Design Technology Progression Map

Intent- At Carr Head, our aim is to provide a design technology curriculum which inspires, engages and challenges pupils in all aspects of design technology and allows them to use a wide range of resources confidently. We want children to thrive in all areas of design technology, using their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

Year 1	**Aspect:** Food **Focus:** Making bread **Objectives:** • Develop a food vocabulary using taste, smell, texture and feel. • Work safely and hygienically. **Outcome:** children will taste different breads and choose as aspect they want in their bread.	**Aspect:** Textiles **Focus:** Making stockings **Objectives:** • 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. **Outcome:** children will choose from a range of materials such as felt and fabric to design a stocking to hang.	**Aspect:** Mechanisms **Focus:** Moving robots **Objectives:** • Join appropriately for different materials and situations e.g. glue, tape. • Try out different axle fixings and their strengths and weaknesses. • Roll paper to create tubes. • 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. **Outcome:** children will look at different designs or robots and create their own robot.
Design	• Select appropriate technique explaining: First… Next… Last….	• Use pictures and words to convey what they want to design/make. • Propose more than one idea for their product. • 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	• Use pictures and words to convey what they want to design/make. • Propose more than one idea for their product. • Select appropriate technique explaining: First… Next… Last…. • Explore ideas by rearranging materials. • 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.
Make	• Discuss their work as it progresses • Explain what they are making. • Describe what they need to do next.	• 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.	• Discuss their work as it progresses. • Select materials from a limited range that will meet the design criteria. • Explain what they are making.

		• 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.	• Explain which materials they are using and why. • Describe what they need to do next.
Evaluate	• Say what they like and do not like about items they have made and attempt to say why.	• 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.	• 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.
Year 2	**Aspect:** Food **Focus:** Making a fruit kebab **Objectives:** ▪ 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. **Outcome:** children will select a fruit combination and cut and make a fruit kebab.	**Aspect:** Mechanisms **Focus:** Making a vehicle **Objectives:** ▪ 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. ▪ Cut dowel using hacksaw and bench hook. ▪ Attach wheels to a chassis using an axle. ▪ Mark out materials to be cut using a template. **Outcome:** children will selection tools and materials for a purpose and make a moving vehicle.	**Aspect:** structures **Focus:** explore how to make a structure **Objectives:** ▪ 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. **Outcome:** children will look at the structure of Blackpool tower and select materials to construct a tower of their own.
Design	▪ Use pictures and words to convey what they want to design/make. ▪ Propose more than one idea for their product.	▪ Use pictures and words to convey what they want to design/make. ▪ Propose more than one idea for their product.	▪ Use pictures and words to convey what they want to design/make. ▪ Propose more than one idea for their product. ▪ Select appropriate technique explaining: First… Next… Last…. ▪ Explore ideas by rearranging materials.

	▪ Select appropriate technique explaining: First… Next… Last…. ▪ Use drawings to record ideas as they are developed.	▪ Use kits/reclaimed materials to develop more than one idea. ▪ 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.	▪ 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.
Make	▪ Discuss their work as it progresses. ▪ Select materials from a limited range that will meet the design criteria. ▪ 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.	▪ 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.	▪ 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.
Evaluate	▪ 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.	▪ 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.	▪ 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.
Year 3	**Aspect:** Food **Focus:** healthy eating **Objectives:**	**Aspect:** Mechanisms **Focus:** Levers **Objectives:** ▪ Develop vocabulary related to the project.	**Aspect:** Textiles **Focus:** Roman Clothing **Objectives:** ▪ Develop vocabulary for tools materials and their properties.

	▪ 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. ▪ Find out which fruit and vegetables are grown in countries/continents studied in Geography. **Outcome:** children will link their science knowledge of healthy eating to make a healthy food item.	▪ Use mechanical systems such as gears, pulleys, levers and linkages. ▪ Use lolly sticks/card to make levers and linkages. Use linkages to make movement larger or more varied. **Outcome:** children will make a pop-up book using a lever which is linked to English unit.	▪ 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. **Outcome:** children make an item of clothing that would have been worn in Roman times.
Design	▪ Develop more than one design or adaptation of an initial design. ▪ Begin to use cross-sectional and exploded diagrams. ▪ Use prototypes to develop and share ideas. ▪ Propose realistic suggestions as to how they can achieve their design ideas.	▪ 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. ▪ 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.	▪ 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.
Make	▪ Use tools with accuracy. ▪ Select from materials according to their functional properties. ▪ Plan the stages of the making process.	▪ 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.	▪ Prepare pattern pieces as templates for their design. ▪ Cut internal shapes. ▪ Select from a range of tools for cutting shaping joining and finishing. ▪ 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.

