

 Design and Technology Curriculum – Year 1 and 2 – Cycle A Please refer to Previous Years’ Geography assessment documents linked to hierarchies Link to DT Association guidance – Link to Projects on a Page Documents			
Key stage 1 National Curriculum	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: Design ♣ 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 ♣ 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 ♣ explore and evaluate a range of existing products ♣ evaluate their ideas and products against design criteria Technical knowledge ♣ 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 As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to: Key stage 1 ♣ use the basic principles of a healthy and varied diet to prepare dishes ♣ understand where food comes from.		
	Developing Planning and Communicating Ideas	Evaluating Processes and Products	Knowledge and Understanding of Materials and Components
Non- Negotiables Year 1	- 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	- Explore and evaluate a range of existing products - Evaluate their ideas and products against design criteria	Build structures, exploring how they can be made stronger, stiffer and more stable
Non- Negotiables Year 2	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.	Identify what they could have done differently or how they could improve their work in future	Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
	Autumn 2: “Let’s Go Fly a Kite!”	Spring 2: Eat More Fruit and Veg!	Summer 2: Building a castle (winding mechanism draw bridge)
Hierarchies	To master practical skills: DT4: Cut materials safely using tools provided. DT5: Measure and mark out to the nearest centimetre. DT6: Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). DT7: Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). DT8: Shape textiles using templates. DT10: Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). To design, make, evaluate and improve: DT15: Design products that have a clear purpose and an intended user. DT16: Make products, refining the design as work progresses. To take inspiration from designers throughout history: DT18: Explore objects and designs to identify likes and dislikes of the designs. DT19: Suggest improvements to existing designs. DT20: Explore how products have been created. Revisiting Cycle A -	To master practical skills: DT1: Cut, peel or grate ingredients safely and hygienically. DT2: Measure or weigh using measuring cups or electronic scales. DT3: Assemble or cook ingredients. DT4: Cut materials safely using tools provided. To design, make, evaluate and improve: DT15: Design products that have a clear purpose and an intended user. DT16: Make products, refining the design as work progresses. To take inspirations form designers from history: DT18: Explore objects and designs to identify likes and dislikes of the designs. DT19: Suggest improvements to existing designs. DT20: Explore how products have been created. Revisiting Cycle B -	To master practical skills: DT4: Cut materials safely using tools provided. DT5: Measure and mark out to the nearest centimetre. DT6: Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). DT7: Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). DT14: Create products using levers, wheels and winding mechanisms. To design, make, evaluate and improve: DT15: Design products that have a clear purpose and an intended user. DT16: Make products, refining the design as work progresses. To take inspirations form designers from history: DT18: Explore objects and designs to identify likes and dislikes of the designs. DT19: Suggest improvements to existing designs. DT20: Explore how products have been created. Revisiting Cycle B – axels in vehicles
Resources	Templates and other resources on s drive, Images of kites from different cultures and from throughout history, examples of kites, tissue paper, dowel, Sellotape, glue, scissors, card, cellophane (coloured/coloured plastic, kite templates, decorating/craft materials, Online resources:	Fruits and vegetables to taste, small knives, graters, plates, bowls, blenders, spoons, chopping boards Texts: Oliver’s Vegetables, Oliver’s Fruit Salad by Vivian French	construction kits suitable for making winding mechanisms (I use Lego Dacta and K’nex) Meccano would also be good., books/pictures/ICT resources about castles, card, reversed cardboard boxes, doweling, square cut, fine string/thread, cotton reels, pegs, lull sticks for handles, wooden wheels, masking tape, glue, pipe-cleaners, stapler, materials for finishing <i>e.g. coloured papers and card, fabric, felt-tip pens, paint</i>, scissors, snips, hole punch, hacksaw, bench hooks, vice. on-line resources for illustration

	Texts: Kite day: A bear and mole story by Will Hillenbrand, Kite Flying by Lin Grace, How to make a kite,		Texts: Books about castles
