DT Curriculum Overview

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	Autumn	Spring	Summer
Nursery	All About Me, Nursery Rhymes, Christmas	Animals, Traditional Stories	Journeys, Summertime, Mini beasts
Reception	All About Me, People Who Help Us, Winter & Christmas	Space, Fantasy, Easter	Animals, Where We Live, Under The Sea
Year 1	Fruity Faces	Traditional Tales Moving Pictures	Roly Poly Toys
Year 2	Australian animations	Spring Rolls	Egyptian Puppets
Year 3	Roman Catapults	Google Sketch up (replaced in 2023 spring – packaging for biscuits using CAD)	Biscuits
Year 4	Moving Pictures	Bread	Buzzer Quiz Game
Year 5	Healthy Pizzas	Moving Toys	Batik Bag
Year 6	Wooden Boxes	X (some DT objectives from Art topic)	Enterprise

DT Skills and Knowledge Progression Document

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3 & 4 Year Old Expectations

Personal Social and Emotional Development

Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.

Physical Development

Use large-muscle movements to wave flags and streamers, paint and make marks.
Choose the right resources to carry out their own plan.
Use one-handed tools and equipment, for example, making snips in paper with scissors.

Understanding the World

Explore how things work.

Expressive Arts and Design

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.
Develop their own ideas and then decide which materials to use to expressthem.
Create closed shapes with continuous lines, and begin to use these shapes to represent objects.

Autumn	Spring	Summer
Topics: All About Me, Traditional Tales, Winter and Christmas	**Topics: People Who Help Us, Growing, Magic: Witches and Wizards**	**Topics: Animals, Seaside and Transport**

Continuous Provision (Creative Area Construction Area and Ourdoor Areas are the main places children can develop these skills) Children have access to these throughout the year

Skills	Knowledge
I can show curiosity towards new ways of modelling.	I know different ways to model.
I can use my senses to explore new materials.	I know how to use my senses to explore new materials.
I can create models based on things I know.	I know how to create model based on items I am familiar with.
I can show a 'can do' attitude.	I know how to keep trying with an activity.
I can focus on an activity for a period of time.	I know how to represent people, events and objects that are familiar to me.
I can concentrate on an activity and pay attention to detail.	I know how to make marks and move my pencil with increasing control.
I can use my imagination to develop my own ideas.	I know how to use simple one handed tools.
I can create my own representation of people, events and objects.	I know that I can use different materials in my work.
I can draw with increasing control.	I am beginning to understand how to use scissors to alter my work.
I can use tripod grip when controlling a pencil/pen.	I know how to talk about items I have made.
I can explore different materials and tools and use them e.g. paintbrush and paint or chalk in playground.	I know how to say items I want to use.
I can use one handed tools with increasing accuracy e.g. making snips in paper with scissors.	I know how to explore materials.
I can talk about what I have made.	I know how to make simple joins.
I can talk about items I want to use.	I know I can create shapes with a continuous line to represent items.
I can explore different materials freely, to develop my ideas about how to use them and what to make.	I know how to show emotions in my work.
I can plan and develop my own ideas and then decide which materials I want to use to express them.	I am beginning to understand how to glue a range of different materials.
I can join different materials and explore different textures.	I know how to talk about and give meaning to marks I have made.
I can create closed shapes with continuous lines and begin to use thee shapes to represent objects.	I know the different types of construction toys I can use.
I am beginning to stick and glue a range of materials such as fabrics, paper and cardboard.	I know how to push and pull items.
I am beginning to make snips in paper using scissors.	I know how to put items together.
	I know how to sort construction materials into different categories.
	I know how to think of my own ideas or ask for support from an adult.
	I know how to choose resources and ask help when needed to carry out a plan and achieve my goal.
	I know how to choose the right resources to make my model.
	I know how to collaborate with others to move large construction items.
	I know how to make different small worlds with blocks and construction kits, such as a city with

	I am beginning to be interested in and describe the texture of things. I can show curiosity towards new construction toys and activities. I can create models based on things I know. I can use my gross motor skills to push and pull items. I can develop my hand eye coordination skills to put items together with increasing accuracy. I can sort my construction materials into different groups e.g. colour, material etc. I can think of my own ideas or ask for support from an adult. I can select and use resources with help when needed to achieve a goal I have chosen. I can begin to work with others to create a model together with the support of an adult. I can choose the right resources to help me construct my creation. I can collaborate with others to manage large items. I can use one handed tools to construct. I can make imaginative and complex 'small worlds' with blocks and construction kids, such as a city with different buildings and a park.	different buildings and a park.
Key Vocabulary	Join Size Big Short Wide Long Mix Stick Paint Cut Chalk Paper Scissors Glue Colour String Lighter Darker Draw Stick plan design construct Build Stack Balance Join Tall Tower Heavy Light Small Push Level Pile up Hard size Big Short Wide Long Hammer Screwdriver Screw Block Duplo Lego create Make Sort Nuts Bolts Digger Crane	

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In Reception and Early Learning Goal Expectations

Physical Development

In reception:

Progress towards a more fluent style of moving, with developing control and grace.
Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.

