



## Design and Technology

Intent: DT should provide children with a real life context for learning. At Chaddlewood we want to create opportunities for children to thrive in the wider world. Through the DT curriculum, children should be inspired by engineers, designers, chefs and architects to enable them to create a range of structures, mechanisms, textiles, electrical systems and food products with a real life purpose. Children design products with a purpose in mind and an intended user of the products. Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this.

DT at Chaddlewood is planned using the NC subject content as assigned to each key stage. We then use knowledge and skills combined as a basis to design, make and evaluate their products and dishes.

DT projects are often made cross curricular-linking to other subjects taught.

The planning format follows an immersion, review and assessment and skills and knowledge rich phases. Lessons are differentiated by outcome and assessments are made against the assessment framework mapped out for each year group, for each unit.

Cooking skills are progressive from EYFS to year 6 and are broken down into small steps which are assigned to year groups. This is to ensure that when a Chaddlewood child reaches year 6 they can confidently use a range of these skills to create a variety of dishes successfully.

Planning also provides the opportunity to embed previous learning and develop links between lessons and their objectives. Connections are made with previously taught DT topics as part of the 'overlap of learning' and to consolidate and deepen understanding. We share photos of what the children have learnt in previous year groups and use this tool to retrieve prior knowledge.

At Chaddlewood we believe there are 6 essentials of DT which we use to pitch our projects effectively so they can reach their full potential. The focusses for these are: user, purpose, functionality, design decisions, innovation, authenticity.

When working, it is essential that children know how to stay safe and use a variety of tools correctly. This is paramount in all areas of DT. For example in cooking we always start our practical lessons by working through the 6 steps to safe cooking preparation; tie long hair back, remove jewellery, put on a clean apron, make sure your equipment and food prep area is clean, roll up sleeves and wash hands.

Skills and knowledge	Foundation	Year 1	Year 2
Substantive themes	<ul style="list-style-type: none"><li>• Create and talk about a design criteria with support</li><li>• Experiment with joining</li></ul>	<ul style="list-style-type: none"><li>• Create a design criteria</li><li>• Design products and use annotated drawings of ideas</li></ul>	<ul style="list-style-type: none"><li>• Create a design criteria.</li><li>• Design a product and label ideas and materials.</li><li>• Use a range of tools to</li></ul>

	<p>techniques</p> <ul style="list-style-type: none"> <li>• Use a range of tools to join and finish materials, with support, to create a shoe (or other object related to our Traditional tale theme)</li> <li>• Use split pins to create a moving Santa, Reindeer</li> <li>• Decorate a Christmas cake</li> <li>• Make a waterproof hat for the class bear and then test</li> </ul>	<ul style="list-style-type: none"> <li>• Use a range of tools to join and finish materials, with support, to create a pirate ship, puppet and moving picture.</li> <li>• Use a running stitch with support to join materials together to create a puppet.</li> <li>• Explore how waterproof a pirate ship is.</li> <li>• Select appropriate tools to join securely from a limited range.</li> <li>• Prepare healthy food (a fruit salad) and to identify the sections of the eatwell guide.</li> </ul>	<p>join, finish and cut materials to create a space buggy, Christmas decoration and a healthy pizza.</p> <ul style="list-style-type: none"> <li>• Use running stitch and cross stitch to join materials together to create a christmas decoration</li> <li>• Explore what components of a vehicle would be beneficial for a space buggy.</li> <li>• Select appropriate tools to join securely.</li> <li>• Prepare healthy pizzas and burritos and understand the sections of an eatwell guide.</li> <li>• Know where the ingredients we are using comes from.</li> </ul>
Cross curricular connections	<p>Communication and Language - talk about what makes a good design  English - Traditional tales topic  Science - waterproof testing of hat  Art - Experimenting and exploring materials and being imaginative</p>	<p>Science - waterproof testing, balanced diets  History - famous pirates (Sir Francis Drake)  ICT - using photography and on-screen programs to communicate ideas  Fruit salads- Art- Archimboldo  Jam tarts- literacy instruction writing</p>	<p>ICT- research  Science- materials and their properties.  History- Neil Armstrong/Christopher Columbus  Pizzas- science/plants  Burritos- well-being week</p>
Overlap of learning: which other areas in other year groups or topics does this relate to?	<p>Build on skills learned at pre-school/nursery and home</p> <ul style="list-style-type: none"> <li>• Eatwell guide all year groups</li> <li>• Drawing ideas Y1/2</li> <li>• Y1/Y2 - selecting appropriate tools for making</li> </ul>	<p>KS1</p> <ul style="list-style-type: none"> <li>• Understand where food comes from:</li> <li>• F/Yr2- selecting appropriate tools for making.</li> <li>• Researching using ICT Yr 2</li> <li>• Running stitch used in Yr 2 with less support. Y2 will use a cross stitch.</li> </ul>	<p>KS1</p> <ul style="list-style-type: none"> <li>• Understand where food comes from: Recap Y1, wheat (carbs), Dairy, oil and spreads. Knife skills- bridge and claw hold.</li> <li>• F/Yr1- selecting appropriate tools for making.</li> <li>• Researching using ICT Yr 1</li> </ul>

