

**Cheadle Primary – the school at the heart of the village, free to flourish, ready to learn and succeed. Progression of Skills and Knowledge: DESIGN TECHNOLOGY Year 5**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Invaders and Settlers-Vikings		Queen Victoria/Victorian School	Suffragettes/Crime/Technology/ Philanthropists	River/Water Cycle	European Study-Spain
<b>National Curriculum Learning Intentions</b>	Design - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams. Make - use wider range of tools and equipment (cutting, shaping, joining and finishing), accurately; • select from and use from instruction materials, textiles and ingredients, functional properties and aesthetic qualities. Evaluate - investigate and analyse a range of existing products; evaluate their ideas and products against their own design criteria and consider the views of others to improve their work; understand how key events and individuals have helped shape the world Technical Knowledge - apply their understanding of how to strengthen, stiffen and reinforce more complex structures; apply their understanding of computing to program, monitor and control their products. Cooking and Nutrition - 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.					
<b>DT Units</b>	Programming Adventures		Marbulous Structures		Eggtastic	
<b>Design</b>	<ul style="list-style-type: none"> <li>work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>communicate and explain how particular parts of their products work</li> <li>share and clarify ideas through discussion</li> <li>use computer-aided design to develop and communicate their ideas</li> </ul>		<ul style="list-style-type: none"> <li>indicate the design features and purpose that will appeal to intended users</li> <li>develop a simple design specification to guide their thinking</li> <li>generate innovative ideas, drawing on research</li> <li>make design decisions, taking account of constraints such as time, resources and cost</li> </ul>		<ul style="list-style-type: none"> <li>carry out research, using surveys and web-based resources</li> <li>identify the needs, wants, preferences and values of particular individuals and groups</li> </ul>	
<b>Make</b>	<ul style="list-style-type: none"> <li>formulate step-by-step plans as a guide</li> <li>accurately measure, mark out, cut and shape materials and components</li> <li>accurately assemble, join and combine materials and components</li> </ul>		<ul style="list-style-type: none"> <li>select &amp; produce appropriate lists of tools and equipment suitable for the task</li> <li>explain their choice of materials and components according to functional properties and aesthetic qualities</li> <li>demonstrate resourcefulness when tackling practical problems</li> </ul>		<ul style="list-style-type: none"> <li>follow procedures for safety and hygiene</li> <li>select materials and components suitable for the task</li> <li>use techniques that involve a number of steps</li> </ul>	
<b>Evaluate</b>	<ul style="list-style-type: none"> <li>consider the views of others, including intended users, to improve their work</li> <li>what impact products have beyond their intended purpose</li> </ul>		<ul style="list-style-type: none"> <li>research inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</li> <li>how well products have been designed, made</li> <li>why materials have been chosen</li> <li>what methods of construction have been used</li> <li>how well products work and achieve their purposes</li> </ul>		<ul style="list-style-type: none"> <li>identify the strengths and areas for development in their ideas and products</li> <li>how well products meet user needs and wants</li> </ul>	
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li>how to program a computer to monitor changes in the environment and control their products</li> <li>how to use learning from science/ICT/maths to help products that work</li> <li>that mechanical and electrical systems have an input, process and output • the correct technical vocabulary for the projects they are undertaking</li> </ul>		<ul style="list-style-type: none"> <li>how to reinforce and strengthen a 3D framework</li> <li>how more complex electrical circuits and components can be used to create functional products</li> </ul>		<ul style="list-style-type: none"> <li>that a recipe can be adapted by adding or substituting one or more ingredients</li> </ul>	
<b>Cooking and Nutrition</b>					<ul style="list-style-type: none"> <li>how to prepare and cook a variety of savoury dishes safely and hygienically including, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing and, spreading.</li> <li>that recipes can be adapted to change the appearance, taste, texture and aroma</li> <li>how food is processed into ingredients that can be eaten or used in cooking</li> </ul>	
<b>Key Skills</b>	understand how a floor robot moves; • program it accurately to move along a given route; • explore and select from a range of different materials to create obstacle squares generate ideas for an adventure map and appropriate obstacles matching their overall theme; • evaluate adventure maps against design criteria independently; • explain the best joining methods based on their knowledge of the properties of materials		Explore existing free standing structures and explain what gives them strength, reinforcement and stability. • Select tools and equipment to join • Design and build a simple marble run which incorporates some varied bends. • Use a wider range of tools and equipment to perform practical tasks accurately. • Use appropriate cutting and shaping techniques that include cuts • Consider the views of others to improve their work.		<ul style="list-style-type: none"> <li>Follow a simple recipe.</li> <li>Use some basic food skills, such as grating and chopping, which enable them to prepare a variety of simple savoury dishes</li> <li>Explain nutritional similarities between different types of food eaten around the world and say why this is important.</li> <li>Use a wide variety of basic food skills such as peeling, juicing and dicing.</li> </ul>	
<b>Learning Intentions</b>	To program and control floor robots. To generate and develop ideas through discussion. To research a range of materials To evaluate the work.		To investigate free standing structures and apply my understanding of structures To use a wider range of tools and equipment to perform practical tasks accurately. To develop a range of practical skills to create bends. To select from and use materials and components to make a marble run To evaluate and improve my design and technology work		To follow recipes demonstrating a range of cooking techniques	
<b>Resources</b>	Bee-Bots/Floor robots with similar functions A range of different materials (each piece of materials should be at least 50cm x 50cm) 15cm x 15cm laminated A4 coloured squares (the number and colour will depend on what was requested by the groups in Lesson 4 on their Adventure Map Square Sheet) • 15cm x 15cm A4 card squares (to create obstacle squares) • 15cm x 15cm A4 card squares (to create start and finish squares) • Range of materials • Staplers • Staples • Glue Stick • PVA glue • Glue Holders • Glue Spreaders • Sticky Tape • Scissors Completed Adventure Maps from Lesson 5 Digital Camera		Cardboard tubes, Marbles, Card, Paper, A range of joining materials such as PVA glue, masking tape, glue sticks, adhesive tape, double-sided tape Scissors, tape measure. Cardboard tubes • Marbles • Card • Paper • A range of joining materials such as PVA glue, masking tape, glue sticks, adhesive tape, double-sided tape Scissors, craft knives, cutting boards. • Stopwatches Marble run sets, ideally 6. Stopwatches • Cameras		Saucepans, hob, measuring jug, sieves,, bowls, spoons, trays, fork, safe knife, chopping boards, kitchen scissors, bowls, spoons, grater, fish slice, frying pan. Ingredients:	
<b>Vocabulary</b>	Floor robot, Bee-Bot, input, output. Adventure, maps, obstacles, squares, background, start, finish. Materials, properties, cotton, silk, felt, cardboard, paper, bubble wrap, plastic. design criteria, plan, evaluate, revise. programming, monitoring		Preparation: Free standing, structure, support, stiffen, sturdy, stable, reposition, strengthen, reinforce. Accurate, join, shape, cut aesthetics, tools, equipment, functional. Bend, skills, tools, equipment, cut, shape, join. Existing, product. Aesthetic, functional, iterative process. Test, evaluate, design criteria, improve.		Ingredient, climate, taste, prepare, sensory, world, global, Diet, food groups, eatwell plate, protein, dairy, carbohydrates, starchy fruit, fat, vegetables. Rice, boil, hob, heat source, recipe, staple, eatwell plate, storage, handling, nutritional, benefits and measure fry, grate, dice, chop,	