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|  | 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 andcommunicating 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 |  |  |  |  |  |  |
| Practicalskills 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 |  |  |  |  |  |  |