		<ul style="list-style-type: none"> <li>• Drawing ideas- Y2/F.</li> <li>• <b>eatwell guide all year groups</b></li> </ul>	<ul style="list-style-type: none"> <li>• Running stitch used in Yr 1- less support in Y2 move onto using cross stitch.</li> <li>• Drawing ideas- Y1/F.</li> <li>• eatwell guide all year groups</li> </ul> <p>KS2</p> <ul style="list-style-type: none"> <li>• Yr6 pasties vs calzone</li> </ul>
<p><b>Work in a range of contexts</b> <i>for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]</i></p> <p><b>Design:</b> Purposeful, functional, appealing products for themselves and other users based on a design criteria.</p>	<p>ELG: They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Plan, Do, Review- shoemaker 2D shoe (end result may vary from year to year based on topic). Explore shoes and discuss design for themselves with clear purpose.</p> <p>ELG: Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology.</p> <p>Plan- Draw and label their ideas.</p> <p>Do- shoemaker 2D shoe (end result may vary from year to year based on topic).</p>	<p>Puppet- show for peers Pirate ship- Sir Francis Drake Moving Picture- Class book. Jam turnover- plans to be repeated at home Fruit Salad-repeated at home</p>	<p>Xmas dec- family member Space buggy- NASA Healthy Pizza- themselves Burritos- themselves</p>
<p><b>Design:</b> Talking, drawing, templates, Mock ups, ICT (where appropriate).</p>	<p>Christmas Cakes - talk about different cakes that you can get when celebrating different events. USING ICT look at different designs of Christmas cake. Tell the children they will be decorating their own cake, children to do a simple design of the cake.</p> <p>Use of different templates of shoes.</p>	<p>Puppet- Annotated drawing of idea. Use of template. Pirate ship- Research using ICT Moving Picture- Drawing of idea Jam turnover- drawing, talking Fruit Salad- drawing, talking</p>	<p>Xmas decs- Template based on child's design criteria, drawing, talking Space buggies- Mock up wheels and axles, drawing, talking Space buggies- research using ICT buggies and equipment. Healthy pizza- drawing, talking Burritos- Drawing, talking</p>

