|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  | | | | | | |
|  | | Year 3/4 (Cycle A) | Year 3/4 (Cycle B) | | | | | | |
| Project 1 | | Stone Age Bag – sewing techniques with patterns | Stone Age Dessert – origins of foods | | | | | | |
| Project 2 | | Roman Chariots - wheels and axels | Pneumatic Volcano - mechanical | | | | | | |
| Project 3 | | Bread - baking | Shaduf – levers and pivots | | | | | | |
|  | DESIGN – LOWER KEY STAGE 2 | | | | | | | | |
| Understanding contexts,  users and purposes | | work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment | |  |  |  |  |  |  |
| describe the purpose of their products indicate the design features of their products that will appeal to intended users | |  |  |  |  |  |  |
| explain how particular parts of their products work | |  |  |  |  |  |  |
| gather information about the needs and wants of particular individuals and groups | |  |  |  |  |  |  |
| develop their own design criteria and use these to inform their ideas | |  |  |  |  |  |  |
| Generating, developing,  modelling and  communicating ideas | | share and clarify ideas through discussion | |  |  |  |  |  |  |
| model their ideas using prototypes and / or pattern pieces | |  |  |  |  |  |  |
| use annotated sketches and exploded diagrams to develop and communicate their ideas | |  |  |  |  |  |  |
| use cross-sectional drawings (such as isometric drawing) to develop and communicate their ideas | |  |  |  |  |  |  |
| generate realistic ideas, focusing on the needs of the user | |  |  |  |  |  |  |
| make design decisions that take account of the availability of resources | |  |  |  |  |  |  |
|  | MAKE – LOWER KEY STAGE 2 | | | | | | | | |
| Planning | | select tools and equipment suitable for the task | |  |  |  |  |  |  |
| explain their choice of tools and equipment in relation to the skills and techniques they will be using | |  |  |  |  |  |  |
| select materials and components suitable for the task | |  |  |  |  |  |  |
| explain their choice of materials and components according to functional properties and aesthetic qualities | |  |  |  |  |  |  |
| order the main stages of making | |  |  |  |  |  |  |
| Practical  skills and techniques | | follow procedures for safety and hygiene | |  |  |  |  |  |  |
| use a wider range of materials and components than KS1, including construction materials and kits, mechanical components and electrical components | |  |  |  |  |  |  |
| measure, mark out, cut and shape materials and components with some accuracy | |  |  |  |  |  |  |
| assemble, join and combine materials and components with some accuracy | |  |  |  |  |  |  |
| apply a range of finishing techniques, including those from art and design, with some accuracy | |  |  |  |  |  |  |
|  | EVALUATE – LOWER KEY STAGE 2 | | | | | | | | |
| Existing products | | identify the strengths and areas for development in their ideas and products | |  |  |  |  |  |  |
| consider the views of others, including intended users, to improve their work | |  |  |  |  |  |  |
| refer to their design criteria as they design and make | |  |  |  |  |  |  |
| use their design criteria to evaluate their completed products | |  |  |  |  |  |  |
| Existing products | | how well products have been designed | |  |  |  |  |  |  |
| how well products have been made | |  |  |  |  |  |  |
| why materials have been chosen | |  |  |  |  |  |  |
| what methods of construction have been used | |  |  |  |  |  |  |
| how well products work | |  |  |  |  |  |  |
| how well products achieve their purposes | |  |  |  |  |  |  |
| how well products meet user needs and wants | |  |  |  |  |  |  |
| who designed and made the products | |  |  |  |  |  |  |
| where products were designed and made | |  |  |  |  |  |  |
| when products were designed and made | |  |  |  |  |  |  |
| whether products can be recycled or reused | |  |  |  |  |  |  |
| Key events & individuals | | about inventors, designers, engineers and manufacturers who have developed ground-breaking products | |  |  |  |  |  |  |
| TECHNICAL KNOWLEDGE – LOWER KEY STAGE 2 | | | | | | | | | |
| Making products works | | how to use learning from science to help design and make products that work | |  |  |  |  |  |  |
| how to use learning from mathematics to help design and make products that work | |  |  |  |  |  |  |
| that materials have both functional properties and aesthetic qualities | |  |  |  |  |  |  |
| that materials can be combined and mixed to create more useful characteristics | |  |  |  |  |  |  |
| that mechanical and electrical systems have an input, process and output | |  |  |  |  |  |  |
| the correct technical vocabulary for the projects they are undertaking | |  |  |  |  |  |  |
| how mechanical systems such as levers and linkages or pneumatic systems create movement | |  |  |  |  |  |  |
| how simple electrical circuits and components can be used to create functional products | |  |  |  |  |  |  |
| how to make strong, stiff shell structures | |  |  |  |  |  |  |