

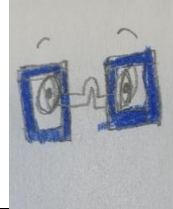
Design & Technology Curriculum

Upton Cross Academy



‘Inspiring and achieving success for all!’

Characteristics of Learning

								
Be curious	Be resilient	Be critical	Be independent	Be ready	Be focused	Be proud	Be resourceful	Be creative

EYFS

EYFS Expressive Arts and Design – Creating with Materials Understanding the world Physical development - Fine Motor skills 3 and 4 year olds: Explore how things work. Make imaginative and complex ‘small worlds’ with blocks and construction kits. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and decide which materials to use express them. Join different materials and explore different textures. Use one handed tools and equipment.	Reception: Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively sharing ideas, resources and skills. Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	ELG: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used. Use a range of small tools, including scissors, paintbrushes and cutlery.
Skills Progression: Pupils are provided with mechanical equipment for children to play with and investigate. Eg wind-up toys, pulleys, cogs etc. Pupils are provided with flexible and open-ended resources for children’s imaginative play and problem-solving skills. Pupils will be encouraged to communicate their ideas and select materials that they feel are suitable and meet their needs. A wide range of high-quality resources will be available for pupils to construct from. These will vary and change throughout the year. Eg child sized boxes, wall paper, ropes, straws, bamboo canes etc. Pupils will have the opportunity to discuss problems and how they might be solved as they arise. Pupils will be encouraged to reflect on how they have achieved their aims and what they can do to improve their work next time. Craftspeople will be invited in or studied, to widen the range of ideas which pupils can draw on and aspire to. Pupils will be taught different techniques for joining materials such as how to use adhesive tape and different sorts of glue. Different materials will always be provided such as glue, masking tape, glue guns, paper clips and Velcro etc. The class has a woodwork bench where pupils can use hammers, nails and saws to create models with care and precision. Pupils will be encouraged to be independent and take supported risks.		

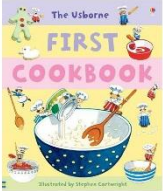
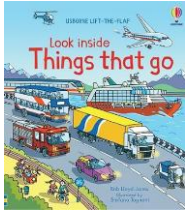
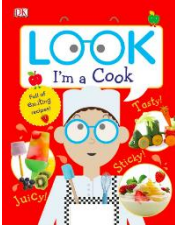
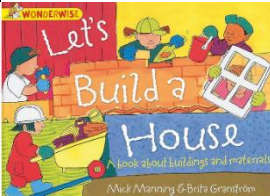
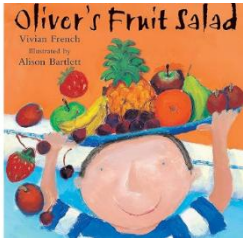
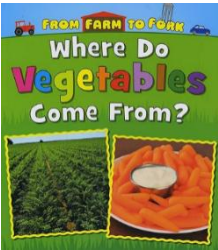
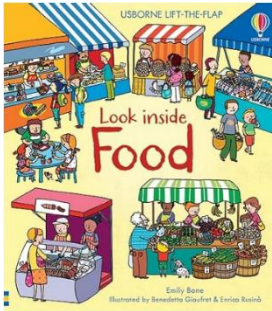
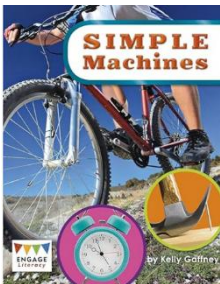
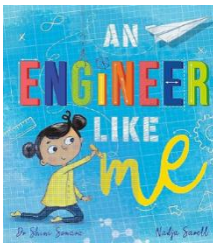
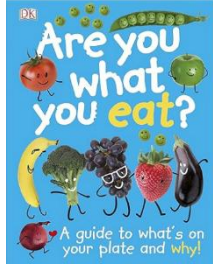
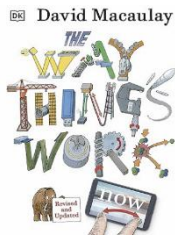
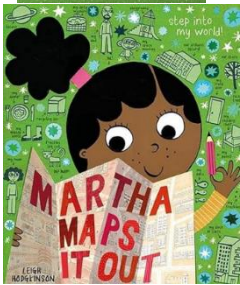
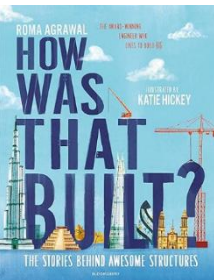
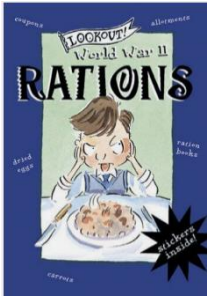
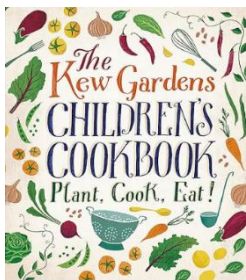
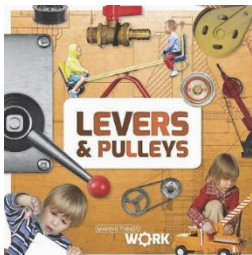
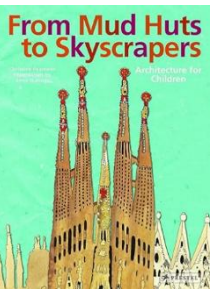
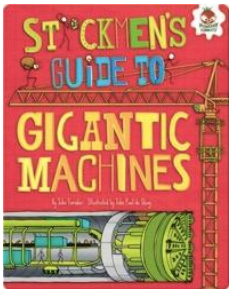
Key Stage 1 National Curriculum Expectations