Vocabulary	Kite, carp, shape, strengthen, design, structure, frame, join, cut	Chop, cut, peel, slice, grate, mix, pour, stir, flesh, seeds, pips, skin, peel, juice, pith, hygiene, names of vegetables and fruits to be used,	Wind, winding mechanism, draw-bridge, portcullis, axel, wheel, construction kit, frame, axle, puncture, modelling, support, materials, tools, punch, scissors, vice, saw, dowel, stable, designing, making <i>e.g. collecting, punching, connecting, fixing, straight, doweling, masking tape, hole punch, cotton reel</i> knowledge and understanding <i>eg axle, winding mechanism, stable, structure, handle, turning, free, fixed, second, minute, timer</i>
Flashback	Use a range of small tools, including scissors, paint brushes and cutlery.	- know how to cut materials safely (fabrics and papers using appropriate scissors) - know how to shape materials using templates (folding, curling, cutting, tearing). - know appropriate and suitable materials to construct a kite	- how to use a knife and grater safely - know and identify ways of working hygienically with food - know how to select and use appropriate equipment and assemble ingredients to create their finished product
Lesson 1	WALT: explain the history of kites and what they look like. Activities: Children will explore different types of kites and why people make them. Children will learn about kites made in different countries and what they are used for. Discuss likes and dislikes of the designs. Discuss shapes and reasons why shapes have been chosen. Discuss how the kites could have been made. Children will use colours, shapes and patterns to decorate a kite template. Children will know: - what a kite is - the history and uses for kites - how to design a kite for a particular use Vocabulary Kite – a toy consisting of a light frame with thin material stretched over it, flown in the wind at the end of a long string. Structure - a structure is something that is made for a purpose, something that is formed and holds its shape Stable - something is in place and will not fall over Strong - something that is strong is harder wearing, will not break as easily	WALT: gather data about the most popular fruits and vegetables Activities: Provide opportunities for children to examine a range of fruit/vegetables. <i>Do you know what this is called? Where is it grown?</i> Provide opportunities for children to handle and smell fruit/vegetables and to describe them through talking, drawing and labelling. Choose two contrasting fruit/vegetables <i>eg apple and banana or carrot and tomato</i> and investigate the inside by cutting them in half. Explain terms <i>eg peel, skin, flesh</i>. Y1s sorting fruits/vegetables. Y2s Finding out about favourite fruits and vegetables – presenting findings in a pictogram Children will know: - and describe fruits and vegetables that are familiar to them Y2 maths link - how to gather data about the most popular fruits and vegetables - how to present data on a pictogram Vocabulary Investigate – carry out research or study into Fruit – the sweet and fleshy product of a tree or other plant that contains seed and can be eaten as food Vegetable – a plant or part of a plant used as food, such as a cabbage, potato, carrot, or bean Preference - a greater liking for one alternative over another or others	WALT: understand what a winding mechanism is and how it works Activities: Show pupils pictures and/or toys that have winding mechanisms and discuss how they work. Ask pupils to discuss which parts move and how. Explain that pupils will be making a group model with a winding mechanism and demonstrate how to use the construction toys if pupils are unfamiliar with them. Some pupils will need the support and pictures to make specific models with winding mechanisms (Using Lego Dacta). Most pupils will be able to make a model independently based on the ideas they have seen (Using Lego Dacta) Regroup to demonstrate and explain how the models work and ask pupils to draw and label their models. Children will know: - how winding mechanisms are made and how they work - children will label drawings that show how the mechanism works - how to make labelled drawings that show how the mechanism works - that a winding mechanism has an axle that turns and a handle Vocabulary Winding mechanism - the internal system that transfers energy to the mainspring, powering the movement Mock-up - making an example of something to test or to learn new skills Reinforce - to strengthen or support an object or structure