	Research on shoes using ICT		
<p><b>Make: Tools and joining</b> Select from and use a range of tools and equipment to perform practical tasks. For example cutting, shaping, construction materials, joining structures.</p> <p>Tools</p>	<p>Forest school- Using natural materials to weave and create different things. Twig frames, spiders webs and towers. Using tools such as bow saw, knife and loppers to change the size of natural material.</p> <p>Joining- (caterpillar) exploration of joining using treasury tags, glue, masking tape, hole punch</p> <p>Christmas cakes - sieves, knives, mixing bowls and spoons. Select ingredients that go into a traditional Christmas cake.</p>	<p>Tools used- scissors, glue, masking tape, hole punch, duct tape, cold glue gun (where appropriate)</p> <p>Moving pictures- scissors, glue, masking tape (where appropriate)</p> <p>Pirate ships- scissors, glue, masking tape, hole punch, duct tape, cold glue gun (where appropriate)</p> <p>Fruit salads - knives, peelers, bowls, fork, spoon, chopping boards</p> <p>Jam tarts - rolling pin, spoon, cake tin, cookie cutter, knives, pastry brush, bowls</p>	<p>Tools used- Scissors, glue, junior hacksaw, workbench, masking tape, stapler, cold glue gun, needle and thread.</p> <p>Space buggies- Scissors, glue, junior hacksaw, workbench, masking tape, stapler, cold glue gun. Hole punch</p> <p>Pizzas- Knives, grater, peeler, chopping board, juicer, oven (kitchen), bowls, spoon, tin opener, fork, scissors</p> <p>Burritos- Knives, grater, peeler, chopping board, juicer. Multicooker, bowls, wooden spoon, tin opener, fork, scissors</p>
<b>Textiles</b>	Weaving - using a variety of materials (threading skills)	Puppet- running stitch (supported). Children attach other details using glue.	Xmas Decs- running stitch and cross stitch. Children attach, sequins or other details using stitches or glue.
<p><b>Make:</b> Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p>	<p>Threading- beads, pasta tubes, natural materials.</p> <p>Construction (free exploration) - duplo, lego, intastar, junk modelling.</p>	<p>Different ways of joining together to construct a pirate ship and suitable materials to make a ship out of.</p>	<p>Space buggies- constructing a buggy using recyclable materials</p> <p>Pizzas- Knives, grater, peeler, chopping board, juicer, oven (kitchen), bowls, spoon, tin opener, fork, scissors. Select from a range of ingredients chosen from evaluations</p> <p>Burritos- Knives, grater, peeler, chopping board, juicer. Multicooker, bowls, wooden spoon, tin opener, fork, scissors. Select from a range of ingredients chosen from must prior knowledge.</p>

<p><b>Health and safety</b></p>	<p>Forest School safety rules linked to using tools. 1:1 when using knives, loppers, bow saw 1:1 when cutting vegetables using a knife</p>	<p>Hot jam whilst making jam turnovers.  Scissor and sewing safety.  Fruit salads- 1:1 using knives and peelers</p>	<p>1:1 support when using junior hacksaw and mitre. Show children how to use tools safely eg stapler, scissors, cold glue gun to be used with an adult also.  Pizzas/burritos-1:1 using knives peelers and graters. Careful near hot ovens/multi cooker.  Textiles- sharp needles</p>
<p><b>Evaluating: Explore range of existing products, Evaluate a range of existing products</b></p>	<p>Christmas Cakes - look at cakes and talk about how they are different from each other and if they look like their designs.  Shoes - explore existing products, look at different shoes and their purpose.</p>	<p>Moving pictures- tab books Puppets- looks at different types of puppets. Jam turnovers- Food tasting Fruit salad- Food tasting</p>	<p>Xmas decs- Explore and evaluate a range of existing xmas decs 2D and 3D. Space buggies- Look at existing space buggies and what equipment they use. Look at existing cars and how they move. Healthy pizzas- explore and evaluate a variety of pizzas Burritos- Evaluate the ingredients normally used in burritos and decide what must be used and what is our choice.</p>
<p><b>Evaluating: Their ideas and products against design criteria</b></p>	<p>Review/Evaluate - Speech bubbles with their ideas, thoughts and feelings recorded in books.</p>	<p>Pirate ships- Water proof testing (design criteria)  All other products evaluated against design criteria.</p>	<p>Space buggies- testing wheels and axles to then create a design criteria. Design criteria developed from what an astronaut might need.  All other products evaluated against design criteria.</p>
<p><b>Technical knowledge: build structures exploring how they can be made stronger, stiffer and more stable</b></p>	<p>Construction - model making - how can you make your model stronger, stiffer or a different shape and height.</p>	<p>Pirate ships- comparisons of different pirate boats from groups, then alteration as needed. Consideration of masking tape / cellotape effectiveness</p>	<p>Space buggies- Exploring how we can attach materials securely.</p>
<p><b>Technical knowledge: explore and use mechanisms for example, levers, sliders, wheels and axles], in their products.</b></p>	<p>Moving joints on animals (frog)</p>	<p>Moving pictures- lever and slider Weather picture only using paper and slider. Printed pictures for lever using ICT.  Class pop up book.</p>	<p>Space buggies- Wheels and axles.</p>

