

Key Learning in Design and Technology: Years 1 and 2

Design		Make	Evaluate
- Use pictures and words to convey what they want to design/make. - Propose more than one idea for their product. - Use kits/reclaimed materials to develop more than one idea. - Model ideas with kits, reclaimed materials. - Select appropriate technique explaining: First... Next... Last.... - Explore ideas by rearranging materials. - Select pictures to help develop ideas. - Use drawings to record ideas as they are developed. - Add notes to drawings to help explanations. - Describe their models and drawings of ideas and intentions.		- Discuss their work as it progresses. - Select materials from a limited range that will meet the design criteria. - Select and name the tools needed to work the materials. - Explain what they are making. - Explain which materials they are using and why. - Name the tools they are using. - Describe what they need to do next.	- Explore existing products and investigate how they have been made. - Decide how existing products do/do not achieve their purpose. - Talk about their design as they develop and identify good and bad points. - Note changes made during the making process as annotation to plans/drawings. - Say what they like and do not like about items they have made and attempt to say why. - Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.
Food	Textiles	Structures	Mechanisms
- Develop a food vocabulary using taste, smell, texture and feel. - Group familiar food products e.g. fruit and vegetables. - Explain where food comes from. - Cut, peel, grate, chop a range of ingredients - Work safely and hygienically. - Understand the need for a variety of foods in a diet. - Measure and weigh food items, non-statutory measures e.g. spoons, cups.	- Cut out shapes which have been created by drawing round a template onto the fabric. - Join fabrics by using e.g. running stitch, glue, staples, over sewing, tape. - Decorate fabrics with attached items e.g. buttons, beads, sequins, braids, ribbons. - Colour fabrics using a range of techniques e.g. fabric paints, printing, painting.	- Explore how to make structures stronger. - Investigate different techniques for stiffening a variety of materials. - Test different methods of enabling structures to remain stable. - Join appropriately for different materials and situations e.g. glue, tape. - Mark out materials to be cut using a template. - Use a glue gun with close supervision.	- Join appropriately for different materials and situations e.g. glue, tape. - Try out different axle fixings and their strengths and weaknesses. - Make vehicles with construction kits which contain free running wheels. - Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. - Roll paper to create tubes. - Cut dowel using hacksaw and bench hook. - Attach wheels to a chassis using an axle. - Mark out materials to be cut using a template. - Fold, tear and cut paper and card. - Cut along lines, straight and curved. - Use a hole punch. - Insert paper fasteners for card. - Experiment with levers and sliders to find different ways of making things move in a 2D plane.

Key Learning in Design and Technology: Years 3 and 4

Design		Make	Evaluate
- Develop more than one design or adaptation of an initial design. - Plan a sequence of actions to make a product. - Record the plan by drawing using annotated sketches. - Begin to use cross-sectional and exploded diagrams. - Use prototypes to develop and share ideas. - Think ahead about the order of their work and decide upon tools and materials. - Propose realistic suggestions as to how they can achieve their design ideas. - Consider aesthetic qualities of materials chosen. - Use CAD where appropriate.		- Prepare pattern pieces as templates for their design. - Cut slots. - Cut internal shapes. - Select from a range of tools for cutting shaping joining and finishing. - Use tools with accuracy. - Select from techniques for different parts of the process. - Select from materials according to their functional properties. - Plan the stages of the making process. - Use appropriate finishing techniques.	- Investigate similar products to the one to be made to give starting points for a design. - Draw/sketch products to help analyse and understand how products are made. - Research needs of user. - Identify the strengths and weaknesses of their design ideas in relation to purpose/user. - Decide which design idea to develop. - Consider and explain how the finished product could be improved. - Discuss how well the finished product meets the design criteria of the user. - Investigate key events and individuals in Design and Technology.
Food	Textiles	Structures	Mechanical and Electrical Systems and ICT
- Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. - Analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury). - Follow instructions/recipes. - Make healthy eating choices – use the <i>Eatwell plate</i>. - Join and combine a range of ingredients. - Explore seasonality of vegetables and fruit. - Find out which fruit and vegetables are grown in countries/continents studied in Geography. - Develop understanding of how meat/fish are reared/caught.	- Develop vocabulary for tools materials and their properties. - Understand seam allowance. - Join fabrics using running stitch, over sewing, blanket stitch. - Prototype a product using J cloths. - Use prototype to make pattern. - Explore strengthening and stiffening of fabrics. - Explore fastenings (inventors?) and recreate some. - Sew on buttons and make loops. - Use appropriate decoration techniques.	- Develop vocabulary related to the project. - Create shell or frame structures. - Strengthen frames with diagonal struts. - Make structures more stable by giving them a wide base. - Measure and mark square section, strip and dowel accurately to 1cm.	- Develop vocabulary related to the project. - Use mechanical systems such as gears, pulleys, levers and linkages. - Incorporate a circuit into a model. - Use electrical systems such as switches bulbs and buzzers. - Use ICT to control products. - Use lolly sticks/card to make levers and linkages. - Use linkages to make movement larger or more varied.

Key Learning in Design and Technology: Years 5 and 6

Design		Make	Evaluate
- List tools needed before starting the activity. - Plan the sequence of work e.g. using a storyboard. - Record ideas using annotated diagrams. - Use models, kits and drawings to help formulate design ideas. - Combine modelling and drawing to refine ideas. - Devise step by step plans which can be read / followed by someone else. - Use exploded diagrams and cross-sectional diagrams to communicate ideas. - Sketch and model alternative ideas. - Decide which design idea to develop.		- Make prototypes. - Develop one idea in depth. - Use researched information to inform decisions. - Produce detailed lists of ingredients / components / materials and tools. - Use a computer to model ideas. - Select from and use a wide range of tools. - Cut accurately and safely to a marked line. - Select from and use a wide range of materials. - Use appropriate finishing techniques for the project. - Refine their product – review and rework/improve.	- Research and evaluate existing products (including book and web based research). - Consider user and purpose. - Identify the strengths and weaknesses of their design ideas. - Give a report using correct technical vocabulary. - Consider and explain how the finished product could be improved related to design criteria. - Discuss how well the finished product meets the design criteria of the user. Test on the user! - Understand how key people have influenced design.
Food	Textiles	Structures	Mechanical and Electrical Systems and ICT
- Prepare food products taking into account the properties of ingredients and sensory characteristics. - Weigh and measure using scales. - Select and prepare foods for a particular purpose. - Work safely and hygienically. - Show awareness of a healthy diet (using the eatwell plate). - Use a range of cooking techniques. - Know where and how ingredients are grown and processed. - Consider influence of chefs e.g. Jamie Oliver and school meals, Hugh Fearnley-Whittingstall and sustainable fishing etc.	- Use the correct vocabulary appropriate to the project. - Create 3D products using patterns pieces and seam allowance. - Understand pattern layout. - Decorate textiles appropriately (often before joining components). - Pin and tack fabric pieces together. - Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision). - Combine fabrics to create more useful properties. - Make quality products.	- Use the correct terminology for tools materials and processes. - Use bradawl to mark hole positions. - Use hand drill to drill tight and loose fit holes. - Cut strip wood, dowel, square section wood accurately to 1mm. - Join materials using appropriate methods. - Build frameworks to support mechanisms. - Stiffen and reinforce complex structures.	- Develop a technical vocabulary appropriate to the project. - Use mechanical systems such as cams, pulleys and gears. - Use electrical systems such as motors. - Program, monitor and control using ICT.