Design Pupils should be taught to: - design purposeful, functional, appealing products for themselves and other users based on design criteria - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	Make Pupils should be taught to: - select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] - select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Evaluate Pupils should be taught to: - explore and evaluate a range of existing products - evaluate their ideas and products against design criteria.	Technical knowledge Pupils should be taught to: - build structures, exploring how they can be made stronger, stiffer and more stable - explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Cooking and Nutrition Pupils should be taught to: - use the basic principles of a healthy and varied diet to prepare dishes - understand where food comes from.			

Key Stage 2 National Curriculum Expectations

Design Pupils should be taught to: - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	Make Pupils should be taught to: - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately - select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	Evaluate Pupils should be taught to: - investigate and analyse a range of existing products - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work - understand how key events and individuals in design and technology have helped shape the world.	Technical knowledge Pupils should be taught to: - apply their understanding of how to strengthen, stiffen and reinforce more complex structures - understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] - apply their understanding of computing to program, monitor and control their products.
Cooking and Nutrition Pupils should be taught to: - understand and apply the principles of a healthy and varied diet - prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques - understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.			

2 Year Rolling Programme							
	EYFS	KS1		LKS2		UKS2	
		Year A	Year B	Year A	Year B	Year A	Year B
Autumn Term	Cooking and nutrition- <i>Can I design and make a fruit kebab? Can I make bread rolls? Can I design and make a Christmas cookie?</i>	Mechanisms <i>Can I design, make and evaluate my own weather station using sliders?</i>	Mechanisms <i>(wheels and axels)</i> <i>Can I design, make and evaluate a moving vehicle?</i>	Cooking and Nutrition <i>Can I design, make and evaluate a Christmas cake?</i>	Computing and Programming <i>Can I program, monitor and control a bee-bot around a map of Upton Cross?</i>	Cooking and Nutrition <i>Can I design, make and evaluate a WW2 rationing recipe?</i>	Electrical systems <i>Can I design, make and evaluate a steady hand game?</i>
Spring Term	Mechanisms <i>Junk modelling: Can I design, make and evaluate a moving animal?</i>	Cooking and Nutrition <i>Can I design, make and evaluate smoothies using fruit and vegetables?</i>	Cooking and Nutrition <i>Can I design, make and taste your own version Cornish pasty?</i>	Electrical <i>Can I design, make and evaluate a torch?</i>	Textiles <i>Can I design, make and evaluate a book sleeve using fastenings?</i>	Computing and Programming <i>Can I program a navigation tool?</i>	Computing and Programming <i>Can I write a programme to monitor the ambient temperature including an alert?</i>
Summer Term	Structures- <i>Can I design, make and evaluate a type of transport?</i>	Structure <i>Can I design, make and evaluate my own holiday cottage?</i>	Textiles <i>Can I design, make and evaluate and puppet?</i>	Mechanisms <i>Can I build a pneumatic toy?</i>	Structure <i>Can I design, make and evaluate my own colosseum?</i>	Structure <i>Can I design, make and evaluate a bridge?</i>	Textiles <i>Can I design, make and evaluate a waistcoat?</i>

Suggested Books for our DT units							
Stara Class	Henwood Class		Plusha Class		Caradon Class		
EYFS	Y1	Y2	Y3	Y4	Y5	Y6	
  	  	  	 	  	 	 	 

