Orton Wistow Primary School – Curriculum Plan

Subject : Design Technology | **Year : 6** | **Term : Autumn**

Vocabulary	Knowledge What children will know			Understanding What children will understand			Skills What children will be able to do		
Define the word and include etymology if useful.	Learning Remembering	Teaching Telling	Assessment Testing	Learning Practising	Teaching Coaching	Assessment Observing	Learning Reflecting	Teaching Facilitating	Assessment Evaluating
Structure – something built or constructed (from latin 'structura', equivalent to struct and 'ura' = put together) Mechanism – an assembly of moving parts performing a complete functional motion (from Latin 'mechanismus' and Greek 'mechan' = machine) Engineer – a person trained and skills in the design, contructions and use of engines or machines (Latin 'ingenia' = to design) Design- to prepare the preliminary sketch or plans for a structure (Middle English 'designen' and Latin 'designare' = to mark out) Criteria- a standard for judgement or to test something (Greek 'kriterion' = to separate) Product- a thing produced by labour Prototype – the original or model which something is based or formed (Greek - 'prototypos' = original) Algorithm – a set of rules for solving a problem ina number of steps (Latin - 'algorismus' = steps)	How to use a chromebook carefully to research inventors throughout history and distil the key facts. At least five inventors who have changed the world - why were their inventions so important to the human civilisation? How to create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips.) Use algorithms and write code to control and monitor models or products (such as Lego Mindstorms). Remember how to use cams, pulleys, levers, gears and mechanics from previous years learning. Innovative combinations of electronics (or computing) and mechanics in product designs. Design with the user in mind, motivated by the service a product will offer rather than simply for profit). How to make a prototype of their product using a different material.			What is an inventor and can I find examples of inventors throughout history? What is a circuit? What does it need to be successful? What other components can I use in a circuit? Can I link to any other subject areas? What is an algorithm and what does it do? How can I debug an algorithm? Which combination of cams, levers, electronics, pulleys and gears can I use in my design? What can I invent to make the world a better place? Who will be user be? Why is my product suitable to that user? How many prototypes for my product will I need? How can I use CAD to design my product? What do I like and dislike about my product and how might I modify it?			Name a famous inventor and their work, evaluating on its importance. Generate ideas for their own designs using inspiration from known engineers. Explain what a mechanics are and how they can be used in a product. Make a simple electrical circuit with LED's. Make an electrical circuit with a switch. Tinker with electrical equipment and put it back together again. Explain which cam makes which type of motion. Design a moving object (on Sketch Up with labelling) with cams, lever with pulleys, gears and one electronic element (simple circuit) or computing element. Select appropriate joining techniques/ resources. Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).		

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Material- the substances of which a thing is made (Latin 'materialis' meaning belonging to matter) Electricity – the science dealing with electric charges and currents (Latin – 'electricus' = 'electrum' amber-coloured alloy of gold and silver used in ancient times Component – a part of a mechanical or electrical system (Latin – 'componere' = put together) Cam – a disk or cylinder having an irregular form such that its motion, usually rotary or reciprocating (Dutch - 'kamm' = round comb) Pulley – a wheel, with a grooved rim, that turns in a frame to change the direction of or transmit force (Greek – 'polidian' = little pivot) Gear – a part that has cut teeth of similer spacing to another that they mesh with teeth in another part to transmit or receive force and motion (Middle English – 'gere' = equipment) Linear – consisting of, or using lines (Latin 'linearis' = belonging to lines Rotary – turning or capable of turning on an axis like a wheel (Latin 'rotarius' = wheel) Innovative – to introduce something new or make changes to something established (Latin – 'innovatus' = renew, alter)	Make products through stages of prototypes, making continual refinements and modifications. Ensure products have a high quality finish, using art skills where appropriate. Use prototypes, cross-sectional diagrams and computer aided designs (Sketch Up) to represent designs. Evaluate the design of products so as to suggest improvements to the user experience and know how to make the refinements.	Can I offer suggestions to my peers about their products? What is the user experience of my product? How can I improve it to ensure they choose my product?	Measure with a ruler and mark out to the nearest millimetre. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Choose suitable techniques to repair products. Evaluate product, identifying what they did well and what they would change next time for a positive user experience.

