Cragside Church of England Primary School Design Technology "A Love of Learning and a Thirst for Knowledge" Curriculum Overview

Intent: Our DT vision is there to enable children to shine bright through a vigorous process of evaluating and iterating our designs. We want to nurture children who have no fear of failure, who can reflect and evaluate their designs. Give them opportunities to develop their creativity and problem solving skills. Through this process, DT will help children develop many of the skills they will need in the future of work. We want our curriculum to excite, stretch and motivate all students. Iterative design aspires to be the driving force of this curriculum, developing a culture where there is no fear of failure, purposeful evaluations and re-development. All projects will follow a user centred design solving a need, opportunity or want.

Implementation: This is based on the National Curriculum and linked to topics to ensure a well-structured approach to this creative subject. The children are taught DT as part of their termly topic work. DT units follow the following learning journey: Investigate, Brief (something, for somebody for some purpose) Design, Make, Test, Evaluate, Iterate. The children need to make design decisions and make innovations. In the early years we give our children more scaffolding and less design decisions. This is slowly reversed as Children move up through the school. In DT children should be learning in an active way. Lessons are split into three categories, Investigate and evaluate Activities (learn about exciting products and DT in the wider world), Focussed Tasks (taught technical knowledge and skills), Design, Make and Evaluate Assignments (create functions products with users and purposes in mind).

Impact: Teachers use the DT lessons to inform future lessons; ensuring children are supported and challenged appropriately. This is analysed to inform and address any gaps in attainment. Age related expectation levels are reported to parents at the end of the reception year.

	Autumn		Spring		Summer	
Year 1		**Design, make and evaluate story puppets for a show to our peers** *Textiles* *Templates and joining techniques* .		**Design, make and evaluate a bridge for the Billy Goats Gruff.** *Freestanding structure*		**Design, make and evaluate a fruit kebab for parents at sports day.** *Food* *Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)*
Year 2	**Design, make and evaluate a healthy snack bar for parents evening.** *Food* *Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)*		**Design, make and evaluate an information book (with sliders) to explain the great fire of London to year 1** *mechanism* *slide*	**Design, make and evaluate a Safai car to transport a toy animal.** *Mechanisms* *Axles and wheels*	*r*	

Year 3		**DT: What is the tallest earthquake proof building you can make?** *Shell structures* Record the plan by drawing using annotated sketches. Use prototypes to develop and share ideas. Create shell or frame structures. Strengthen structures Select from materials according to their functional properties. Discuss how well the finished product meets the design criteria of the user. Use 2D nets to create 3D objects		**DT: Can we design a bridge that moves?** *Mechanisms- levers and linkages* Research, design, create and evaluate bridge designs Accurate use of measuring, marking our, cutting, joining and finishing skills Use annotated sketches and prototypes Understand lever and linkage mechanisms Distinguish between fixed and loose pivots Know the technical vocabulary related to the project		**DT: Where in the world does food come from?** *Food* *Healthy and varied diet (including cooking and nutrition requirements for KS2)* Design and follow instructions/recipes to create a seasonal fruit or vegetable tart. Understand that climate affects food growth. Find out which fruit and vegetables are grown in countries/continents. Prepare and cook using a range of techniques, tools and practising good hygiene. Evaluate tart and suggest future improvements. Use cooking equipment safely.
Year 4		***Design, make and evaluate a Christmas tree decoration for our class Christmas tree which will bring Christmas cheer.*** *Textiles* *2-D shape to 3-D product*		**Design, make and evaluate an alarm to support a chosen user.** *Electrical Systems* *Simple circuits and switches (including programming and control)*		**Design, make and evaluate a healthy dish for children which will teach them about food around the world.** *Food* *Healthy and varied diet (including cooking and nutrition requirements for KS2)*

Year 5		**Design, make and evaluate a stew for our families.** **Food** Celebrating culture and seasonality (including cooking and nutrition requirements for KS2) Explore seasonal fruit and be able to know which food can be grown in the UK in the different seasons and why. Make and test prototypes. Cook food safely following hygiene rules. Adapt a recipe. Design a product with a specification.		**Design, make and evaluate a frame structure for our local forest wildlife to live in.** *Frame Structures* Children will research a range of frame structures and possible materials for choice. Make a prototype and evaluate it based on the design specifications. Discuss, test and modify the frame structure. Redesign and Testing		**Design, make and evaluate a sensory mat for a new baby for the local children's nurseries.** ***Textiles*** *Combining different fabric shapes (including computer-aided design)* Children will research sensory mats and a range of materials thinking about weight, feel and usage. Discuss if fasteners are needed and what level of sewing will be used. Make a prototype and evaluate it based on the specifications. Discuss, test and modify the textile sensory mat.
Year 6		**Design a moving toy** ***Mechanisms - Cams -*** Use observational drawings and questions to develop understanding of the products in the handling collection and those that children have researched. Give children pre-cut cams made from MDF or wooden wheels to mount on a piece of board and observe their movement with a follower. Children use a range of hand tools safely and accurately to cut and mark out their product. Children communicate ideas through detailed, annotated sketches from different views and/or exploded diagrams. Make high quality products, applying knowledge, understanding and skills.	**Design a rotating fairground ride.** ***Electrical systems -*** *Using more complex switches and circuits (include programming, control and monitoring* Children explore fairground rides and how they rotate. Children will design their own rotating fairground ride using a motor and electrical circuit. Drawing on science understanding, ask the children to explore a range of electrical systems that could be used to control their products, including a simple series circuit where a single output device is controlled, a series circuit where two output devices are controlled by one switch and, where appropriate, parallel circuits where two output devices are controlled independently by two separate switches.			**Technology - Baking scones** *Food* *Celebrating culture and seasonality* *(including cooking and nutrition requirements for KS2)* measure out, cut, shape and combine e.g. knead, beat, rub and mix ingredients. use appropriate utensils and equipment that the children may use safely and hygienically. following a basic recipe to prepare and cook a savoury food product. Ask questions about which ingredients could be changed or added in a basic recipe such as types of flour, seeds, garlic, vegetables. Consider texture, taste, appearance and smell. When using a basic dough recipe, explore making different shapes to change the appearance of the food product e.g. Which shape is most appealing and why?