Design Technology: Progression of Skills and Knowledge

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	In Year 1 pupils will learn to: - Explain what they are making and which materials they are using - Select materials from a limited range that will meet the design criteria - Select and name the tools needed to work the materials - Produce a mock up with kits or reclaimed materials - Use drawings to record ideas as they are developed and talk about them - Design a product for a given purpose - Select pictures to help develop ideas - Use drawings to record ideas as they are developed - Discuss their work as it progresses	In Year 2 pupils will learn to: - Use pictures and words to convey what they want to design and make - Select appropriate technique explaining First……Next……Last…. - Explore ideas by rearranging Materials - Describe their models and drawings of ideas and intentions - Produce a mock up with kits/reclaimed materials or ICT - Add notes to drawings to help Explanations - Design a product from a detailed design criteria	In Year 3 pupils will learn to: - Draw/sketch products to help analyse and understand how products are made - Think ahead about the order of their work and decide upon tools and materials - Record the plan by drawing (labelled sketches) or writing - Communicate their ideas through discussion and add notes to drawings to help explanations - Design innovative, functional, appealing products that are fit for purpose that are aimed at particular individuals or groups	In Year 4 pupils will learn to: - Investigate similar products to the one to be made to produce own design criteria - Plan a sequence of actions to make a product - develop more than one design or adaptation of an initial design - Propose realistic suggestions as to how they can achieve their design ideas - Design innovative, functional, appealing produces that are fit for purpose that are aimed at particular individuals or groups. - Produce annotated sketches - Make Prototypes	In Year 5 pupils will learn to: - Investigate products/images to collect ideas and create own design criteria - Sketch and model alternative ideas -Develop one idea in depth - Combine modelling and drawing to refine ideas - Plan the sequence of work using a storyboard - Record ideas using annotated diagrams - Use models, kits and drawings to help formulate design ideas - Make prototypes - Use found information to inform decisions - Use a computer aided design to model ideas - Design innovative, functional, appealing produces that are fit for purpose that are aimed at	In Year 6 pupils will learn to: - Investigate products/images to collect ideas and create own design criteria - Sketch and model alternative ideas -Develop one idea in depth - Combine modelling and drawing to refine ideas - Plan the sequence of work using a storyboard - Record ideas using annotated diagrams - Use models, kits and drawings to help formulate design ideas - Make prototypes - Use found information to inform decisions - Use a computer aided design to model ideas - Draw plans which can be read/followed by someone else - Give a report using correct technical vocabulary - Design innovative, functional, appealing produces that are fit for purpose that are aimed at particular individuals or groups

					particular individuals or groups. - When designing produce cross sectional and exploded diagrams	- When designing produced patterned pieces -
Textiles and Sheet Materials	In Year 1 pupils will learn to colour fabrics using a range of techniques e.g. fabric paints, printing and painting. Pupils in Year 1 will also learn how to cut out shapes which have been created by drawing round a template onto the fabric. In Year 1 children will learn to: - Fold, tear and cut paper and card - Roll paper to create tubes - Cut along lines, straight and curved - Curl paper - Use hole punch	In Year 2 pupils' learning will progress as they will learn to join fabrics by using running stitch, glue, staples, over sewing and tape. Pupils in Year 2 will also learn to decorate fabrics with buttons, beads, sequins, braids and ribbons. In Year 2 children will learn to: -Insert paper fasteners for card linkages -Create hinges -Use simple pop ups - Investigate strengthening sheet Materials - Investigate joinings temporary, fixed and moving	In Year 3 pupils' learning will progress as they will learn to create a simple pattern and understand the need for patterns when designing and making textiles products. In Year 3 children will learn to: - Cut slots - Cut internal shapes - Use lolly sticks/card to make levers and linkages - Create nets	In Year 4 pupils' learning will progress as they will learn to: •Prototype a product using J cloths •Use appropriate decoration techniques e.g. applique (glue or simple stitches) •Understand seam allowance •Join fabrics using running stitch, over sewing and back stitch •Explore fastenings and recreate some e.g. sew on buttons and make loops. In Year 4 children will learn to: - Use linkages to make movement larger or more varied - Use and explore complex pop ups	In Year 5 pupils' learning will progress as they will learn to: •Understand pattern layout •Decorate textiles appropriately often before joining components •Combine fabrics to create more useful properties In Year 5 children will learn to: - Cut accurately and safely to a marked line -Join and combing materials with temporary, fixed or moving joinings - Choose an appropriate sheet material for the purpose	In Year 6 pupils' learning will progress as they will learn to: •Create 3D products using pattern pieces and seam allowance •Pin and tack fabric pieces together •Join fabrics using over sewing, back stitch, blanket stitch or machine stitching •Make quality products In ear 6 children will learn to: - Use craft knife, cutting mat and safety ruler under one-to-one supervision