DT Curriculum Plan – Cycle A									
	Henwood Class			Plusha Class			Caradon Class		
	Y1		Y2	Y3		Y4	Y5		Y6
	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
Intent and theme	Mechanisms Sliders and levers.	Cooking and Nutrition Fruit and vegetables.	Structure Design, make and evaluate a structure for a given audience.	Cooking and Nutrition Adapting a recipe.	Electrical Electrical systems and products	Mechanisms Pneumatic toy	Cooking and Nutrition Developing a recipe.	Computing and programming Navigation tool	Structure Bridge making
Prior knowledge	Using sliders on children’s toys and in books.	Can name some fruits. Can name some vegetables. Can chop food with a knife.	Can talk about the type of home they live in. Can name some materials that houses are made from.	Can say what a recipe is used for. Understand what ‘ingredients’ are. Can follow a simple recipe.	Can name some electrical products. Can talk about how lights/ torches are turned on.	Can talk about push/ pull effect. Know how to make a working wheel and axis.	Describe features of food using taste, texture and appearance. Follow a recipe with support. Use a budget to plan a recipe. Adapt a recipe using additional ingredients.	Can carry out research to develop design criteria. Can programme, monitor and control programmable toys such as beebots.	Can make a stable rectangular structure. Can evaluate the final model against the design brief.
Composite	Can I design, make and evaluate my own weather station using sliders?	Can I design, make and evaluate smoothies using fruit and vegetables?	Can I design, make and evaluate my own holiday cottage?	Can I design, make and evaluate a Christmas cake?	Can I design, make and evaluate a torch?	Can I design, make and evaluate a pneumatic toy?	Can I design, make and evaluate a WW2 rationing recipe?	Can I program a navigation tool?	Can I design and make a bridge?
Components	1.What is a simple machine? 2.What is a slider? 3.How do sliders work? 4.What does a weather station measure? 5.How could a slider be used as part of a weather station?	1. Can I identify if a food is a fruit or a vegetable? 2.Can I identify where plants are grown and which parts we eat? 3. Can I taste and compare fruit and vegetables? 4. Can I make a fruit smoothie? Can I evaluate my smoothie against the design brief?	1.Can I design a cottage that links to the design brief? 2.Can I assembly a stable structure? 3.Can I assemble to components of my structure, eg. windows, doors, roof. 4.Can I test and evaluate my design and make any changes that are needed?	1.Can I follow a recipe to make a cake? 2.Can I test ingredients for a Christmas cake? 3.Can I create a final design? 4.Can I buy all the ingredients with the given budget? 5.Can I take part in the cake bake off?	1.Can I identify electrical products and explain why they are useful? 2.Can I analyse and evaluate electrical products? 3.Can I design a product to fit a set of specific user needs? 4.Can I make and evaluate a torch?	1.Can I understand how pneumatic systems work? 2. Can I design a toy that uses a pneumatic system? 3. Can I create a pneumatic system? 4. Can I test and finalise ideas against design criteria.	1.Can I talk about how ingredients are reared and processed? 2. Can I evaluate nutritional content? 3. Can I make adaptations to design a recipe? 4.Can I follow and make an adapted food recipe? Can I design a product label?	1. Can I explore tools and programmes that help people navigate the world 2. Can I program a navigation tool 3. Can I evaluate a product concept against design criteria. 4. Can I identify key industries that use 3D CAD modelling and why. 5. Can I present my product pitch.	1.Can I explore how to reinforce a beam (structure) to improve its strength? 2.Can I build a spaghetti truss bridge? 3.Can I build a wooden truss bridge? 4.Can I complete, reinforce and evaluate my truss bridge?
Assessment Checkpoints	Make a simple slider mechanism. Use a slider mechanism when making a weather station. Evaluate how well it worked.	- Describe fruits and vegetables and explain why they are a fruit or a vegetable. - Name a range of places that fruits and vegetables grow. 3. Describe basic characteristics of fruit and vegetables. 4. Prepare fruits and vegetables to make a smoothie. Talk about what went well. What you would change next time.	-Identify some features that would appeal to the client and create a suitable design. -Explain how their design appeals to the client. -Make stable rectangular structures out of card, tape and glue. Can add components (windows, doors, roof) Say what is good about their house and what they could do better (evaluate the model against the design brief).	Describe features of Christmas cake using taste, texture and appearance. Follow a recipe with support. Use a budget to plan a recipe. Adapt a recipe using additional ingredients.	Can identify electrical products. Can make a working light. Can create a functioning torch with a switch according to their design criteria.	Can talk about how pneumatic systems work. Can design a toy against a design spec. Can make a pneumatic system. Test against a design criteria.	Research a traditional recipe and make changes to it. Add nutritional value to a recipe by selecting ingredients. Prepare and cook a version of a WW2 rationing recipe.	Incorporate key information from a client’s design request such as ‘multifunctional’ and ‘compact’ in their design brief. Write a program that displays an arrow to indicate cardinal compass directions with an ‘On start’ loading screen. Identify errors (bugs) in the code and suggest ways to fix (debug) them. Self and peer evaluate a product concept against a list of design criteria with basic statements. Identify key industries that use 3D CAD modelling and why. Recall and describe the name and use of key tools used in Tinkercad (CAD) software. Combine more than one object to develop a finished 3D CAD model in Tinkercad.	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 sand paper. Follow each stage of the truss bridge creation as instructed by their teacher. Complete a bridge, with varying ranges of accuracy and finish, supported by the teacher. Identify some areas for improvement, reinforcing