Orton Wistow Primary School – Curriculum Plan

Subject : Design Technology | **Year : 6** | **Term : Spring**

Vocabulary	**Knowledge** What children will know		**Understanding** What children will understand			**Skills** What children will be able to do		
Define the word and include etymology if useful.	**Learning** Remembering	**Teaching** Telling	**Assessment** Testing	**Learning** Practising	**Teaching** Coaching	**Assessment** Observing	**Learning** Reflecting	**Teaching** Facilitating	**Assessment** Evaluating
Aesthetic – Latin (aestheticus – perception) sense of beauty Appendage – a subordinate part attached to something Assemble – bring or gather in one place Design – prepare plans or a sketch Criteria/criterion – Greek (kriterion – a standard) rule for evaluating or testing something Evaluation – appraisal/appraising Fastening/fastener – something that fastens such as a lock or clasp Prototype – a model, often full-size, for testing after design and draft stage Net – stage before mock-up, product before fastening or stitching Stitching – one complete movement of a threaded needle through a fabric or material. To sew, join or embellish with stitches (blanket, cross, running)			Different designers from around the world and how their creations inspired people. How different materials react under different conditions, choosing the most suitable material for their products. Know why the design process is important and why we don't just make the final piece. Remember how to tinker with different materials and design own product. Remember how to measure and mark out to the nearest millimetre. Select appropriate joining techniques/ resources (back-stitch for seam and running stitch for appendages)			How to compare and contrast different designers from around the world. Observe different materials and their features, including visual and tactile effects. How to follow instructions on working with needles, scissors and materials safely, being able to explain why. Observe the importance for the aesthetics of their own products, being able to explain why this is important. Practise different sewing techniques and why certain ones are most suitable for their product. Understand why their product was suitable and why it wasn't, including			Research and investigate different designers from around the world – explaining which ones inspire them. Cost a product, thinking about the consumer and profit. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Try different stitching techniques and join textiles with most appropriate stitching. Cut materials accurately and safely by selecting appropriate tools. Select the most appropriate techniques to decorate textiles, being able to explain those choices.		

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Stencil – a device for applying a pattern or design to a fabric or material Template – a pattern serving as a guide	Understand the need for a seam allowance. Evaluate product as going along with a final evaluation against the design brief.			the price and how much profit could be made.			Explain why their product achieves the design brief and reflect how it can be improved next time.		

Orton Wistow Primary School – Curriculum Plan

Subject : Design Technology | **Year : 5** | **Term : Summer**

Vocabulary	**Knowledge** What children will know		**Understanding** What children will understand			**Skills** What children will be able to do		
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Fruit – any edible product of plant growth useful to humans or animals Assemble – Latin (assimulare) to bring together or gather Healthy – enjoying good health Ingredients – Latin (stem of ingrediens) something that enters as an element into a mixture Recipe – Latin (recipere) a set of instructions for making or preparing a food dish Slice – Old French (esclicer – to split up) a thin, flat piece cut from something	Children will know what a microorganism is and how can we keep food safe from being contaminated. How to design a healthy, home cooked meal from different countries, demonstrating a range of cooking and baking techniques. Suggest improvements to existing designs and what make them appealing to the consumer. Testing how food products have been created. Assemble or cook locally sourced, healthy ingredients. How to cut, peel or grate ingredients safely and hygienically.			Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms) Understand which foods are grown, reared, caught and processed. Understand that food must be prepared safely and hygienically and be able to explain the reasons why. How to create and refine recipes, including healthy seasonal ingredients, methods, cooking times and temperatures. Practise how to use a knife, grater and peeler safely and hygienically.			Find a healthy, home cooked recipe in a cookbook or using an internet search from a variety of different countries. Identify ingredients that can be classed as locally sourced. Group ingredients into grown, reared, caught and processed. Use a variety of different cooking and backing utensils safely and responsibly. Measure accurately to nearest gram. Calculate ratios of ingredients to scale up or down from a recipe		

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Vegetable – Latin (vegetabillis – able to live and grow) any plant whose parts are used as food Caught – to catch, for example, fish Reared – to rear, for example, cattle and sheep Grown – food grown from the ground such as vegetables, etc Processed – foods made by humans in a factory Seasonal – dependent on the seasons of the year or a particular season	To use scales or measuring cups, measure or weigh food items to nearest gram. Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Begin to evaluate their ideas and products against design criteria and how to change next time.	Understand the difference between healthy and unhealthy ingredients and what makes them that way. Understand how different packaging can be visually appealing and unappealing, being able to tell another person why. Testing how packaging can affect the sales of a product, using it to influence their own product.	Evaluate a food dish or item, being able to explain why they like or dislike it. Critically reflect on different types of packaging and their impact on the environment and consumer. Design packaging so it is visually appealing to the consumer.