ST BREOCK SCHOOL

Design Technology Skills Progression Map

D.T Skills Progression Map – FS1 and FS2

Design	Make	Evaluate
• Use senses to explore a wide range of familiar products. • Take simple products apart and talk about their parts and how they work. • Talk about and/or use construction materials, pictures and words to plan and design. • Talk about what has been done/made in simple terms.	• Use the senses to explore and talk about materials. • Use simple tools and materials with support. • Cut paper/card with scissors • Join with tape and glue e.g. strips of cardboard to form construction. • Roll paper and card to form a tube. • Add paper and card shapes to products. • Apply simple finishes e.g. paint. • Construct products that represent their own ideas, thoughts and feelings. • Follow procedures for safety and hygiene	• Use the senses to explore a wide range of familiar products. • Talk about familiar products and what they do. • Talk about what has been made and the steps taken to achieve the outcome.
Continuous provision - Food	**Continuous provision - Structures**	**Continuous provision - Textiles**
• Sort fruit and vegetables by taste, shape, size, colour, texture and simple food groups e.g. meat, vegetables etc. • Talk about the changes that take place when food is shaped and mixed. • Use basic tools to cut, shape and mix e.g. cutters and whisks.	• Explore and investigate a range of simple, large construction materials e.g. cardboard boxes. • Use junk modelling materials to construct products. • Apply finishing techniques e.g. pencil, paint etc. • Explore building bridges and towers using large and small scale construction e.g. duplo and cardboard boxes. • Make simple 2D structures	• Explore, sort and group textiles by texture and colour etc. • Cut and stick fabrics together • Apply simple finishing techniques e.g. fabric, crayons, gluing on feathers, painting and printing. • Weave different materials

D.T Skills Progression Map - Year One

Design	Make	Evaluate
• Draw pictures and use words to convey what they want to design/make. • Propose more than one idea for a product. • Use drawings to record ideas as they are developed. • Follow a design criteria. • Select appropriate technique by explaining: First… Next… Last. • Add labels to drawings to help explanations. • Describe their models and drawings of ideas and intentions.	• Select materials/ingredients from a limited range that will meet the design criteria. • Explain which materials/ingredients they are using and why. • Select, use and name the tools and equipment needed (e.g. cutting, shaping, joining and finishing). • Assemble, join and combine materials in order to make a product. • Discuss their work as it progresses. • Describe what they need to do next. • Follow procedures for safety and hygiene.	• Explore existing products and 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/bad points. • Discuss changes made during the making process. • Say what they like and do not like about items they have made and attempt to explain why. • Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.
Autumn – Structures	**Spring - Food**	**Summer – Mechanisms**
• Refer to materials, tools and techniques using appropriate vocabulary. • Explore how to make structures stronger. • Investigate different techniques for stiffening a variety of materials. • Test different methods of enabling structures to remain stable. • Make a structure more stable by widening the base. • Join appropriately for different materials and situations e.g. glue, tape. • Apply a range of finishing techniques e.g. painting and printing.	• Develop 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 and 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. cups, spoons.	• Start to use technical vocabulary when describing mechanisms, tools and materials. • Experiment with levers and sliders to find different ways to make things move in a 2D context. • Join appropriately for different materials and situations e.g. glue, tape. • Fold, tear and cut paper and card. • Cut along lines, straight and curved. • Construct a simple slider independently. • Make a lever by joining card strips with paper fasteners. • Join levers to make linkages to create moving parts.

D.T Skills Progression Map - Year Two

Design	Make	Evaluate
• Draw pictures and use words to convey what they want to design/make. • Propose more than one idea for a product. • Select appropriate technique by explaining: First… Next… Last. • Follow a design criteria. • Develop their design ideas through discussion, observation, drawing and modelling. • Explore ideas by rearranging materials/ingredients. • Use drawings to record ideas as they are developed. • Add notes/labels to drawings to help explanations. Describe their models and drawings of ideas and intentions.	• Select materials/ingredients from a limited range that will meet the design criteria. • Explain which materials/ingredients they are using and why. • Select, use and name the tools and equipment needed (e.g. cutting, shaping, joining and finishing). • Assemble, join and combine materials in order to make a product. • Discuss their work as it progresses. • Explain what they are making. • Describe what they need to do next. • Follow procedures for safety and hygiene.	• Explore existing products and how they have been made. • Decide how existing products do/ do not achieve their purpose. • Talk about their design as they develop and identify positive and negative 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 explain why. • Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.
Autumn – Food	**Spring – Textiles**	**Summer – Mechanisms**
• Further develop food vocabulary using their senses. • Sort and classify foods into food groups e.g. vegetables, cereals, dairy etc. • Explain and understand where different foods come from. • Cut, peel, grate and chop a range of ingredients with accuracy • Work safely and hygienically. • Understand what a balanced diet means. • Measure and weigh food items using standard units and scales	• Start to use the appropriate vocabulary to refer to fabrics and tools. • Cut out shapes which have been created by drawing around the template of the fabric. • Join fabrics by using e.g. running stitch, glue, staples, tape. • Decorate fabrics with attached items e.g. buttons, sequins, beads, ribbons. • Colour fabrics using a range of techniques e.g. painting, printing.	• Start to use technical vocabulary when describing mechanisms. • Deconstruct a simple slider and describe how it works. • Construct increasingly complex sliders. • Join appropriately for different materials and situations e.g. glue, tape. • Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. • Attach wheels to a chassis using an axle. • Try out different axle fixings and evaluate their strengths weaknesses.

