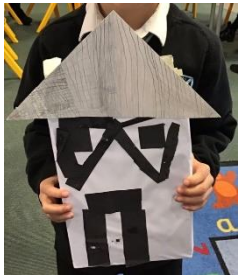
Design Technology (DT) at Teignmouth Primary School

Children at Teignmouth Primary school receive a DT curriculum which allows them to exercise their creativity through designing and making. We are on an exciting new direction in our practical work, allowing the children a greater opportunity to use problem solving, engineering-based techniques that can explore solutions for them in a classroom environment. Each unit of work has a purpose for a user so children can test their understanding of the issue discussed in a practical, creative manner. Teamwork, prototypes, preliminary sketches, all are used in order to help the children with their problem solving. The children are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. The DT curriculum is based around the topic areas taught within each year group, allowing the classes a chance to explore the subjects in greater depth and develop an investigative approach to their studies. Links have been made to; science, music, history, art, computing. Also, we have linked RE and PSHE with cooking and nutrition. These links are made in a cross curricular way, giving children motivation and meaning for their learning. Children will learn basic cooking skills linking closely to understanding the purpose of food to allow our children to develop understanding of nutrition and healthy living. Class teachers lead the lessons at school and guide the class through the tasks, demonstrating techniques and safety procedures to ensure every child in the class can feel their confidence grow and develop and no one feels left out or unable to be successful. Children will adapt and improve their work and this will aid the children to become more resilient within themselves and be reflective of the wider world. Future Engineers and Designers have to start somewhere and they are at a great place to begin!



EYFS

Pupils will have the confidence to take risks when tackling new challenges and be curious and creative to solve simple, manufactured/encountered problems practically. They will know and identify similarities and differences in a range of materials. They will know that different technology and tools are used to make different products and can select these appropriately for a given task. Children will begin to use simple equipment safely and effectively to effect changes to materials.

KS1

Pupils will have the confidence to take greater risks when tackling new challenges and be curious and creative to solve manufactured/encountered problems practically to help the local community. Children will follow a process of design, make and evaluate to create purposeful products. They will be introduced to subject-specific vocabulary to articulate their proposed design and be shown the technology and techniques to carry this out. Children will use their knowledge and judgement to choose appropriate methods and materials and use these safely to meet a given criteria. Pupils will be consistently reflective to enable them to adapt and improve their work to ensure it is of good quality.

KS2

Pupils will become confident risk-takers when tackling new challenges and be curious and creative to solve problems practically to satisfy evolving human needs, which will shape our world. Children will take personal responsibility for the process of designing, making and evaluating purposeful products using their cross-curricular knowledge. They will build on prior learning and be familiar with subject-specific vocabulary to articulate their proposed design and use appropriate technology to research the problem and techniques to carry this out. Children will use their knowledge and judgement to choose appropriate methods and materials from a wider range of options and use these safely to meet their self-initiated criteria. Pupils will be consistently reflective to enable them to adapt and improve their work to ensure it is of good quality and is functional for the purpose.

There are lots of exciting learning opportunities for children in design technology this year. The overview below allows you to see what topics children will cover across the year in each year group.

What Design Technology is taught at Teignmouth Primary School?

This is an overview of what the year groups will cover.

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Squeeze and squash play dough. Pull - hull fruit, pick grapes from vine. Shape - foods by hand and with a rolling pin.	Put on coats. Crush - soft fruit with a potato masher or fork, e.g. raspberries as a topping for yogurt.	Put on shoes and socks. Peel - by hand, e.g. satsuma, banana.	Explore using cutlery. Mix/stir - to loosely. combine ingredients - mash ingredients together using a fork.	Explore using scissors. Spoon - ingredients between containers.	Comfortable grip to hold a pen. Cut out - ingredients with a cutter, e.g. dough for scones.
Year 1		**Textiles: Templates and joining techniques.** Design and make a mask for a superhero that conceals their identity and shows their special powers.	**Mechanisms: Sliders and Levers** Design and make a page with moving pictures for a class information book about space.			**Food: Preparing fruit and vegetables** Design and make fruit and vegetable kebabs for an Eid al-Adha celebration
Year 2		**Textiles: Templates and joining techniques.** Design and make a mask for a superhero that conceals their identity and shows their special powers.	**Mechanisms: Sliders and Levers** Design and make a page with moving pictures for a class information book about space.			**Food: Preparing fruit and vegetables** Design and make fruit and vegetable kebabs for an Eid al-Adha celebration
Year 3		**Structures: Shell structures** Design and make a working musical instrument for a performance.	**Electrical Systems: Simple circuits and switches** Make a head torch for an archaeologist searching for Anglo-Saxon artefacts.		**Food: Healthy and varied diet** Make Viking pancakes with berries for a Viking feast	
Year 4		**Structures: Shell structures** Design and make a working musical instrument for a performance.	**Electrical Systems: Simple circuits and switches** Make a head torch for an archaeologist searching for Anglo-Saxon artefacts.		**Food: Healthy and varied diet** Make Viking pancakes with berries for a Viking feast	
Year 5	**Food: Celebrating culture and Seasonality** Explore seasonal food eaten by the Maya. Make sweet and savoury scones or muffins inspired by these ingredients.		**Mechanical Systems: Pulleys or Gears** Create a pulley system to lift Henry VIII out of his bed		**Textiles: Combining different Fabric Shapes** 'Make, Do and Mend' project to make a bag out of old clothes.	
Year 6	**Food: Celebrating culture and Seasonality** Explore seasonal food eaten by the Maya. Make sweet and savoury scones or muffins inspired by these ingredients.		**Mechanical Systems: Pulleys or Gears** Create a pulley system to lift Henry VIII out of his bed		**Textiles: Combining different Fabric Shapes** 'Make, Do and Mend' project to make a bag out of old clothes.	