								Complete a product pitch plan that includes key information.	their bridges as necessary.
Resources needed	- paper - card - scissors - hole punch - lollipop sticks	• Selection of fruits and vegetables • Large sugar paper or large plastic hoops • Paper plates • Post-it notes • Ready made smoothie • Cups • Orange juice • Butter knives • Peelers • Chopping boards • Blenders	☐ Empty packaging (if you choose not to use the templates) ☐ Scissors ☐ Thin card ☐ Glue sticks ☐ Tape (preferably masking tape) ☐ A5 stiff card ☐ Pipe cleaners ☐ Blu Tack / Plasticine	Different types of cake for taste-testing. ☐ Plates ☐ Basic cake recipe ingredients: butter, caster sugar, egg yolk, vanilla extract, plain flour. ☐ Additional ingredients: chocolate chips, sprinkles, spices, food colouring, food flavouring, chocolate chunk, dried fruits, cocoa powder, honey, oats (keep a note of the cost) ☐ Butter knives ☐ Bowls ☐ Wooden spoons ☐ Scales ☐ Baking trays ☐ Baking parchment ☐ Oven ☐ Computers with access to Excel (optional) ☐ Empty biscuit boxes (optional) ☐ A3 card	Circuit sets: battery packs, bulbs, wires with crocodile clips. Tin foil Cardboard	Balloons Straws Cardboard Boxes Paper Scissors Pipe cleaners Glue	Different types of cake for taste-testing. ☐ Plates ☐ Basic ingredients ☐ Additional ingredients as needed ☐ Butter knives ☐ Bowls ☐ Wooden spoons ☐ Scales ☐ Baking trays ☐ Baking parchment ☐ Oven ☐ Computers with access to Excel (optional) ☐ A3 card	Highlighters ☐ Laptops / desktop computers / tablets to access - BBC Micro: bit editor through an internet browser or app ☐ BBC Micro: bits with battery packs or MI power - cell boards and Micro: bit cables (optional) ☐ Computers or laptops with wired mice ☐ A3 card ☐ Flipchart stand (optional) ☐ Glue sticks ☐ Scissors ☐ Colouring pencils ☐ Felt tip pens ☐ Access to a printer	Single sheets of A4 card ☐ A weight, such as a toy car ☐ Piles of books/bricks/blocks about 10 cm high and 15cm apart ☐ Weights to test the strength of the bridge ☐ Glue ☐ Scissors ☐ Sticky tape or masking tape ☐ Paper straws / tubes ☐ Spaghetti ☐ Glue gun ☐ Class camera ☐ Square rod wood pieces ☐ Lolly sticks / matchsticks ☐ Saws (preferably tenon saw and bench hooks) ☐ Sandpaper ☐ Files (optional) ☐ PVA glue ☐ Jelutong or Balsa wood

	DT Curriculum Plan – Cycle B								
	Henwood Class			Plusha Class			Caradon Class		
	Y1		Y2	Y3		Y4	Y5		Y6
	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
Intent and theme	Mechanisms (wheels and axels)	Textiles (puppets)	Cooking and Nutrition (a balanced diet)	Computing and Programming	Textiles	Structure	Electrical systems	Computing and Programming	Textiles
Prior knowledge	Using toy cars. Can talk about push/ pull effect.	Can join paper together using different methods.	Can name some fruits. Can name some vegetables. Can chop food with a knife.	Can programme beebots with simple instructions (forwards, backwards, left, right).	Can join different fabrics together using different methods.	Can make a stable rectangular structure using construction toys.	Can identify electrical products and explain why they are useful. Can make a working switch.	Can carry out research to develop design criteria. Can programme, monitor and control programmable toys such as beebots.	Can use different fastenings to join different fabrics together.
Composite	Can I design, make and evaluate a moving vehicle?	Can I design, make and evaluate and puppet?	Can I design, make and taste your own version Cornish pasty?	Can I program, monitor and control a bee-bot around a map of Upton Cross?	Can I design, make and evaluate a book sleeve using fastenings?	Can I design, make and evaluate my own colosseum?	Can I design, make and evaluate a steady hand game?	Can I write a programme to monitor the ambient temperature including an alert?	Can I design, make and evaluate a waistcoat?
Components	1.Can I understand how wheels move? 2.Can I identify what stops wheels from moving? 3.Can I design a moving vehicle? 4.Can I build a moving vehicle?	1.Can I join different fabrics together using different methods? 2.Can I use a template to create my design? 3.Can I make and join my puppet? 4.Can I embellish my design using joining methods?	1.Can I identify what makes a balanced diet? 2. Can I taste test food combinations? 3.Can I design a healthy pasty? 4.Can I make a healthy pasty?	1. 2. 3. 4.	1.Evaluate fastenings. 2.Designing my book sleeve. 3.Paper mock up and preparing fabric. 4.Assembly of my book sleeve.	1.Exploring frame structure. 2.Designing a colosseum. 3.Colosseum frame. 4.Colosseum cladding.	1.Developing through play 2.Game plan 3.Base building 4.Electronics and assembly	1.Can I carry out research to develop design criteria? 2. Can I write a programme to monitor the ambient temperature including an alert? 3.Can I generate creative and unique micro:bit case, stand and/or housing ideas? 4.Can I learn about and practise 3D CAD skills?	1.Design a waistcoat. 2.Prepare fabric. 3.Assemble waistcoat. 4.Decorating waistcoat.
Assessment Checkpoints	-Explain that wheels move because they are attached to an axle. -Recognise that wheels and axles are used in everyday life, not just in cars. -Identify and explain vehicle design flaws using the correct vocabulary. -Design a vehicle that includes functioning wheels, axles and axle holders. -Make a moving vehicle with working wheels and axles. -Explain what must be changed if there are any operational issues.	-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.	-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 pasty ideas, considering flavour combinations. -Construct a pasty that meets the design brief and their plan.		-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.	-Produce a range of free-standing frame structures of different shapes and sizes. -Design a colosseum that is strong, stable and aesthetically pleasing. -Select appropriate materials and construction techniques to create a stable, free-standing frame structure. -Select appropriate materials and techniques to add cladding to their colosseum.	-Explain simply what is meant by ‘form’ (the shape of a product) and ‘function’ (how a product works). -State what they like or dislike about an existing children’s toy and why. -Learn about skills developed through play and apply this knowledge in a survey of one or more children’s toys. -Identify the components of a steady hand game. -Design a steady hand game of their own according to their design criteria, using four different perspective drawings. -Create a secure base for their game, with neat edges, that relates to their design. -Make and test a functioning circuit and assemble it within a case.	-Describe what is meant by monitoring devices and provide an example. -Briefly explain 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. -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	-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.