<p><b>Cooking and Nutrition:</b> Prepare dishes (see skills sheet)</p> <p>use the <u>basic principles</u> of a healthy and varied diet to prepare dishes.</p> <p>Understand where food comes from</p>	<p>Explore healthy and unhealthy foods. Healthy week detectives- Children use ICT, books, body (science link).</p> <p>Talk about and make healthy food- Wraps, milk shake and fruit kebabs.</p> <p>Festivals week - explore, discuss and make different food eaten by other religions.- Burfi (coconut sweets), make fruit jellies, cook and taste saffron rice with sultanas and Krah Prashad (children observe raw food cooked and how it is changed using heat) Children watch a video about the different foods they will make and follow recipe prompt sheets with adult guidance.</p>	<p>Eatwell guide- Explore the sections of the eatwell guide and place <b>fruit and vegetables</b> ingredients onto it.</p> <p>Understand where food comes from: <b>fruit and veg, protein, unhealthy foods outside the eatwell guide (eaten small and less often). Focus on fruit and vegetables and if they grow on the ground, in a tree, on a bush etc.</b></p>	<p>Eatwell guide- Explore the sections of the eatwell guide and place a variety of ingredients onto it. Focus on where the pizza and burrito ingredients would be placed.</p> <p>Understand where food comes from: Recap Y1,Y2- <b>wheat (carbs), Dairy, oil and spreads foods and where they come from.</b></p>
<p><b>Vocabulary</b></p>	<p>Healthy, not so healthy, fruit, vegetables, sugars - sweets, meat,dairy, oils, vitamins, cooked, raw, hot,cold, heat, hard, soft, teeth, bones, body, safety in the kitchen.</p> <p>Join, strong, weak, stable, firm, construct, texture, rough, smooth, light, heavy, fit for purpose, change, improve, safely</p>	<p><b>Puppets</b> Plan, shape, template, glue, design, running stitch, needles</p> <p><b>Pirate ship</b> model, plan, shape, glue, tape, design, evaluate</p> <p><b>Moving Picture</b> Paper, pattern, plan, template, glue, tape, design, evaluate</p> <p><b>Jam turnovers</b> Ingredients, recipe, Healthy, not healthy, fibre, carbohydrates, protein, fruit, vegetables, oil, spread, meat diary,</p> <p><b>Fruit Salads</b> Ingredients, texture, Healthy, not healthy, fibre, carbohydrates,</p>	<p><b>Space buggies-</b> diagram , design, axle, vehicle, lunar drill, antenna, camera, steering wheel, satellite, radio, storage, tongs, evaluate, mock up, research, chassis, dowel, masking tape, plastic, reclaimed materials, selloptape, junior hacksaw, mitre, glue gun, scissors,</p> <p><b>Pizzas-</b> Diagram, design, Healthy, not healthy, fibre, carbohydrates, protein, fruit, vegetables, oil, spread, meat, diary, processed farm to fork, evaluate, recipe, grate, dice, chop, crush, sieve, bake, mix, hygienic, measuring jug, scales, mixing bowl, spatula, oven</p> <p><b>Christmas decorations-</b></p>

		protein, fruit, vegetables, oil, spread, meat diary,	Diagram, design, Running and cross stitch, fabric, pin, attach, join, evaluate, pattern, template, needles, <b>Burritos-</b> design, Healthy, not healthy, fibre, carbohydrates, protein, fruit, vegetables, oil, spread, meat diary, evaluate, recipe, grate, dice, chop, bowl, wooden spoon, multi cooker, knife, wrap
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