ELG:

Use a range of small tools, including scissors, paintbrushes and cutlery.

Expressive Arts and Design

In reception:

Explore, use and refine a variety of artistic effects to express their ideas and feelings.
Return to and build on their previous learning, refining ideas and developing their ability to represent them.
Create collaboratively, sharing ideas, resources and skills.

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.

Autumn	Spring	Summer
Topics: All About Me, Fantasy, Winter and Christmas	**Topics: People Who Help Us, Where We Live, Space**	**Topics: Animals and Dinosaurs, Under the Sea, Pirates**

Continuous Provision (Creative Area Construction Area and Ourdoor Areas are the main places children can develop these skills) Children have access to these throughout the year

Skills	Knowledge
I can choose tools I want to use.	I know the different tools I can use that are on offer.
I can write a label for my model.	I know how to write a label for my model.
I can tidy away what I have used.	I know how to tidy away my equipment.
I can share resources and materials.	I know how to share resources and materials.
I can use tools and my hands to take apart, assemble and construct.	I know how to use tools and my hands to take apart, assemble and construct.
I can keep trying when I am faced with challenges.	I know how to keep trying when faced with a challenge.
I can compare models that have been made by colour, shape and size.	I know how to use lines and shapes to draw and paint items I see and imagine.
I can use lines and shapes to draw and paint things I see and imagine.	I know how to construct different materials and different ways I can join items.
I can explore, use and talk about different textures in my creative projects.	I know how to use different tools carefully with control.
I can construct with different materials and experiment with ways materials can be joined together.	I know how to talk and describe my creations using appropriate language.
I can use different tools carefully and with control.	I know how to manipulate materials for different effects.
I can talk about and describe my creations.	I know how to plan, create and review my work.
I can talk about and describe what I would like to make and what materials I will need.	I know how to create sculptures.
I can talk about and describe what I have made.	I know how to build on my previous learning, refining my ideas and developing my ability to represent them.
I can manipulate materials for a desired effect.	I know how to design and make props to use in role play.
I can plan and create models using a variety of materials, reviewing and making changes as I am creating.	I know how to safely use materials and equipment.
I can draw pictures of familiar items using a variety of drawing tools, reviewing and making changes as I am creating.	I know how to make more complex small worlds from blocks and construction.
I can return to and build on my previous learning, refining ideas and developing my ability to represent them.	I know how to use models in my play.
I can create collaboratively, sharing ideas, resources and skills.	I know how to describe what I have made.
I can safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	I know how to describe the process of how something was made.
	I know how to balance and rotate items.
	I know how to construct using different materials in different ways.
	I know how to explain the process I used for my creation.
	I know how to use a range of small tools accurately.
	I know how to plan and review my ideas.

	I can make props and materials to use in role playing stories. I can make imaginative and more complex 'small worlds' from blocks and construction. I can develop stories using models I have made and other equipment. I can talk about what I would like to make and what materials I will need. I can plan and create a model checking on how it is going and making changes as needed. I can describe what I have made. I can describe how I have created something. I can balance and rotate items. I can use construction materials in different ways. I can explain the process I have used for my creation. I can use my hand eye coordination skills to balance items and put items together accurately. I can use a range of small tools with increasing accuracy. I can solve problems with models and find a solution to them. I can think of my own ideas and make links with my learning. I can work with others to build a model or construct a creation taking into account others opinions. I can use construction language to talk about my model or how it was made.	I know how to solve problems and find a solution to them. I know how to use ideas and link them to my learning.
Key Vocabulary	Tools painter painting Junk drawing Plan design Mark printing Dab print maker Press 3D 2D Thread weaving Print sculpture sculptor Paintbrush Collage creative Fabric create Pattern squirt Smooth thread Rough felt Design ribbon Junk shape Sticky tape sketch Shade self-portrait Felt tips observation Lighter Darker Shade Textiles Artist Sponge Mark make Smooth Soft Silky Bumpy Scratchy Texture Build Construct Change Heavier connect Lighter design Lightest measure Heaviest slot Level work person Behind builder Under tape measure Next to label In-between safety On top of gloves Hammer Tools Junk Plan 3D Wood Drill Spanner Nail Hard hat High vis jacket Work bench Balance Plan Review Change Construct Construction Building Joining Balancing Giant	
What does this look like in reception and nursery?		
Focus Tasks/Inputs	Activities are modelled to the children for each of the areas. Reception include a design type activity as part of their rainbow challenge.	
Continuous Provision	Children have access at all times to the creative area indoors where they can complete activities related to the topic or can create activities of their own choice. Children have mini mark making kits so that they can plan and design things in each area. In the construction area children have design kits which compromises of clipboards, planning sheets, tools and pencils. Children are encouraged to verbally talk about their ideas and draw their designs for models. In the outdoor area children have the mark making trolley which has mark making kits, again this supports them to plan and develop ideas when using the large construction outside. They also have access to chalk boards and whiteboards to draw ideas on.	