D.T Skills Progression Map - Year Three

Design	Make	Evaluate
• Use research to develop a design criteria that is fit for purpose. • Use discussion, annotated sketches and cross-sectional diagrams to generate, develop, model and communicate their ideas. • Develop more than one design or adaptation of an initial design. • Use prototypes to develop and share ideas. • Plan a sequence of actions to make a product. • Think ahead about the order of their work and decide upon tools and materials/ingredients before beginning the making process. • Consider aesthetic qualities of materials/ingredients chosen.	• Select from a range of tools for cutting, shaping, joining and finishing. • Measure, mark out, cut, score, shape and assemble components with accuracy. • Work safely and accurately with a range of different tools. • Select from techniques for different parts of the process. • Select from and use a wide range of materials according to their functional properties and aesthetic qualities. • Use appropriate finishing techniques. • Follow procedures for safety and hygiene.	• Investigate and begin to analyse a range of existing products. • Identify the strengths and weaknesses of their design ideas in relation to the purpose/user. • Discuss how well the finished product meets the design criteria of the user. • Consider and explain how the finished product could be improved. • Investigate and understand how key events and individuals in Design and Technology have helped to shape the world.
Autumn – Food	**Spring – Structures**	**Summer – Mechanisms**
• 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 with increasing independence. • Understand the different food groups and the importance of a healthy and varied diet. • Join and combine a range of ingredients. • Prepare and cook using a range of cooking techniques. • Measure and weigh food items using standard units and scales. • Explore seasonality of vegetables and fruit.	• Use the correct terminology for tools, materials and processes. • Make rectangular frames of different sizes using strip wood. • Use a range of materials to make simple joints. • Apply their understanding of how to strengthen, stiffen and reinforce complex structures.	• Develop vocabulary related to the project. • Use mechanical systems such as gears, pulleys, levers and linkages. • Deconstruct and reconstruct a range of sliders and levers. • Use lolly sticks/card to make sliders, levers and linkages. • Use linkages to make movement larger or more varied. • Identify the cam within a simple mechanism and explain how movement is changed.

D.T Skills Progression Map - Year Four

Design	Make	Evaluate
• Use research to develop a design criteria that is fit for purpose. • Disassemble products and describe in detail their function. • Use discussion, annotated sketches, cross-sectional and exploded diagrams to generate, develop, model and communicate their ideas. • Develop more than one design or adaptation of an initial design. • To use prototypes to develop and share ideas • Plan a sequence of actions to make a product. • Think ahead about the order of their work and decide upon tools and materials/ingredients before beginning the making process. • Propose realistic suggestions as to how they can achieve their design ideas. • Consider aesthetic qualities of materials/ingredients chosen.	• Use a range of appropriate tools and equipment to measure, mark out, cut, score, shape, join, assemble and finish components with accuracy. • Work safely and accurately with a range of different tools. • Select from techniques for different parts of the process. • Select from and use a wide range of materials according to their functional properties and aesthetic qualities. • Join and combine materials and components in permanent and temporary ways. • Use appropriate finishing techniques. • Produce a well-finished product that fulfils the functional and aesthetic design criteria. • Follow procedures for safety and hygiene.	• Investigate and analyse a range of existing products. • Identify the strengths and weaknesses of their design ideas in relation to the purpose/user. • Discuss how well the finished product meets the design criteria of the user. • Consider and explain how the finished product could be improved. • Investigate and understand how key events and individuals in Design and Technology have helped to shape the world.
Autumn – Textiles	**Spring – Mechanisms**	**Summer – Food**
• Use correct vocabulary appropriate to the project. • Join fabrics using running stich, over-sewing, blanket stitch. • Prototype a product using old materials. • Use prototype to make a 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 a range of sliders and levers to produce a horizontal and vertical movements. • Combine sliders and levers to produce a range of movements. • Use linkages to make movement larger or more varied. • Use mechanical systems such as gears, pulleys, levers and linkages.	• Continue to develop sensory vocabulary/knowledge using smell, taste, texture and feel. • Understand seasonality, know where and how a variety of ingredients are grown, reared, caught and processed. • Follow instructions/recipes. • Prepare and cook using a range of cooking techniques. • Discuss the impact of changing proportions within a recipe and use knowledge of food and cooking to generate recipes • Talk scientifically about the physical and chemical changes that take place when food is cooked.

