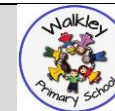


DESIGN & TECHNOLOGY: CRUCIAL LEARNING



Year 1	Structures – freestanding structures	1. Develop, model and communicate their ideas through talking and drawings. 2. Select and use tools eg scissors, tapes, paint. 3. Use simple finishing techniques suitable for the structure they are creating. 4. Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.
Year 1	Mechanisms – sliders and leavers	1. Develop, model and communicate their ideas through drawings and mock-ups with card and paper. 2. Select and use tools, explaining their choices, to cut, shape and join paper and card. 3. Understand and explore different mechanisms produce different types of movement. 4. Know and use technical vocabulary relevant to the project: slider, lever, pivot, slot, bridge/guide 5. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.
Year 1	Food – preparing fruit and vegetables	1. Design appealing products for a particular user based on simple design criteria. 2. Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit is part of The Eatwell plate. 3. Know and use technical and sensory vocabulary relevant to the project: fruit names, names of equipment and utensils, sensory vocabulary 4. Use simple utensils and equipment to cut, squeeze and chop safely. 5. Evaluate ideas and finished products against design criteria, including intended user and purpose.
Year 2	Mechanisms – wheels and axles	1. Generate initial ideas and simple design criteria through talking and using own experiences. 2. Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. 3. Distinguish between fixed and freely moving axles. 4. Know and use technical vocabulary relevant to the project: vehicle, wheel, axle, axle holder, chassis, body, cab 5. Evaluate their ideas throughout and their products against original criteria.
Year 2	Textiles – templates and joining techniques	1. Design and generate ideas as appropriate through talking, drawing, templates and mock-ups 2. Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. 3. Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. 4. Know and use technical vocabulary relevant to the project: template, pattern pieces, mark out, join, decorate, finish 5. Evaluate their ideas throughout and their final products against original design criteria.

Year 3	Structures	1. Develop ideas through the analysis of existing products and prototypes to model and communicate ideas. 2. Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. 3. Test and evaluate their own products against design criteria and the intended user and purpose 4. Develop and use knowledge of how to construct strong, stiff shell structures. 5. Develop and use knowledge of nets of cubes and cuboids.
Year 3	Food – varied and healthy diet	1. Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance and taste for an appealing product. 2. Plan the main stages of a recipe, listing ingredients 3. Select and use appropriate utensils and equipment to prepare and 4. Know how to use appropriate equipment and utensils to prepare and combine food.
Year 3	Mechanical systems – levers and linkages	1. Use annotated sketches and prototypes to develop, model and communicate ideas. 2. Order the main stages of making. 3. Select from and use finishing techniques suitable for the product they are creating 4. Evaluate their own products and ideas against criteria and user needs. 5. Understand and use lever and linkage mechanisms.
Year 4	Textiles – 2D to 3D product	1. Design products for the intended user that are fit for purpose based on a simple design specification. 2. Produce detailed lists of equipment and fabrics relevant to their tasks. 3. Test products with intended user and critically evaluate the fitness for purpose. 4. Know that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
Year 4	Electrical systems	1. Gather information about needs and wants, and develop design criteria to inform the design. 2. Select electrical components according to their functional properties. 3. Investigate range of existing battery-powered products. 4. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. 5. Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.
Year 5	Mechanical Systems	1. Develop and communicate ideas through discussion, annotated drawings and drawings from different views. 2. Formulate step-by-step plans. 3. Test products with the intended user, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. 4. Understand that mechanical systems have an input, process and an output. 5. Understand how cams can be used to produce different types of movement and change the direction of movement.
Year 5	Structures	1. Develop a simple design specification to guide the development of their products, taking account of constraints including time and resources. 2. Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. 3. Competently use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.

		Investigate and evaluate a range of existing frame structures. Understand how to strengthen, stiffen and reinforce 3-D frameworks.
Year 5	Textiles	- Design purposeful, functional, appealing products for the intended user based on a simple design specification. - Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. - Compare the final product to the original design specification. - Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. - Fabrics can be strengthened, stiffened and reinforced where appropriate.
Year 6	Electrical Systems	- Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams - Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. - Select and accurately assemble materials, and connect electrical components to produce a functional product. - Test the system to demonstrate its effectiveness for the intended user and purpose. - Know about famous inventors who developed ground-breaking electrical systems and components.
Year 6	Food – celebrating culture and seasonality	- Write a step-by-step recipe, including a list of ingredients, equipment and utensils - Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. - Carry out sensory evaluations recording the evaluations using e.g. tables/graphs/charts such as star diagrams. - Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. - Know how to use heat sources to prepare and cook food.