St Peter's C of E Primary School

Design and Technology Progression

'Let Your Light Shine'

Matthew 5:16

DESIGN			
EYFS	**Year 1/2**	**Year 3/4**	**Year 5/6**
Begin to use the language of designing and making, e.g. join, build and shape. - Learning about planning and adapting initial ideas to make them better.	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.	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.	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			
EYFS	**Year 1/2**	**Year 3/4**	**Year 5/6**
To learn to construct with a purpose in mind. Selects tools and techniques needed to shape, assemble and join materials.	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.	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.	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.

	Explain which materials they are using and why. Name the tools they are using. Describe what they need to do next.	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.	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.

EVALUATE			
EYFS	Year 1/2	Year 3/4	Year 5/6
Begin to talk about changes made during the making process, e.g. making a decision to use a different joining method	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.	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.	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.

Design and Technology Key Stage 1

	Food	Textiles	Structures	Mechanics
CYCLE A/B EYFS	To begin to understand some of the tools, techniques and processes involved in food preparation. Children have basic hygiene awareness.	To learn how to use a range of tools, e.g. scissors, hole punch, stapler, woodworking tools, rolling pins, pastry cutters. -Learn how everyday objects work by dismantling things.		
A Year 1 / 2	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 around a template onto fabric. Join fabrics, running stitch, glue, staples, sewing etc Decorate fabrics with attached items e.g. buttons, beads, sequins etc Colour fabrics using a range of techniques e.g. fabric paints, printing and making. Mark out materials to be cut using a template. Fold, tear and cut paper and card. Cut along lines, straight and curved.		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
Cycle B Year 1 / 2	<u>Food</u> Measure and weigh food items, non-statutory measures e.g. spoons and cups. Explain where food comes from		<u>create a London bridge</u> Explore how to make structures stronger. Investigate different techniques for stiffening a variety of materials.	<u>create a pull along pig or pug/queen's carriage</u> Join appropriately. Fixing things and analysing strengths and weaknesses

	Group familiar food products e.g. fruit and vegetables Cut, peel, grate and chop a range of ingredients. Develop a food vocabulary using taste, smell, texture and feel.		Mark out materials to be cut using a template. Join appropriately for different materials and situations e.g. glue, tape. Use a glue gun with close supervision.	Make items with construction kits which contain free running wheels. Use a range of materials to create models with wheels and axles e.g. tubes, cotton reels, dowels. Cut dowel using a hacksaw and bench hook. Attach wheels to a chassis using an axle.

Design and Technology Key Stage 2			
Food	**Textiles**	**Structures**	**Mechanics**

Cycle A Year 3/4	<u>Harvest Enterprise Project</u> Make a seasonal dish – savoury 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 Spring term – c.c. Geog - Find out which fruit and vegetables are grown in countries/continents studied in Geography. (region in Europe) (Products Design – whisks/kitchen appliances)	<u>Stick puppets</u> Y4 c.c. 'The Lion, the Witch and the Wardrobe' Develop vocabulary for tools materials and their properties. Understand seam allowance. Join fabrics using running stitch, over sewing, blanket stitch. Use prototype to make pattern.	<u>Create a moving toy</u> Create a working prototype and a moving creature toy - Single Cam Measure and mark square section, strip and dowel accurately to 1cm. Use lolly sticks/card to make levers and linkages. Use linkages to make movement larger or more varied. 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.	<u>Make a torch for a client</u> Incorporate a circuit into a model. Use electrical systems such as switches bulbs and buzzers. Use ICT to control products.

Cycle B Year 3/4	<u>Summer term Summer Fair project)</u> 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 Eatwell plate. Join and combine a range of ingredients. Explore seasonality of vegetables and fruit.	<u>Pencil Case for the Crayons</u> Prototype a product using J cloths. Sew on buttons and make loops. Understand seam allowance. Join fabrics using running stitch, over sewing, blanket stitch. Explore fastenings (inventors?) and recreate some. Use appropriate decoration techniques. Explore strengthening and stiffening of fabrics.	<u>Egyptian Shaduf</u> Practical focus task Cc history Develop vocabulary related to the project. Use mechanical systems such as gears, pulleys, levers and linkages.	<u>Make an Iron Man</u> Mechanics – Pneumatics and Circuit (c.c. English – The Iron Man) Develop vocabulary related to the project. Use mechanical systems such as gears, pulleys, levers and linkages. Use linkages to make movement larger or more varied. Use lolly sticks/card to make levers and linkages. Use linkages to make movement larger or more varied. Paper engineering – popups and levers Develop vocabulary related to the project. Use lolly sticks/card to make levers and linkages.

Cycle A Year 5/6	<u>Bread Making/Pretzels</u> 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.		<u>Practical Focus Task – Towers</u> making a structure to get something across linked to the tower 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. How key events and individuals in design and technology have helped shape the world (PowerPoint - Designers)	<u>Moon Buggies – electrical system with motor</u> Develop a technical vocabulary appropriate to the project. Use mechanical systems such as cams, pulleys and gears. Use electrical systems such as motors.

Cycle B Year 5/6		Investigate Products: How is a bag made? Make a Bag 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.	Structures (Design process box - Dyson) Multiple Cams (PE -Movement 2 Cams) 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.	Programming ICT - Lego 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.