What Design Technology is taught at Teignmouth?

This is an overview of what the year groups will cover.

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Use small pegs. Thread beads.	Experiment with mark making tools and joining techniques.	Hold scissors correctly and follow a curved line. Tear - fresh herbs/ leaves.	Know how to work safely and hygienically. Measure - using a spoon, e.g. dried herbs, dried fruit - count ingredients.	Cooking techniques- spreading and cutting. Cut - soft foods with butter knife, e.g. banana, canned peach slices.	Use a tripod grip to hold a pen. Follow - instructions given one at a time by an adult. Carry out - instructions with support.
Year 1	**Structures: Freestanding structures** Make a bridge to get people safely over the River Thames to escape the Great Fire of London			**Food: Prepare fruit and vegetables.** Create a healthy fruit salad to serve at a woodland creatures' tea party	**Mechanisms: Wheels and Axles** Make a push/pull toy for a child to play with.	
Year 2	**Structures: Freestanding structures** Make a bridge to get people safely over the River Thames to escape the Great Fire of London			**Food: Prepare fruit and vegetables.** Create a healthy fruit salad to serve at a woodland creatures' tea party	**Mechanisms: Wheels and Axles** Make a push/pull toy for a child to play with.	
Year 3		**Food: Healthy and varied diet** Make a sandwich for a class picnic.	**Mechanical Systems: levers and linkages** Make a catapult for a Roman soldier.	.		**Textiles: 2D Shape to 3D Product** Make a sea creature soft toy that could be sold in the aquarium gift shop.
Year 4		**Food: Healthy and varied diet** Make a sandwich for a class picnic.	**Mechanical Systems: levers and linkages** Make a catapult for a Roman soldier.	.		**Textiles: 2D Shape to 3D Product** Make a sea creature soft toy that could be sold in the aquarium gift shop.
Year 5	**Food: Celebrating culture and Seasonality** Research, design and make a healthy seasonal soup			**Structures: Frame Structures** Make a market stall for a trader in London at the time of the Great Plague		**Electrical Systems: monitoring and control** Make an alarm for a valuable Egyptian artefact in a museum
Year 6	**Food: Celebrating culture and Seasonality** Research, design and make a healthy seasonal soup			**Structures: Frame Structures** Make a market stall for a trader in London at the time of the Great Plague		**Electrical Systems: monitoring and control** Make an alarm for a valuable Egyptian artefact in a museum

Progression of skills and knowledge

	EYFS	Year 1/2	Year 3/4	Year 5/6
Design	Talk about what they are going to use and how they will use them. **ELG: Speaking:** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.	Communicate these ideas through talk and drawings. Design functional and appealing products for a chosen user and purpose based on simple design criteria. Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology	Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.	Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer aided design. Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
Evaluate	Talk about their finished product, what features did they use? **ELG: Speaking:** Offer explanations for why things might happen.	Explore a range of existing books and everyday products that use simple sliders and levers. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Explore and evaluate a range of products with wheels and axles. Evaluate ideas and finished products against design criteria, including intended user and purpose.	Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria, user needs and the views of others as they design and make.	Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g., tables/graphs/charts such as star diagrams. Understand how key chefs have influenced eating habits to promote varied and healthy diets. Investigate and evaluate a range of existing frame structures. Test products with intended user and critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. Whilst also taking into account the views of others when identifying improvements. Research key events and individuals relevant to frame structures. Investigate famous manufacturing and engineering companies relevant to the project.