D.T Skills Progression Map - Year Five

Design	Make	Evaluate
• Generate plans and designs based on research and ideas that take account of the users' views and the intended purpose. • Link discussions about ideas, plans and designs to the investigation, disassembly and evaluation of a range of products, describing in detail their parts and their function. • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Produce detailed and annotated designs that include accurate measurements. • Devise step by step plans, which include the appropriate materials, tools and techniques they intend to use. • Sketch alternative ideas before deciding which design idea to develop.	• Use and increasing range of appropriate tools to measure, mark out, cut, score, shape, join, assemble and finish components with accuracy. • Join and combine a range of materials and components using the most effective permanent or temporary way. • Identify and apply an appropriate finishing technique to ensure that a high-quality end product meets the design criteria. • Refine their product- review and rework. • Follow procedures for safety and hygiene.	• Use analysis of existing products and accurate factual information from book and web-based research to inform their own work. • Test, evaluate and refine ideas and products against a specification, taking into account the views of the intended user and the products purpose. • Consider and explain how the finished product could be improved related to their design criteria. • Identify strengths and weaknesses of design ideas. • Use the correct technical vocabulary to evaluate their product. • Investigate and understand developments in design technology, it's impact on individuals, society and the environment.
Autumn – Food	**Spring – Structures**	**Summer – Textiles**
• Prepare mostly savoury dishes using their own selection of ingredients, taking into account their nutritional properties and sensory characteristics. • Weigh and measure using scales. • Select and prepare foods for a particular purpose. • Work safely and hygienically. • Develop and understanding of a healthy diet and apply in their ingredient choices. • Use a range of cooking techniques. • Join and combine a widening range of ingredients. • Understand seasonality, know where and how a variety of ingredients are grown, reared, caught and processed.	• Use the correct terminology for tools, materials and processes. • Create nets of increasingly complex 3D shapes which include addition of gluing tabs • Reinforce and strengthen 3D framework using the concept of 'triangulation'. • Build a range of structures using a wide range of effective materials. • Explain in detail why some structures fail. • Use a range of materials to make joints e.g. card strips, elastic bands, thread and ties, and plastic tubing.	• Use correct vocabulary appropriate to the project. • Create 3D products using pattern pieces • Prototype a product using old materials • Use prototype to make a pattern. • Understand pattern layout. • Pin and tack fabric pieces together. • Use a wide range of techniques to add colour, texture and pattern to fabric. • Join fabrics using over-sewing, back stitch or blanket stitch. • Sew on buttons and make loops • Make quality products.

D.T Skills Progression Map - Year Six

Design	Make	Evaluate
• Generate plans and designs based on research and ideas that take account of the users' views and the intended purpose. • Link discussions about ideas, plans and designs to the investigation, disassembly and evaluation of a range of products, describing in detail their parts and their function. • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Produce detailed and annotated designs and plans from a range of viewpoints that include accurate measurements. • Devise step by step plans, which could be followed by someone else to make their product, choosing appropriate materials, tools and techniques, • Sketch and model alternative ideas before deciding which design idea to develop.	• Use and increasing range of appropriate tools to measure, mark out, cut, score, shape, join, assemble and finish components with accuracy and precision. • Join and combine a range of materials and components using the most effective permanent or temporary way. • Make and adapt prototypes, mock ups and templates where necessary. • Identify and apply an appropriate finishing technique to ensure that a high-quality end product meets the design criteria. • Refine their product- review and rework. • Produce costings using spreadsheets for products they design and make. • Follow procedures for safety and hygiene and understand the process of a risk assessment.	• Use analysis of existing products and accurate factual information from book and web-based research to inform their own work. • Test, evaluate and refine ideas and products against a specification, taking into account the views of the intended user and the products purpose. • Test their finished product on a user and discuss how well their product meets the needs of the user. • Consider and explain how the finished product could be improved related to their design criteria. • Identify strengths and weaknesses of design ideas. • Give an evaluation report using the correct technical vocabulary. • Investigate and understand developments in design technology, it's impact on individuals, society and the environment.
Autumn – Textiles	**Spring – Electrical systems**	**Summer – Mechanisms**
• Develop vocabulary for tools, materials and their properties. • Select the appropriate materials to create a product. • Join fabrics using running stitch, over-sewing, blanket stitch. • Prototype a product using old materials. • Use the prototype to create increasingly complex patterns and templates with more than one part that are accurately measured. • Explore strengthening and stiffening of fabrics. • Explore fastenings (inventors) and recreate some. • Sew on buttons and make loops. • Identify the most effective finishing technique in order to maximise the aesthetic value of the product.	• Develop technical vocabulary appropriate to the project. • Explore and describe how switches can be used in a range of circuits to control components. E.g. lights in a lighthouse, a movement sensor in a burglar alarm. • Explore and use an increasing range of complex control systems e.g. a light, sensor etc. • Use and control electrical systems such as motors, buzzers and bulbs. • Program, monitor and control their products using ICT.	• Use a range of technical vocabulary to describe the properties and functions of mechanisms. • Use mechanical systems such as levers, cams, pulleys and gears. • Choose and use sliders and levers accurately to create a range of movements and effects. • Discuss the relationship between a cam and follower, an off-centre cam, a peg cam, a pear-shaped cam and a snail cam.