								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.	
Resources needed	Wheels ☐ Straws ☐ Paper ☐ Glue or masking tape ☐ Scissors ☐ Materials for making car body: cardboard tubes, cardboard boxes, yoghurt pots ☐ Materials for making car axle: straws, dowel (pre-cut to 20cm length) ☐ Materials for car wheels: wooden wheels, card discs, plastic cotton reels ☐ Laptops or tablets with access to Microsoft Office ☐ Decorations for car: tissue paper, glitter, googly eyes (optional)	Glove, mitten and hand puppet examples ☐ Fabric scraps ☐ Safety pins ☐ Staplers and staples ☐ Fabric glue (or PVA) ☐ Felt ☐ Fabric scissors (if available) ☐ Decorations (wool, buttons, ribbon etc.)	Food pieces for taste testing ☐ Cocktail sticks ☐ Ingredients for pasties ☐ Knives ☐ Tin foil ☐ Chopping boards	☐ Beebots ☐ Large road map of local area ☐ Blank Beebot maps for children to design ☐ ☐	Physical examples of fastenings (zips, velcro, buttons, press studs etc. - optional) ☐ A3 paper ☐ Fastenings for children to use, such as: press studs, buttons, tie, velcro ☐ Pins ☐ Fabric ☐ Scissors ☐ Thread ☐ Needles ☐ Fabric glue ☐ Decorative items, such as: fabric shapes, sequins, beads	Gumdrops or plasticine ☐ Toothpicks / cocktail sticks ☐ A4 stiff card ☐ Materials for making the frame: matchsticks, lolly sticks, toothpicks, straws, card, pipe cleaners, card triangles etc ☐ Glue guns ☐ Tape ☐ Craft materials for cladding: tracing paper, card, sweet wrappers, leaves, crepe paper, fabrics, newspaper, wool, string, etc.	Computer access or laptops ☐ Range of children’s toys ☐ Colouring pens / pencils ☐ Black fine liner OR marker ☐ Scissors ☐ Glue stick ☐ Set squares (extension) ☐ Electrical wires - preferably with crocodile clips ☐ Buzzers OR bulbs and bulb holders ☐ Battery packs ☐ AA batteries ☐ Tinned copper wire ☐ Wire cutters ☐ Pliers ☐ Switches ☐ Plasticine OR Blu-tac	Highlighters ☐ Laptops / desktop computers / tablets to access BBC Micro: bit editor through an internet browser or app ☐ BBC Micro: bits with battery packs or MI power cell boards and Micro: bit cables (optional) ☐ Computers or laptops with wired mice ☐ A3 card ☐ Flipchart stand (optional) ☐ Glue sticks ☐ Scissors ☐ Colouring pencils ☐ Felt tip pens ☐ Access to a printer	Cheap fabric ☐ Chalk ☐ Selection of threads and fabric ☐ Scissors ☐ Needles ☐ Pins ☐ Selection of buttons, beads etc