Mechanisms	Explore pushing and pulling toys.	Explore parts of a picture or vehicle that move. Explain how they are moving and the name of the mechanism that helps it to move.	Know how mechanical systems such as levers, linkages or pneumatic systems create movement.	Know how mechanical systems such as cams, pulleys or gears create movement. Explain why the mechanical components are suitable for the product and movement.
Structures	Explore how different pieces of junk modelling can join together.	Explore what materials we could use to make a structure 'mock-up'. Perform strength tests and know how to make it stronger.	Know which shapes joined together help to make a stronger structure. Use a shell structure and use this knowledge to design make products.	Use a prototype to test and evaluate from before creating the final product.
Cooking & Nutrition (Food)	Crushing with a fork or potato masher. Peeling by hand. Shaping with a rolling pin. Mixing and measuring with spoons and cups. Cutting with cutters and plastic butter knives.	Squeezing fruit with a juicer. Use a swivel peeler with adult support. Mix with a whisk. Measure with different measuring spoons of different sizes. Use a grater with adult support. Cutting with a table knife. Name and sort group into different food groups e.g fruit and vegetables, dairy, meat.	Crush food with a garlic press. Peel with a swivel peeler. Mix food with a blender with adult support. Measure with a jug and digital scales. Cut food and use a grater with vegetable knives with support. With support heat food with a toaster and a hob. Apply the principles of healthy eating and learn how to prepare and cook dishes.	Measure ingredients with analogue scales. Grate food mostly independent. Under adult supervision, heat food using a kettle, grill and an oven. Know that food items are sometimes made from two or more food groups. Know the proportions of different food groups we should eat.
Textiles	Explore folding and cutting different materials.	Explore the properties of different fabrics and join them using a running stitch with plastic needles. Make a template and use it to mark out onto a piece of fabric.	Measure a template accurately and use this template to accurately cut out chosen piece of fabric. Use metal needles to complete a running stitch.	Join a pattern piece of tracing paper to fabric to ensure minimal wastage and know how to leave a seam allowance.
Electrical Systems			Know that when you turn on the switch it completes the circuit and powers on a light or motor in your circuit.	Use a cross sectional drawing to show the mechanical components and structural parts of a battery powered system. Know the order of assembling the related components. They should also think about how the mechanism changes the input and output movement.

DT Vocabulary Progression

Textiles						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Join, stick, cut, fold, button, pattern, attach, sew, draw, material.	Running stitch, needle, fabric, quality, suitable, features, dye, overstitch, design, fray, mock-up, seam, Joining and finishing techniques, applique, tools, template, pattern pieces, mark out.		Fastening, compartment, zip, finishing technique, function, prototype, back stitch, felted, woven, knitted, bonded. Aesthetics, seam allowance, pinning, embroidery, back/blanket/cross stitch.		Specification, tacking, working drawing, clasp, pinking shears, design criteria, hem, reinforce, stem stitch, satin stitch, tie dye. Applique, annotate, evaluate, innovation, functionality, renewable, authentic, chain stitch. Seam, seam allowance, wadding, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings.	

Electrical Systems						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			User, fault, toggle switch, insulator, conductor, battery holder, crocodile clip. Series circuit, connection, push-to-make switch, push-to-break switch, innovative, appealing, control box, input device, output device, system		Light dependent resistor, interface control, micro switch, latching switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED). Bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit, monitor	

Mechanisms						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Pushing, pulling, moving, sliding, vehicles.	**Wheels & Axles:** Wheel, axle, fixed, free, design, make, cutting, joining, hacksaw, vice, dowel, body, cab, shaping, vehicle, assembling. **Slider & Leavers:** Mechanism, lever, slider, slot, pivot, guide/bridge, masking tape, fastener, pull/push, down, straight, work, design, evaluate, purpose, finishing.		**Leavers & Linkages:** Loose pivot, fixed pivot, system, input, process, output, linear, rotary, reciprocating, innovative, appealing, linkage, oscillating, slot, bridge, guide system		**Pulleys or Gears:** Pulley, gear, driver, follower, rotation, motor, belt, spindle, motor, circuit, switch, ratio, transmit, annotated drawings, exploded diagrams, functionality, axle, input, process, output, electrical system, mechanical system	

	shaping, fixed, free, moving, join, curve, forwards, backwards.					
Structures						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Scissors, attach, glue, masking tape, Sellotape, stick, join, cut, fold, model.	**Freestanding Structures:** Cut, fold, join, fix, weak, strong, structure, wall, tower, framework, weak, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder.		**Shell Structures:** Shell, structure, net, marking out, material, joining, three dimensional, stiff, shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, Assemble, prism, vertex, breadth, capacity, scoring, adhesives, reduce, reuse, recycle, corrugating, ribbing, laminating, material, stiff, strong, font, lettering, text, graphics, decision, shaping, tabs, accuracy,		**Frame Structures:** Reinforce, triangulation, stability, temporary, permanent, prototype, innovation, functional, design brief	
Cooking & Nutrition (Food)						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fruit, vegetables, chop, cut, healthy, sharp, sour, slice, peel, squeeze, ingredients, hygiene, safety, tools, mixing, measuring, rolling, shaping.	**Preparing Fruit & Vegetables:** Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging, utensils, hygiene.		**Healthy & Varied Diet:** Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, hot, spicy, healthy/varied diet		**Celebrating Culture & Seasonality:** Ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs. Fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality Utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble.	