Lesson 2	WALT: explore materials used to make simple kites. Activities: Children will explore materials that could be used to make different kites. They will carry out tests to see which materials are more suitable for kite making. Children will make observations and write notes about the tests they do. Children will know: - some materials used to make kites. - the different materials to make kites are better than others - how to make a prediction and test it Vocabulary Properties - words to describe what a material is like Material - what an object is made from Sturdy - strong and hard wearing User - the person who the object is designed for	WALT: identify different parts of fruits and vegetables Activities: Evaluate existing products to determine what the children like best (preference tests) <i>eg fresh potato salad, canned potato salad, home-made potato salad</i>. Create a picture and word database by drawing/photographing foods and scanning them into a computer. Brainstorm all the different things that can be made with fruit and vegetables. Children to taste test different combinations of fruits and vegetables and evaluate their flavour to help them plan their own smoothie ingredients. Children will know: - how to draw and label a variety of fruits and vegetables - different parts of fruit and vegetables, such as skin, flesh and seeds - how to use sensory vocabulary to describe texture, taste and appearance Vocabulary Investigate – carry out research or study into Fruit – the sweet and fleshy product of a tree or other plant that contains seed and can be eaten as food Vegetable – a plant or part of a plant used as food, such as a cabbage, potato, carrot, or bean Evaluate - checking how good something is and how to make it better	WALT: explore techniques for making winding mechanisms using tools accurately and safely Activities: Refer back to the models of winding mechanisms. Compare to axels in vehicles. Show pupils a variety of materials and tools. Can they identify the materials and tools which have been used to make the axles? Ask which they think could be used to make a winding mechanism. Teacher demonstrate how to how the box can be used as a frame to support an axle and how to make the winding mechanisms. Recap on what has been made and which materials and tools have been used. What was the work order and was it important? Could the model have been developed in a different way? Vocabulary of parts of a castle i.e. Draw-bridge, Portcullis recapped from History session Children will know: - techniques for making winding mechanisms from construction materials. - how to to use tools accurately and safely. Year 2 - with greater control. Vocabulary Winding mechanism - the internal system that transfers energy to the mainspring, powering the movement Mock-up - making an example of something to test or to learn new skills Reinforce - to strengthen or support an object or structure

			Axle – a rod that holds a wheel in place and allows it to turn Wheel – a circular object that turns on an axel Rotate – to turn or spin around a central point Frame
Lesson 3	WALT: make a simple Carp kite. Activities: Children will learn about the children’s festival in Japan and what it means. They will learn what a carp kite is and why it is flown on Children’s Day. Teacher demonstration making the carp kite – modelling drawing around a template on the edge of materials, how to cut accurately with control. They will follow instructions to make their own carp kite. How did the kite fly? Evaluate. Children will know: how to make a simple kite by following instructions. be able to cut materials safely. how to shape materials using templates (folding, curling, cutting, tearing). how to evaluate a simple kite. Year 2: what kite shapes would fly better than others. Vocabulary Structure - how something is built or put together Materials - what an object is made from Features - a special part which makes something special or noticeable, such as eyes and nose on a face. User - the person who uses the object	WALT: identify ways of working safely with sharp objects such and knives and graters Activities: Discuss basic food hygiene practices with the children. Ask the children to practise using hand tools and simple food-processing skills <i>eg washing, grating, peeling, slicing, squeezing</i> . Discuss the different effects achieved by different processes. Children will know: - how to use a knife and grater safely - why we should wash hands before preparing food - and identify ways of working safely with knives and graters (Y2) - and identify ways of working hygienically with food (Y2) Vocabulary Hygiene - maintaining health and preventing disease, especially through cleanliness. Grating - reduce (food) to small shreds by rubbing it on a grater. Squeezing - extract the juice from (fruit or vegetables) Slicing - cut (something, especially food) into slices Peeling - remove the outer covering or skin from (a fruit or vegetable)	WALT: design a winding mechanism according to set criteria Activities: Set the scene with a story featuring the defence of a castle. Relate the castle to work on winding mechanisms and discuss the moving parts - the drawbridge and the portcullis. Pupils to design and make a model which has a winding mechanism and which could be used for protection in a castle. Paired work-discuss what information needs to be included in the design and share the results. Compile a list of items for pupils to work from and differentiate according to groupings. Children will know: - some criteria for their design. - and select materials and tools and use the correct vocabulary to name them. Year 2 children will identify criteria for their design. Vocabulary Axle – a rod that holds a wheel in place and allows it to turn Wheel – a circular object that turns on an axel Design – planning how a product will look or work Sketch model - a quick, low cost way to 3d model an idea or design Unique - something special that is one of a kind Stable - something that is balanced and doesn’t fall over