Constrcution	In Year 1 pupils will learn to use a range of materials to create models and discuss how structures can be made stronger. Pupils will also observe a glue gun being used by an adult.	In Year 2 pupils will learn to: - Attach wheels to a chassis using an axle - Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels - Join appropriately for different materials and situations e.g. glue, tape - Mark out materials to be cut using a template - Cut strip wood/dowel using hacksaw and bench hook - Investigate how structures can be made stronger, stiffer and more stable	In Year 3 pupils will learn to: - Make structures more stable by giving them a wide base - Prototype frame and shell structures - Use glue gun with close supervision (one to one - Choose materials based on their functional properties and aesthetic qualities	In Year 4 pupils will learn to: - Measure and mark square selection, strip and dowel accordingly to 1cm - Create shell or frame structures, strengthen frames with diagonal struts - Incorporate a circuit with a bulb or buzzer into a model - Choose materials based on their functional properties and aesthetic qualities	In Year 5 pupils will learn to: - 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 - Incorporate motor and a switch into a model - Control a model using an ICT control programme - Use a cam to make an up and down mechanism. - Use glue gun with close supervision - Choose materials based on their functional properties and aesthetic qualities	In Year 6 pupils will learn to: - Use bradawl to mark hole positions - Build frameworks using a range of materials e.g. wood, card corrugated plastic to support mechanisms - Choose materials based on their functional properties and aesthetic qualities - Apply their understanding of how to strengthen, stiffen more complex structures - Understand and use mechanical systems in their products e.g. gears, pulleys, cams, levers and linkages

Food	In Year 1 pupils will learn to: - Develop a food vocabulary using taste ,smell, texture and feel - Group familiar food products e.g. fruit and vegetables - Work safely and hygienically - Understand the need for a variety of foods in a diet - Understand where food comes from - Work with an adult to make food following a simple recipe.	In Year 2 pupils will learn to: - 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 - Follow a recipe to make food with increasing independence.	In Year 3 pupils will learn to: - Develop sensory vocabulary/knowledge using, smell, taste, texture and feel - Follow instructions - Make healthy eating choices from and understanding of a balanced diet - Join and combine a range of ingredients e.g. snack foods - Work safely and hygienically - Prepare and cook a range of predominantly savoury dishes using a range of cooking techniques. - Understand seasonality and know where and how ingredients are grown and captured	In Year 4 pupils will learn to: - Analyse the taste, texture, smell and appearance of a range of foods - Measure and weigh ingredients appropriately - Prepare and cook a range of predominantly savoury dishes using a range of cooking techniques. - Make healthy eating choices from and understanding of a balanced diet - Understand seasonality and know where and how ingredients are grown and captured	In Year 5 pupils will learn to: - Select and prepare foods for a particular purpose - Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing - Weigh and measure using scales - Cut and shape ingredients using appropriate tools and equipment e.g. grating - Join and combine food ingredients appropriately e.g. beating, rubbing in - Show awareness of a healthy diet from an understanding of a balanced diet - Understand how to feed themselves and others affordably now and in the future	In Year 6 pupils will learn to: - Prepare food products taking into account the properties of ingredients and sensory characteristics - Understand how to feed themselves and others affordably now and in the future

Evaluate	Year 1 pupils will develop skills of evaluation by:	Year 2 pupils will develop skills of evaluation by:	Year 3 pupils will develop skills of evaluation by:	Year 4 pupils will develop skills of evaluation by:	Year 5 pupils will develop skills of evaluation by:	Year 6 pupils will develop skills of evaluation by:
	-Saying what they like and do not like about items they have made and attempt to say why - Talk about their designs as they develop and identify good and bad points - Talk about changes made during the making process - Explore and evaluate a range of existing products	- Talking about their designs as they develop and identify good and bad points - Talk about changes made during the making process - Discuss how closely their finished products meet their design criteria - Explore and evaluate a range of existing products	- Identifying the strengths and weaknesses of their design ideas - Decide which design idea to develop - Consider and explain how the finished product could be improved - Investigate and analyse a range of existing products	- Discussing how well the finished product meets the design criteria and how well it meets the needs of the user - Investigate and analyse a range of existing products	- Using the design criteria to inform their decisions about ways to proceed - Justify their decisions about materials and methods of construction - Identify what does and does not work in the product - Make suggestions as how their or others design could be improved - Investigate and analyse a range of existing products	- Reflecting on their work using design criteria stating how well the design fits the needs of the user - Investigate and analyse a range of existing products