Coates Way School – D&T Progression Map

At Coates Way School our Design and Technology curriculum provides pupils with the opportunity to use a range of tools and materials and explore three main concepts: design, make and evaluate. Our aim is for the children to develop skills which they will use throughout their lives. During the design stage, the children will begin to develop their technical language, explore existing products and their designers, as well as consider the views of a target audience.

Children will then construct their designs using a range of different materials and tools. They will identify materials which work well together and complete their products using a range of finishing techniques, recognising how to make 3D structures more stable. Designs will become more complex through the inclusion of electrical and mechanical aspects.

The purpose of the evaluation stage is to provide children with an opportunity to evaluate their final product against their original design. Children will begin to develop the confidence to identify changes they could make through critical evaluation, as well as considering the views of others.

In EYFS, Design and Technology is taught throughout the year based on the children's interests. Children will be taught to use the 'design, make, evaluate' when junk modelling and will be taught to look at and use existing ideas in their design process.

Context - Term	**EYFS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**

C O	**Soup** Pupils who are secure will be able to: To explore fruits and vegetable a and the differences between them. To explore a pumpkin and describe using senses. To design a fruit and vegetable soup recipe. To learn how to use a knife safely. To safely use tools to prepare ingredients. To design food packaging. **Key Vocabulary:** Fruit Vegetables Safety Knife Blade Tool Edge Handle Chop	**Fruits and Vegetables** Pupils who are **secure** will be able to: Describe fruits and vegetables and explain why they are a fruit or a vegetable. Name a range of places that fruits and vegetables grow. Describe basic characteristics of fruit and vegetables. Prepare fruits and vegetables to make a smoothie. **Key Vocabulary:** fruit vegetable seed leaf root stem smoothie healthy carton design flavour peel	**A Balanced Diet** Pupils who are **secure** will be able to: Name the main food groups and identify foods that belong to each group. Describe the taste, texture and smell of a given food. Think of four different wrap ideas, considering flavour combinations. Construct a wrap that meets the design brief and their plan. **Key Vocabulary:** balanced diet balance carbohydrate dairy fruit ingredients oils sugar protein vegetable design criteria	**Eating Seasonally** Pupils who are **secure** will be able to: Explain that fruits and vegetables grow in different countries based on their climates. Understand that 'seasonal' fruits and vegetables are those that grow in a given season and taste best then. Know that eating seasonal fruit and vegetables has a positive effect on the environment. Design their own tart recipe using seasonal ingredients. Understand the basic rules of food hygiene and safety.	**Adapting a recipe** Pupils who are **secure** will be able to: Follow a recipe, with some support. Describe some of the features of a biscuit based on taste, smell, texture and appearance. Adapt a recipe by adding extra ingredients to it. Plan a biscuit recipe within a budget. **Key Vocabulary:** Adapt Budget Cooling rack Creaming Equipment Evaluation Flavour Ingredients Method Net Packaging Prototype Quantity	**What could be healthier** Pupils who are secure will be able to: Understand how beef gets from the farm to our plates. Present a subject as a poster with clear information in an easy to read format. Contribute ideas as to what a 'healthy meal' means. Notice the nutritional differences between different products and recipes. Work as a team to amend a bolognese recipe with healthy adaptations. Follow a recipe to produce a healthy bolognese sauce.	**Come dine with me** Pupils who are **secure** will be able to: Find a suitable recipe for their course. Record the relevant ingredients and equipment needed. Follow a recipe, including using the correct quantities of each ingredient. Write a recipe, explaining the process taken. Explain where certain key foods come from before they appear on the supermarket shelf. **Key Vocabulary:** Accompaniment Collaboration Cookbook Cross-contamination Equipment Farm

	Slice Cut Saucepan Blender Chopping board Hob Boil Blend Mix Packaging Recyclable Metal Plastic Reusable	slice		Follow the instructions within a recipe. **Key Vocabulary:** Dry climate Exported Imported Mediterranean climate Nationality Nutrients Polar climate Recipe Seasonal food	Recipe Rubbing Sieving	Design packaging that promotes the ingredients of the bolognese. **Key Vocabulary:** Cross-contamination Diet Ethical issues Farm Healthy Ingredients Method Nutrients Packaging Reared Recipe Research Substitute	Flavour Illustration Imperative-verb Ingredients Method Nationality Preparation Processed Reared Recipe Research Storyboard Target audience