Lesson 4	WALT: explore designs of diamond kites. Activities: Children will explore one of the easiest kites to make, a diamond kite. Children will look at images of different diamond kites and describe the colours and features they have. They will design their own diamond kite on provided templates. Children will know: - how to design a kite. - the materials and equipment needed to make a kite. - how to describe the materials and equipment needed to make a kite. - how to make a kite look aesthetically pleasing. Vocabulary Structure - how something is built or put together Materials - what an object is made from Features - a special part which makes something special or noticeable, such as eyes and nose on a face. User - the person who uses the object	WALT: design a salad/smoothie for a purpose Activities: Discuss healthy eating advice <i>eg eating more fruit and vegetables</i> . Survey the quantities of fruit/vegetables that are eaten in the class. Display as a pictogram. Children will know: - that fruits and vegetables are important to a healthy diet and give reasons - how to design a salad/smoothie Vocabulary Design – planning how a product will look or work Food product – any raw, semi-processed, or processed substance intended for human consumption Purpose – what a product will be used for User - the person who uses the object	WALT: make a winding mechanism for my design Activities: Use picture from castle pop-up book and on-line resources to engage pupils. Ask pupils to look at their own plans and discuss (in pairs) what they are going to make. Remind pupils about the design criteria and discuss generally. - able to be used in the protection of a castle (i.e. a drawbridge or a portcullis) - one/two winding mechanisms - well finished, With pupil help, compile a list showing what has to be done and a suggested plan of work. <u>Suggested idea for plan</u> Gather materials and tools Draw and cut the flap safely. Measure and saw the axle(s) Measure the box carefully to know where to place a hole for the axle. (Show pupils how to do this to ensure the axle is level). Children will know: - how to construct a winding mechanism with a straight axle and one moving part. - how to assemble and combine materials and tools to make a model with a winding mechanism Year 2 - two moving parts. Vocabulary Mock-up - making an example of something to test or to learn new skills Reinforce - to strengthen or support an object or structure Design specification - describes what a product has to do Winding mechanism - the internal system that transfers energy to the mainspring, powering the movement

Lesson 5	WALT: construct a kite. Activities: Children will use a range of materials to follow their plan and make a diamond kite. Children will follow instructions and solve problems to make a successful diamond kite. Children will know: - how to construct a kite - and choose appropriate materials to construct a kite. - how to use colours and patterns to make a kite look attractive. - how to construct a kite following a plan (Y2) Vocabulary Appearance - what something looks like Unique - something special that is one of its kind Joining techniques - ways to join two things together correctly Structure - how something is built or put together Materials - what an object is made from Features - a special part which makes something special or noticeable, such as eyes and nose on a face. User - the person who uses the object	WALT: follow a design to make a salad/smoothie Activities: Explain and remind the rules for working safely with food – safe use of equipment and importance of hygiene. Demonstrate how fruit and vegetables change when they are cooked <i>eg baked apple and a raw apple, boiled potato and a raw potato</i>. Set up a salad bar and ask the children to select and combine their own mixtures. Make a simple salad and ask the children to experiment with different dressings/liquids <i>eg lemon juice, water</i>. <i>What is the impact on the end product of each?</i> Children will know: - how to follow rules for food safety and hygiene - how to make their salad/smoothie design - and identify and follow rules for food safety and hygiene Vocabulary Blender – equipment used to reduce fruit/vegetable into a liquid or puree Food product – any raw, semi-processed, or processed substance intended for human consumption Purpose – what a product will be used for User - the person who uses the object	WALT: continue making of castles as above Activities: Recap on success criteria – - able to be used in the protection of a castle (i.e. a drawbridge or a portcullis) - one/two winding mechanisms - well finished. Pupils apply finishes and decoration to their product. Children will know: As Lesson 4 Vocabulary Success criteria - a list which helps to see if the object does what it is expected to do