Evaluate	▪ 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 similar products to the one to be made to give starting points for a design. ▪ 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 similar products to the one to be made to give starting points for a design. ▪ 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.
Year 4	**Aspect:** Electrical **Focus:** Working circuit **Objectives:** ▪ Develop vocabulary related to the project. ▪ Incorporate a circuit into a model. ▪ Use electrical systems such as switches bulbs and buzzers. ▪ Use ICT to control products. **Outcome:** children will make a Christmas decoration with a working circuit.	**Aspect:** Food **Focus:** design and make healthy snack **Objectives:** ▪ 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. ▪ Find out which fruit and vegetables are grown in countries/continents studied in Geography. **Outcome:** children will design and make healthy snack	**Aspect:** Structures **Focus:** Viking long boat **Objectives:** ▪ 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. **Outcome:** children will make a 3D structure of a Viking long boat.
Design	▪ 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.	▪ Develop more than one design or adaptation of an initial design. ▪ Plan a sequence of actions to make a product. ▪ Propose realistic suggestions as to how they can achieve their design ideas.	▪ 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. ▪ 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.

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Make	▪ 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.	▪ Use tools with accuracy. ▪ Plan the stages of the making process. ▪ Use appropriate finishing techniques.	▪ 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.
Evaluate	▪ Investigate similar products to the one to be made to give starting points for a design. ▪ 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 similar products to the one to be made to give starting points for a design. ▪ 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 similar products to the one to be made to give starting points for a design. ▪ 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.
Year 5	**Aspect:** Structures **Focus:** Look and design a structure from UK **Objectives:** ▪ Use the correct terminology for tools materials and processes. ▪ Use hand drill to drill tight and loose fit holes. ▪ Join materials using appropriate methods. ▪ Stiffen and reinforce complex structures.	**Aspect:** Food **Focus:** Making French food ▪ **Objectives:** ▪ Prepare food products considering 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.	**Aspect:** Mechanisms **Focus:** Making a rocket using a pulley **Objectives:** ▪ Develop a technical vocabulary appropriate to the project. ▪ Use mechanical systems such as cams, pulleys and gears. ▪ Use electrical systems such as motors.

	Outcome: children will pick a UK structure to look at and create their own structure.	▪ Consider influence of chefs e.g. Jamie Oliver and school meals, Hugh Fearnley-Whittingstall and sustainable fishing etc. **Outcome:** children will develop a French menu and make the food.	**Outcome:** children will make a rocket using a pulley.
Design	▪ List tools needed before starting the activity. ▪ Plan the sequence of work e.g. using a storyboard. ▪ Record ideas using annotated diagrams. ▪ 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.	▪ Devise step by step plans which can be read / followed by someone else. ▪ Decide which design idea to develop.	▪ 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	▪ 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 materials. ▪ Use appropriate finishing techniques for the project. ▪ Refine their product – review and rework/improve.	▪ Develop one idea in depth. ▪ Produce detailed lists of ingredients / components / materials and tools. ▪ Refine their product – review and rework/improve.	▪ 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.
Evaluate	▪ 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.	▪ Identify the strengths and weaknesses of their design ideas. ▪ Give a report using correct technical vocabulary.	▪ 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!
Year 6	**Aspect:** structures **Focus:** Making an air raid shelter **Objectives:** ▪ 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. **Outcome:** children will design and make an air raid shelter.	**Aspect:** Mechanisms **Focus:** CAM's linked to Tudors **Objectives:** ▪ Develop a technical vocabulary appropriate to the project. ▪ Use mechanical systems such as cams, pulleys and gears. ▪ Program, monitor and control using ICT. **Outcome:** children will design and make a CAM linked to Tudors.	**Aspect:** Textiles **Focus:** making a 3D banner **Objectives:** ▪ 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. **Outcome:** children will design and make a 3D banner for Year 6 leavers assembly.
Design	▪ 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.	▪ 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.	▪ List tools needed before starting the activity. ▪ Devise step by step plans which can be read / followed by someone else. ▪ Sketch and model alternative ideas. ▪ Decide which design idea to develop.
Make	▪ Make prototypes. ▪ Develop one idea in depth. ▪ Use researched information to inform decisions. ▪ Produce detailed lists of ingredients / components / materials and tools.	▪ Produce detailed lists of ingredients / components / materials and tools. ▪ 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 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.

	▪ 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.	▪ Use appropriate finishing techniques for the project. ▪ Refine their product – review and rework/improve.	▪ 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	▪ 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!	▪ 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!	▪ Consider user and purpose. ▪ Identify the strengths and weaknesses of their design ideas. ▪ 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!