Design						
Stara Class	Henwood Class		Plusha Class		Caradon Class	
EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Use their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking	Children design purposeful, functional, appealing products for themselves and other users based on design criteria. They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. <u>Pupils can:</u> Begin to draw on their own experience to help generate ideas and research conducted on criteria. Start to suggest ideas and explain what they are going to do. Begin to understand the development of existing products: explain what they are for, how they work, what materials have been used. Understand how to identify a target group for what they intend to design and make based on a design criteria. Begin to develop their ideas through talk and simple drawings. Communicate with others about how they want to construct their product.	Children design purposeful, functional, appealing products for themselves and other users based on design criteria. They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. <u>Pupils can:</u> Start to generate ideas by drawing on their own and other people's experiences. Begin to develop their design ideas through discussion, observation, drawing and modelling. Identify a purpose for what they intend to design and make. Understand how to identify a target group for what they intend to design and make based on a design criteria. Develop their ideas through talk and drawings and label parts. Pupils begin to explain why they chose a certain material.	Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. <u>Pupils can:</u> With growing confidence, generate ideas for an item considering its purpose and the user. When planning, explain their choice of materials and components including function and aesthetics. Start to order the main stages of making a product. Put together a step by step plan which shows the order and what equipment and tools they need.	Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. <u>Pupils can:</u> Start to generate ideas, considering the purposes for which they are designing. When planning, explain their choice of materials and components including function and aesthetics considering the views of others to improve their work. Confidently make labelled drawings from different views showing specific features. Develop a clear plan on the process and how to use materials, equipment and suggesting alternative methods if the first attempt fails.	Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. <u>Pupils can:</u> Start to generate, develop, model and communicate their ideas through discussion, annotated sketches and diagrams. With growing confidence select appropriate materials, tools and techniques. Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Draw up a specification for their design-link with Mathematics and Science. Produce a detailed step-by step plan. Suggest some alternative plans and say what the good points and drawbacks are about each. With growing confidence, apply a range of finishing techniques, including those from art and design Explain how their product will appeal to the audience	Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. <u>Pupils can:</u> Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, and pattern. Confidently use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Use market research to inform plans. Suggest ideas about how their product could be sold and work within a given budget. Confidently draw up a specification for their design- link with Mathematics and Science. Suggest alternative methods of making if the first attempts fail. Plan the order of their work, choosing appropriate materials, Accurately apply a range of finishing techniques, including those from art and design. Identify the strengths and areas for development in their ideas and products

Make						
Stara Class	Henwood Class		Plusha Class		Caradon Class	
EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Develop their own ideas and then decide which materials to use to express them Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Use various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces Use tools for a purpose	Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. They select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. <u>Pupils can:</u> Begin to make their design using appropriate techniques. Begin to build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Identify and talk about products which use electricity to make them work With help, measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely. Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. Begin to use simple finishing techniques to improve the appearance of their product	Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. They select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. <u>Pupils can:</u> Begin to select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable Measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely. Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. With help, measure, cut and score with some accuracy. Start to assemble, join and combine materials in order to make a product. Begin to use simple finishing techniques to improve the appearance of their product. Start to choose and use appropriate finishing techniques based on their own ideas. Join fabric using a running stitch, glue and tape	Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. <u>Pupils can:</u> Select a wider range of tools and techniques for making their product. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Start to use simple electrical circuits and mechanical systems. Measure, mark out, cut, score and assemble components with more accuracy. Select the most appropriate too and techniques for the given task. Begin to make choices of materials both for its appearance and qualities. Begin to use some simple stitches	Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. <u>Pupils can:</u> Select and use a wider range of tools and techniques for making their product safely. Know how to measure, mark out, cut and shape a range of materials, using appropriate tools equipment and techniques. Begin to combine components and materials in different ways. Demonstrate how to measure, tape, pin, cut and join with accuracy. Use some finishing techniques to strengthen and improve the appearance of their product using a range of equipment. Use a range of different stitches to join fabric.	Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. <u>Pupils can:</u> Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Combine components and materials in different ways with accuracy. Know how more complex electrical circuits and components can be used to create functional products. Use a variety of finishing techniques to strengthen and improve the appearance of their product using a range of equipment. Demonstrate motivation/perseverance to refine and improve their products	Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. <u>Pupils can:</u> Confidently select appropriate tools, materials, components and techniques and use them with accuracy. Aim to make and to achieve a quality product Demonstrate when to make modifications as they go along. Know how to combine complex electrical circuits and components to create functional products. Make decisions and select the most appropriate mechanical system for a particular purpose. Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment. Demonstrate motivation/perseverance to refine and improve their products.

Evaluate						
Stara Class	Henwood Class		Plusha Class		Caradon Class	
EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Return to and build on their previous learning, refining ideas and developing their ability to represent them Share their creations, explaining the process they have used.	Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. <u>Pupils can:</u> Start to evaluate their product by discussing how well it works in relation to the purpose. When looking at existing products, explain what they like and dislike about the products and why. Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make next time.	Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. <u>Pupils can:</u> Evaluate their work against their design criteria. Look at a range of existing products explain what they like and dislike about products and why. Evaluate their products as they are developed, identifying what went well and possible changes they might make next time.	Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. <u>Pupils can:</u> Start to evaluate their product against their original design criteria. Begin to evaluate familiar products and consider the views of others to improve them. Suggest improvements to their final design.	Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. <u>Pupils can:</u> Evaluate their product throughout the process making some simple changes where necessary. Evaluate their products, thinking of both appearance and function. Evaluate their products carrying out simple tests. Identify improvements to their final design explaining why these would improve the final design	Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. <u>Pupils can:</u> Start to evaluate a product against the original design specification and by carrying out appropriate tests. Evaluate their work both during and at the end of the assignment and seek evaluation from others. Evaluate appearance and function against original criteria, suggesting improvements and refinements	Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. <u>Pupils can:</u> Evaluate their work continuously both during and at the end of the assignment and frequently seek evaluation from others. Evaluate their products, identifying strengths and areas for development, and carry out appropriate tests. Record their evaluations using drawings with labels – clearly identifying improvements and refinements

