

Crawley Ridge Junior School Skills Progression

Design and Technology

By the end of Key Stage 2 pupils, through a variety of creative and practical activities, will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open the door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordable and well, now and in later life.

Pupils should be taught to:

- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	Year 2 – Prior learning	Year 3	Year 4	Year 5	Year 6
Themes	<p>Structures</p> <ul style="list-style-type: none"> • Experience of using construction kits to build walls, towers and frameworks. • Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. • Experience of different methods of joining card and paper. 	<p>Structures – (Forest Schools) to make an Iron Age Roundhouse using natural materials in the school grounds</p> <p>Mechanisms: Pneumatic monsters</p> <p>Textiles – Design and make a cushion.</p> <p>Food: Eating seasonally</p>	<p>Structures: Safari buggies</p> <p>Electrical: Develop a new functional torch design.</p> <p>Textiles: Design and create a book sleeve</p> <p>Food: Adapting a recipe</p>	<p>Structures: Design and create a wooden bridge.</p> <p>Mechanisms: Pop up books using levers and sliders</p> <p>Textiles: Design and make a posy bag</p> <p>Food technology: Seasonality -Excellent small cake and pottage</p> <p>Forest Schools</p> <p>Weaving – wattle and daub</p>	<p>Structures: To design and construct an Air raid shelter</p> <p>Electrical: Design and develop a steady hand game.</p> <p>Food: Celebrating culture and seasonality.</p> <p>Forest schools: Wartime recipes</p> <p>Digital world: Navigating the world</p>
Design - Structures (Understanding contexts, users and purposes, Generating, developing, modelling and communicating ideas)	<ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make • Develop, model and communicate their ideas through talking, mock-ups and drawings. 	<ul style="list-style-type: none"> • Learning about different types of structures, found in the Celtic period. • Designing a Celtic roundhouse with key features to appeal to an historian. 	<ul style="list-style-type: none"> • Designing a stable Safari buggy structure that is aesthetically pleasing and selecting materials to create a desired effect 	<ul style="list-style-type: none"> • Designing a stable structure that is able to support weight • Creating frame structure with focus on triangulation 	<ul style="list-style-type: none"> • Designing a WW2 shelter featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs

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Make – Structures (Construction) (Planning, practical skills and techniques)	<ul style="list-style-type: none"> • Plan by suggesting what to do next. • Select and use tools, skills and techniques, explaining their choices. <ul style="list-style-type: none"> • Select new and reclaimed materials and construction kits to build their structures. • Use simple finishing techniques suitable for the structure they are creating. 	<ul style="list-style-type: none"> • Order the main stages of making. • Select and use appropriate tools to measure, mark out, shape, tie and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use finishing techniques suitable for the product they are creating. 	<ul style="list-style-type: none"> • Creating a range of different shaped frame structures • Selecting appropriate materials to build a strong structure • Reinforcing corners to strengthen a structure • Creating a design in accordance with a plan • Learning to create different textural effects with materials 	<ul style="list-style-type: none"> • Making a range of different shaped beam bridges • Using triangles to create truss bridges that span a given distance and supports a load <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Explaining why selecting appropriating materials is an important part of the design process • Understanding basic wood functional properties 	<ul style="list-style-type: none"> • Building a range of WW2 structures drawing upon new and prior knowledge of structures • Measuring, marking and cutting wood to create a range of structures <ul style="list-style-type: none"> • Using a range of materials to reinforce and add decoration to structures
Evaluation - Structures	<ul style="list-style-type: none"> • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. <ul style="list-style-type: none"> • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. 	<ul style="list-style-type: none"> • Test and evaluate their own products against design criteria and the intended user and purpose. 	<ul style="list-style-type: none"> • Evaluating structures made by the class <ul style="list-style-type: none"> • Describing what characteristics of a design and construction made it the most effective • Considering effective and ineffective designs 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Improving a design plan based on peer evaluation • Testing and adapting a design to improve it as it is developed • Identifying what makes a successful structure

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Structures - Technical Knowledge	<ul style="list-style-type: none"> • Know how to make freestanding structures stronger, stiffer and more stable. 	<ul style="list-style-type: none"> • To know that a structure needs, walls, insulation and a roof. • To know which materials today, would be effective to make a Celtic roundhouse. • To know that certain materials such as hazel twigs are effective for weaving due to their flexible properties. • To know why clay in the past was used as a building material. 	<ul style="list-style-type: none"> • Building on prior knowledge of net structures and broadening knowledge of frame structures • Implementing frame and shell structure knowledge • Considering effective and ineffective designs 	<ul style="list-style-type: none"> • Exploring how to create a strong beam Identifying arch and beam bridges and understanding the terms: compression and tension • Identifying stronger and weaker structures • Finding different ways to reinforce structures • Understanding how triangles can be used to reinforce bridges • Articulating the difference between beam, arch, truss and suspension bridges 	<ul style="list-style-type: none"> • Knowing that structures can be strengthened by manipulating materials and shapes • Identifying the shell structure in everyday life (cars, aeroplanes, tins, cans) • Understanding man made and natural structures
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