S T	**Junk Modelling** To explore and investigate the tools and materials in the junk modelling area. To investigate cutting different materials. Learn how to plan and select correct resources needed to make a model. Verbally plan and create a junk model. Share a finished model and talk about the process. Explore different ways to temporarily join materials. **Key Vocabulary:** Join Stick Cut Bend Slot Scissors Measure Materials Fix		**Baby Bears Chair** Pupils who are **secure** will be able to: Identify man-made and natural structures. Identify stable and unstable structural shapes. Contribute to discussions. Identify features that make a chair stable. Work independently to make a stable structure, following a demonstration. Explain how their ideas would be suitable for Baby Bear. Produce a model that supports a teddy, using the appropriate materials and	**Constructing a Castle** Pupils who are **secure** will be able to: Draw and label a simple castle that includes the most common features. Recognise that a castle is made up of multiple 3D shapes. Design a castle with key features which satisfy a given purpose. Score or cut along lines on the net of a 2D shape. Use glue to securely assemble geometr ic shapes. Utilise skills to build a complex structure from simple geometric shapes.		**Bridges** Pupils who are **secure** will be able to: Identify stronger and weaker shapes. Recognise that supporting shapes can help increase the strength of a bridge, allowing it to hold more weight. Identify beam, arch and truss bridges and describe their differences. Use triangles to create simple truss bridges that support a load (weight). Cut beams to the correct size, using a cutting mat. Smooth down any rough cut edges with sandpaper. Follow each stage of the truss bridge creation as	

			construction techniques. Explain how they made their model strong, stiff and stable. **Key Vocabulary:** Function Man-made Mould Natural Stable Stiff Strong Structure Test Weak	Evaluate their work by answering simple questions. **Key Vocabulary:** 2D shapes 3D shapes Castle Design criteria Evaluate Façade Feature Flag Net Recyclable Scoring Stable Strong Structure		instructed by their teacher. Complete a bridge, with varying ranges of accuracy and finish, supported by the teacher. Identify some areas for improvement, reinforcing their bridges as necessary. **Key Vocabulary:** Abutment Accurate Arched bridge Beam bridge Coping saw Evaluation File Mark out Material properties Measure Predict Reinforce Research Sandpaper Set square Suspension bridge Tenon saw	

D 1					**Mindful Moments:** Pupils who are **secure** will be able to: State and/or describe the advantages and disadvantages of existing products (timers). Understand how virtual micro:bit features could be used as part of a design idea. Use research to inform design criteria. Write a program that displays a timer on the virtual micro:bit based on their chosen seconds/minutes. Suggest where the errors are, if testing is unsuccessful, by comparing the correct code to their own. State key functions in the		**Monitoring Devices:** Pupils who are **secure** will be able to: Describe what is meant by monitoring devices and provide an example. Explain briefly the development of thermometers from thermoscopes to digital thermometers. Research a chosen animal's key information to develop a list of design criteria for an animal monitoring device. Write a program that monitors the ambient temperature and alerts someone when the temperature moves from a specified range.

					program editor (e.g. loops). Evaluate the immediate appeal of the virtual microbit timer and how it might function. Express which stages of the project they enjoyed or found more challenging. Explain the need for a company to stand out against competition and/or state the importance of logos in business. Recall and describe the name and use of key tools used in Sketchpad (CAD) software. Fulfil the design requirements of the logo. Evaluate the product using		Identify errors (bugs) in the code and ways to fix (debug) them. State one or two facts about the history and development of plastic, including how it is now affecting planet Earth. Build a variety of brick models to invent Micro:bit case, housing and stand ideas, evaluating the success of their favourite model. Explain key pros and cons of virtual modelling vs physical modelling. Recall and describe the name and use of key tools used in Tinkercad (CAD) software. **Key Vocabulary:** 3D CAD

					feedback from the user. **Key Vocabulary:** Advantage Annotate Assemble Aesthetic Block Design Develop Disadvantage Display Ergonomic Model Net Product Program Prototype Research Script		Application (apps) Biodegradable Boolean Concept Environmentally friendly Equipment Feature Investment Lightweight Loop Manufacture Materials Mouldable Navigation Non-recyclable Product lifecycle