Technical Knowledge						
Stara Class	Henwood Class		Plusha Class		Caradon Class	
EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Join different materials and explore different textures. Use tools safely for their correct purpose Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Children build structures, exploring how they can be made stronger, stiffer and more stable. They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Pupils can: Begin to measure and join materials, with some support. Describe differences in materials. Suggest ways to make material/product stronger. Begin to use levers or slides. Measure, cut and join textiles to make a product, with some support. Choose suitable textiles	Children build structures, exploring how they can be made stronger, stiffer and more stable. They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Pupils can: Measure materials Describe some different characteristics of materials. Join materials in different ways. Use joining, rolling or folding to make it stronger. Use own ideas to try to make product stronger. Use levers or slides. Begin to understand how to use wheels and axles. Measure and join textiles together to make a product, and explain how I did it Carefully cut textiles to produce accurate pieces. Explain choices of textile Understand that a 3D textile structure can be made from two identical fabric shapes.	Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Pupils can: Use appropriate materials. Work accurately to make cuts and holes. Join materials. Begin to make strong structures. Select appropriate tools / techniques. Use simple lever and linkages to create movement. Join different textiles in different ways. Begin to understand that a simple fabric shape can be used to make a 3D textiles project. Use simple circuit in product. Begin to control a product.	Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Pupils can: Select most appropriate tools / techniques Explain alterations to product after checking. Use levers and linkages to create movement Use pneumatics to create movement. Think about user when choosing textiles. Know how to make a product stronger. Explain how to join things in a different way Understand that a simple fabric shape can be used to make a 3D textiles project. Use number of components in circuit Program a computer to control product.	Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Pupils can: Measure accurately enough to ensure precision. Ensure structure is strong and fit for purpose. Begin to reinforce and strengthen a 3D frame. Refine product after testing. Begin to use cams, pulleys or gears to create movement. Use own template to create a design. Use a range of ways to join things. Begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. Incorporate a switch into product. Confidently use number of components in circuit Begin to be able to program a computer to monitor changes in environment and control product	Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Pupils can: Incorporate hydraulics and pneumatics. Use cams, pulleys and gears to create movement. Make a prototype. Use a range of joining techniques. Understand that a single 3D textiles project can be made from a combination of fabric shapes. Use different types of circuit in product. Think of ways in which adding a circuit would improve product. Program a computer to monitor changes in environment and control product

Cooking and Nutrition						
Stara Class	Henwood Class		Plusha Class		Caradon Class	
EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Children know the importance for good health of a healthy diet	Children use the basic principles of a healthy and varied diet to prepare dishes. They understand where food comes from. Pupils can: Begin to understand that all food comes from plants or animals. Start to understand how to name and sort foods into the five groups. Know that everyone should eat at least five portions of fruit and vegetables every day. Know how to prepare simple dishes safely and hygienically, without using a heat source. Begin to use techniques such as cutting, peeling and grating. Measure and weigh food items using non-standard measures (e.g., spoons and cups)	Children use the basic principles of a healthy and varied diet to prepare dishes. They understand where food comes from. Pupils can: Understand that all food comes from plants or animals. Develop understanding of where different foods come from and also food from native to different countries. Understand how to name and sort foods into the five groups in Recognise the need for a variety of food in a diet. Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Demonstrate how to use techniques such as cutting, peeling and grating	Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Pupils can: Start to know that food is grown, reared and caught in the UK, Europe and the wider world. Know that a healthy diet is made up from a variety and balance of different food and drink. Begin to know that to be active and healthy, food and drink are needed to provide energy. Understand how to prepare and cook a variety of dishes including having experience of using a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Pupils can: Know that food is grown, reared and caught in the UK, Europe and the wider world. Understand why a healthy diet is important. Know that to be active and healthy, food and drink are needed to provide energy. Understand how to prepare and cook a variety of predominantly savoury dishes including having experience of using a heat source. Understand what to do to be safe and hygienic. Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Measure and weigh ingredients accurately	Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Pupils can: Begin to explain how ingredients are grown, reared and caught in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available. Evaluate a meal and consider if they contribute towards a balanced diet Begin to understand that different food and drink contain different substances that are needed for health. Explain what times of year particular foods are eaten in. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes including the use of a heat source. Demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Begin to use appropriate tools and equipment, weighing and measuring with scales	Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Pupils can: Explain how ingredients are grown, reared and caught. Understand that seasons may affect the food available. Know different food and drink contain different substances that are needed for health. Plan a healthy and affordable diet. Explain how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source. Confidently use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Use appropriate tools and equipment, weighing and measuring with scales

