.  To know that similar coloured fruits and vegetables often have similar nutritional benefits. | **DESIGN**  Describing how climate affects where foods grow.  **MAKE**  Identifying seasonal ingredients from the UK.  Following the instructions within a recipe.  Tasting seasonal ingredients.  Peeling foods by hand or with a peeler.  Cutting ingredients safely.  Choosing ingredients based on a design brief.  **EVALUATE**  Describing the texture and flavour of ingredients.  Describing the benefits of seasonal fruits and vegetables and the impact on the environment. | **TECHNICAL**  To know that the amount of an ingredient in a recipe is known as the ‘quantity.’  To know that safety and hygiene are important when cooking.  To know the following cooking techniques: sieving, measuring, stirring, cutting out and shaping.  To know the importance of budgeting while planning ingredients for a recipe.  To know that products often have a target audience. | **DESIGN**  Designing a biscuit within a given budget.  Conducting market research.  **MAKE**  Following a baking recipe.  Understanding safety and hygiene rules.  Adapting a recipe.  **EVALUATE**  Evaluating an adapted recipe.  Evaluating and comparing a range of products.  Suggesting modifications |
| **Textiles** | | | |
|  | | **Fastenings** | |
| **Year 3** | | **Year 4** | |
| Knowledge | Skills | Knowledge | Skills |
| Strand not taught in Year 3 | Strand not taught in Year 3 | **TECHNICAL**  To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro.  To know that different fastening types are useful for different purposes.  To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions. | **DESIGN**  Writing design criteria for a product, articulating decisions made.  Designing a personalised book sleeve.  **MAKE**  Making and testing a paper template with accuracy and in keeping with the design criteria.  Measuring, marking and cutting fabric using a paper template.  Selecting a stitch style to join fabric, working neatly by sewing small, straight stitches.  Incorporating fastening to a design  **EVALUATE**  Testing and evaluating an end product against the original design criteria.  Deciding how many of the criteria should be met for the product to be considered successful.  Suggesting modifications for improvement.  Articulating the advantages and disadvantages of different fastening types. |
| **Mechanisms** | | | |
|  | | **Mechanical cars** | |
| **Year 3** | | **Year 4** | |
| Knowledge | Skills | Knowledge | Skills |
| Strand not taught in Year 3 | Strand not taught in Year 3 | **TECHNICAL**  To understand that a mechanical system can allow us to move something more easily.  To know that mechanical systems have more than one mechanism that moves to make them work.  To know that mechanical systems are often hidden in products to make them look more appealing.  **ADDITIONAL**  To know that extra information on drawings or diagrams can help the user understand a design or idea.  To know that an exploded diagram shows how the parts of a product fit together.  To know that a prototype is a detailed model that helps a user understand how a product will work.  To know that a target audience is a group of people that might like the idea.  To know that different tools and equipment have different dangers.  To know that a ruler can be used to measure length.  To know that a hot glue gun can be used to join materials.  To know that better suggestions of improvements mean better feedback.  To know that they can choose to use feedback or not.  To know that some products are more successful than other because of their function.  To know that choices of materials and equipment can affect the final product. To know that feedback is ideas and suggestions from other people that can help improve their work. | **DESIGN**  Developing drawing and sketching skills with a focus on clarity and simplicity.  Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (eg. sketches, cross-sectional diagram, thumbnail sketches and exploded diagrams)  Creating prototypes using materials with similar properties to their final design.  Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences.  Developing designs by adding detail and justifications about materials, tools, methods.  **MAKE**  Following detailed safety instructions.  Using a ruler as a measuring tool with increasing accuracy by creating spaced marks using millimetres and measuring lengths of objects.  Handle different sizes and types of scissors with confidence.  With close supervision using a hot glue gun to join wooden materials (e.g. lolly sticks).  Selecting equipment required for a series of tasks based on the plan. Explain why each piece is suitable for each stage.  Selecting materials, components or ingredients from a wider choice but within a limited design space (e.g. seasonal ingredients from May and June in the UK).  **EVALUATE**  Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements.  Reflecting on feedback to decide if and how it could be used to improve future iterations.  Investigating and analysing a range of existing products by looking at their functionality and appeal.  Analysing why specific products, designers or inventors are successful.  Evaluating their designs by comparing them against design criteria and considering feedback from peers to suggest improvements.  Evaluating how effective their chosen materials and tools were in fulfilling the design brief. |
| **Structures** | | | |
| **Constructing a castle** | |  | |
| **Year 3** | | **Year 4** | |
| 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 castle with key features to appeal to a specific person/purpose.  Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours.  Designing and/or decorating a castle tower on CAD software.  **MAKE**  Constructing a range of 3D geometric shapes using nets.  Creating special features for individual designs.  Making facades from a range of recycled materials.  **EVALUATE**  Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison, to the original design.  Suggesting points for modification of the individual designs. | Strand not taught in Year 4 | Strand not taught in Year 4 |
| **Digital world** | | | |
|  | |  | |
| **Year 3** | | **Year 4** | |
| Knowledge | Skills | Knowledge | Skills |
| **TECHNICAL**  To understand that, in programming, a ‘loop’ is code that repeats something again and again until stopped.  To know that a micro:bit is a pocket-sized, codeable computer.  To know that a simulator is able to replicate the functions of an existing piece of technology.  **ADDITIONAL**  To understand what is meant by ‘point of sale display.’  To know that CAD stands for ‘Computer-aided design’. | **DESIGN**  Problem solving by suggesting which features on a micro:bit might be useful and justifying my ideas.  Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge.  Developing design ideas through annotated sketches to create a product concept.  Developing design criteria to respond to a design brief.  **MAKE**  Following a list of design requirements.  Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm.  **EVALUATION**  - | Strand not taught in Year 4 | Strand not taught in Year 4 |