T E	**Bookmarks** Pupils who are **secure** will be able to: Develop threading and weaving skills. Practise and apply weaving skills to specific materials. Practise weaving skills on hessian or wool. Design a product (bookmark) To create a textiles product following their own design. To reflect with the children on how they have achieved their aims. **Key Vocabulary:** Thread Weave Pattern Sew Sewing needle Embroider Design Evaluate	**Puppets** Pupils who are **secure** will be able to: Join fabrics together using pins, staples or glue. Design a puppet and use a template. Join their two puppets' faces together as one. Decorate a puppet to match their design **Key Vocabulary:** Decorate Design Fabric Glue Model Hand puppet Safety pin Staple Stencil Template	**Pouches** Pupils who are **secure** will be able to: Sew a running stitch with regular-sized stitches and understand that both ends must be knotted. Prepare and cut fabric to make a pouch from a template. Use a running stitch to join the two pieces of fabric together. Decorate their pouch using the materials provided. **Key Vocabulary:** Accurate Fabric Knot Pouch Running-stitch Sew Shape Stencil Template Thimble		**Fastenings** Pupils who are **secure** will be able to: Identify the features, benefits and disadvantages of a range of fastening types. Write design criteria and design a sleeve that satisfies the criteria. Make a template for their book sleeve. Assemble their case using any stitch they are comfortable with. **Key Vocabulary:** Aesthetic Assemble Book sleeve Design criteria Evaluation Fabric Fastening Mock-up Net Running-stitch Stencil		**Waistcoats** Pupils who are **secure** will be able to: Consider a range of factors in their design criteria and use this to create a waistcoat design. Use a template to mark and cut out a design. Use a running stitch to join fabric to make a functional waistcoat. Attach a secure fastening, as well as decorative objects. Evaluate their final product. **Key Vocabulary:** Accurate Adapt Annotate Design Design criteria Detail Fabric Fastening

					Target audience Target customer Template		Knot Properties Running-stitch Seam Sew Shape Target audience Target customers Template Thread Unique Waistcoat Waterproof

ME C		**Wheels and Axels** Pupils who are **secure** will be able to: Consider a range of factors in their design criteria and use this to create a waistcoat design. Use a template to mark and cut out a design. Use a running stitch to join fabric to make a functional waistcoat. Attach a secure fastening, as well as decorative objects. Evaluate their final product. **Key Vocabulary:** Axle Axle holder Chassis Design Evaluation Fix Mechanic		**Pneumatic Toys** Pupils who are **secure** will be able to: Draw accurate diagrams with correct labels, arrows and explanations. Correctly identify definitions for key terms. Identify five appropriate design criteria. Communicate two ideas using thumbnail sketches. Communicate and develop one idea using an exploded diagram. Select appropriate equipment and materials to build a working pneumatic system. Assemble their pneumatic system within the housing		**Pop-Up Books** Pupils who are **secure** will be able to: Produce a suitable plan for each page of their book. Produce the structure of the book. Assemble the components necessary for all their structures/mechanisms. Hide the mechanical elements with more layers using spacers where needed. Use a range of mechanisms and structures to illustrate their story and make it interactive for the users. Use appropriate materials and captions to illustrate the story.	

		Mechanism Model Test Wheel		to create the desired motion. Create a finished pneumatic toy that fulfills the design brief. **Key Vocabulary:** Exploded-diagram Function Input Lever Linkage Mechanism Motion Net Output Pivot Pneumatic system Thumbnail sketch		**Key Vocabulary:** Aesthetic Computer-aided design (CAD) Caption Design Design brief Design criteria Exploded-diagram Function Input Linkage Mechanism Motion Output Pivot Prototype Slider Structure Template	