EYFS Vocabulary

[illegible]

Year 1 Vocabulary

[illegible]

Year 2 Vocabulary

[illegible]

Year 3 Vocabulary

[illegible]

Year 4 Vocabulary

[illegible]

Year 5 Vocabulary

[illegible]

Year 6 Vocabulary

[illegible]

Design Technology SEND Strategies	
	Here is how we will help:
Attention Deficit Hyperactivity Disorder	• Praise positive behaviour at each step to encourage an increase in self-esteem • Ensure clear instructions are given throughout the lesson • Provide time limited learning breaks • Ensure step by step instructions are given, so each child knows what part of the lesson they are working on (For example, the design, the creation or the evaluation) • Provide additional time for pupils to express their ideas before the lesson with a pre-teach where appropriate • Provide art tools when necessary to avoid distractions during teacher input
Anxiety	• Ensure the child knows the support on offer before the lesson begins • Provide lots of opportunities to ask questions to clarify thinking and ideas during the lesson • Teach problem solving before the lesson, and strategies to overcome problems that may be faced • Model how to use art tools before setting any work • Use a ‘Now and Next’ board to explain any changes to the routine, for example, if your child will be sitting somewhere else to complete group work, manage this before it happens
Autism Spectrum Disorder	• Use a visual timetable so the child knows what is happening at each stage of the session/day • Understand if the child is hypo-sensitive or hyper-sensitive and how they will manage the sensory work you are asking them to partake in, providing electronic alternative programmes where needed • Provide materials and textures that they can use and understand this information before the lesson • Avoid changing seating plans • Ensure outcomes are clear, with a clear end point to the lesson, so children know when they have reached this. • Use simple, specific instructions that are clear to understand • Understand your student’s skills and where their starting place is • Use Art tools made of specific materials to support sensory processing
Dyscalculia	• Provide concrete resources to help with line drawing and drawing to scale • Ensure the child knows the support available on offer before the lesson begins
Dyslexia	• Use simple, specific instructions that are clear to understand • Pre-teach vocabulary linked to Art that will help the child to success in the lesson like shading, drawing, exploring and collage • Differentiate the learning intention so that the child understands what is being asked of them • Model how to use Art tools before setting the work
Dyspraxia	• Make the most of the large spaces before starting projects • Ensure the tools you are using are accessible to the child • Provide a lesson breakdown, with a clear end, a tick list might be beneficial • Provide an equipment list, words, or visuals with the tools and materials that are needed during that lesson • Model how to use Art tools before setting the work • Differentiate the size and scale of a project and its end result
Hearing Impairment	• Pre-teach vocabulary linked to Art that will help the child to succeed in the lesson like shading, drawing, exploring and collage • Make sure instructions are clear and concise, in case the child lip reads, and in case of an emergency • Try to arrange tables in a circular shape • Provide sign language visuals where possible
Toileting Issues	• Encourage children to use the toilet before working on a piece of artwork, as they may feel this isn’t as easy when they are wearing paint clothes and covered in paint and chalk etc. • Encourage children to wear protective clothes that make access to the bathroom more manageable
Cognition and learning challenges	• Use visuals to break each stage of the lesson down into clear, manageable tasks • Use language that is understood by the child, or take the time to pre-teach language concepts including paint, draw, sketch etc. • Provide resource lists with visuals so children know what resources they need for an activity and can begin to access these independently • Model how to use Art tools before setting the work • Physically demonstrate the lesson and the expectations especially if following the work of a specific artist • Support children with their organisation in the lesson and model this where possible, before the lesson begins
Speech, Language & Communication Needs	• Provide instructions that are clear, concise and match the language of the child, delivering these instructions slowly • Use a visual timetable where necessary • Use visuals on resource lists • Use visuals on resource boxes so children know which ones to access • Encourage evaluations to be done using pictures and child’s voice where possible and then recorded by an adult
Tourette Syndrome	• Provide short, simple, clear instructions • Try to keep the children calm in a lesson, although, Art can be exciting, as this can lead to a tic • Place resources at a safe distance especially if tics are happening at the time of the lesson
Experienced Trauma	• Provide opportunities to be curious and explore the tools and resources that children will use • Use simple, specific instructions that are clear to understand, and deliver these slowly • Before the lesson come up with strategies for if difficulties occur during the lesson and ways these can be overcome, reminding children that Art is about taking risks in our work and expressing ourselves
Visual Impairment	• Provide children with extra-large pieces of paper to work on • Make sure resources are well organised and not cluttered • Ensure the child is positioned in a well-lit space before beginning an activity