Lesson 6	WALT: evaluate your finished kite. Activities: Children will evaluate the kite-making process with a partner and using written methods. They will answer questions to explain their successes and failures during the kite-making process. Children will know: - how to evaluate a piece of work they designed and created from scratch - what evaluation means - how to evaluate and discuss their designs and creations. - how to evaluate and discuss other people’s designs and creations (Y2). Vocabulary: Testing - trying something to see if it works and to make changes or improvement to it Success criteria - a list which helps to see if the object does what it is expected to do Evaluate - checking how good something is and how to make it better Feedback - comments or suggestions on how to improve a product	WALT: evaluate a design against a design criteria Activities: Discuss with children the possible products they might design and make <i>eg fruit salads, vegetable salads, fruit drinks</i>. <i>How can you make fruit and vegetables interesting to eat? What could you use? What will it look/taste like?</i> Allow the children to decide, in pairs or small groups, what type of product they want to make <i>eg juicy fruit salad, colourful vegetable salad</i> and why it is appropriate for their target group. Discuss how much of each fruit and vegetable might be needed. Discuss how to plan the work. <i>What will you need? Where will you work? Who will do what? How much time do you have? What will you need to do first?</i> Encourage the children to select appropriate fruit/vegetables and to prepare the foods appropriately. Encourage them to present their food attractively. Encourage them to record what they have done through drawing and writing and to comment on their finished Children will know: - how to talk about their finished product and say what they think and feel about them - and suggest appropriate fruit and vegetables for a product - select and use appropriate equipment and ingredients (Y2) how to select and use appropriate equipment and ingredients to achieve the shapes and sensory properties required for their product (Y2) how to talk about their finished product, and record through pictures and words how it looks and tastes and how well it matches their original ideas and chosen target group Vocabulary: Testing - trying something to see if it works and to make changes or improvement to it Success criteria - a list which helps to see if the object does what it is expected to do Evaluate - checking how good something is and how to make it better Feedback - comments or suggestions on how to improve a product	WALT: use a finishing technique to improve the quality of my castle Activities: Encourage the children to add finish and detail to the castle using paint and/or collage materials. Encourage the children to talk about their finished products and the main features they have added. Discuss strengths and areas for development. Talk about their finished castle saying what they have done well, what they are particularly pleased with, and which parts might have been done better Highlight specific learning points drawn from the children’s work. Children will know: - and say what they think and feel about their finished products. - and use a finishing technique to improve the overall quality of their castle - how to evaluate products they have made, commenting on the main features, suggesting possible improvements - how to evaluate the work of others and give their opinions in a constructive way Vocabulary: Testing - trying something to see if it works and to make changes or improvement to it Evaluate - checking how good something is and how to make it better Feedback - comments or suggestions on how to improve a product Winding mechanism Stable - something that is in place and will not fall over
Key Knowledge	Children will know: - know how to cut materials safely (fabrics and papers using appropriate scissors) - know how to shape materials using templates (folding, curling, cutting, tearing). - know appropriate and suitable materials to construct a kite	Children will know: - how to use a knife and grater safely - know and identify ways of working hygienically with food - know how to select and use appropriate equipment and assemble ingredients to create their finished product	Children will know: - what a winding mechanism is - how to construct a winding mechanism with a straight axle and one moving part. - know how to cut materials safely (stiff materials and wood using scissors and saws)