1	Autumn		Spring		Summer	
	Fruity Faces		Moving Pictures		Roly Poly Toys	
	To know	To know how	To know	To know how	To know	To know how
	-To learn the names of common fruits. -To learn the different places where certain fruits are grown. **-To learn about different tastes, textures and smells of different fruit.** **-To know names of kitchen utensils used for cutting, slicing etc- knife.** -To understand that eating fruit is part of a healthy and balanced lifestyle. - To know which foods are part of a healthy diet. **- To understand why you need to wash fruit and vegetables before you eat them.** - To know the different facial features. **- Know how to prepare simple dishes safely and hygienically, without using a heat source.** **- Know how to apply techniques such as cutting and peeling.** - To know how they could improve their fruity face.	**Design Skills** - To be able to state what products they are designing and making. - To be able to design products that have a clear purpose and an intended user with support. - To be able to generate ideas by drawing on their own experiences. - To be able to use knowledge of existing products to help come up with ideas. - To be able to develop and communicate ideas by talking and drawing simple diagrams and labels. **Making Skills** -To be able to explain what they are making and why. - To be able to select the fruit they want to use and explain their choices. - To be able to follow procedures for safety and hygiene in the kitchen. - To be able to use a range of ingredients (fruit) to make their product. **Evaluating Skills** - To be able to talk about their design ideas and what they are making. - To begin to make simple judgements about their own products and ideas against the design criteria. - To be able to make verbal suggestions as to how to improve their product. - Talk about existing healthy	- To know what a moving picture is. **- To know some names of different moving parts e.g. lever, pivot, wheel.** - To know why some parts of a story move. **- To know what a mechanism is.** **- To know how a slider moves.** **- To know how a lever moves.** **- To know how a pivot moves.** **- To know how a wheel moves.** **- To know how to make a simple slider mechanism.** **- To know how to make a simple lever mechanism.** **- To know how to make a simple wheel mechanism.** **- To know that a lever moves around a pivot.** - To know the appropriate vocabulary to label my design. - To know how my moving mechanism will work. - To know how they could improve their moving picture.	**Design Skills** - To be able to verbally convey their own ideas and explain what they are going to do and how it will work. - To be able to use simple diagrams and labels to plan their moving picture. - To be able to design products that have a clear purpose and an intended user with support. - To be able to explain what their products are and how they will work. - To be able to start to use the appropriate vocabulary such as: levers, sliders, wheels and pivots. - To be able to use knowledge of existing products to help come up with ideas. - To be able to make templates and mock ups of their ideas in card and paper. **Making Skills** -To be able to explain what they are making and why. - To be able to select tools to make their design and explain their choices. - Explore and use different mechanisms in their products e.g. siders, levers, pivots and wheels. - To be able to measure, mark out, cut and shape a range of materials (card and paper) with some support. - To be able to use a variety of simple tools safely e.g. scissors. - To begin to assemble, join and combine materials and components together using a	- To know names of different types of moving toys. -To know how different roly poly toys moves. - To know how a racer roly poly toy moves. - To know how a ditherer roly poly toy moves. - To know how a wanderer roly poly toy moves. **-To know different ways to attach the wheels.** **- To know how to attach a wheel using PVA glue.** **-To know how to attach a wheel using folded card.** **-To know how to attach a wheel using a bracket.** -To know why using a bracket will make the structure stronger. **- To know how to safely use simple tools.** - To know why it is important to use these tools safely. - To know how they could improve their toy next time.	**Design Skills** - To be able to verbally convey their own ideas and explain what they are going to do and how it will work. - To be able to use simple diagrams and labels to plan their moving picture. - To be able to design products that have a clear purpose and an intended user with support. - To be able to explain what their products are and how they will work. - To start to use the appropriate vocabulary such as: brackets, wheels. - To explore different ways of joining the different parts together. - To be able to use knowledge of existing products to help come up with ideas. - To be able to Make templates and mock ups of their ideas in card and paper. **Making Skills** - To be able to explain what they are making and why. - To be able to select and use appropriate processes and tools e.g. scissors, safely. - Explore and use mechanisms in their products e.g. brackets. - With some support measure, mark out, cut and shape a range of materials. - To be able to use a variety of simple tools safely. - To begin to assemble, join and combine materials and components together using a variety of temporary methods

	products, what they are for and how appealing they are. - To be able to say what they like and dislike about existing products. - To be able to talk about what different fruits have been used in existing products. **Technical Knowledge** - To be able to choose fruits that they enjoy. - To be able to use tools such as knives correctly and safely. **Cooking and Nutrition** - To be able to cut and peel ingredients safely. - To be able to work hygienically with some support. - To be able to work safely in the kitchen when using knives.		variety of temporary methods e.g. glues or masking tape. - Begin to use simple finishing techniques to improve the appearance of their product. **Evaluating Skills** - To be able to talk about their design ideas and what they are making. - To begin to make simple judgements about their own products and ideas against the design criteria. - To be able to make verbal suggestions as to how to improve their product. - To be able to talk about existing moving pictures, what they are for and how appealing they are. - To be able to say what they like and dislike about existing products. **Technical Knowledge** - To be able to create working mechanisms such as lever, pivot, slider and wheel. - To be able to describe the movement of simple mechanisms. - To be able to use the correct vocabulary for the different mechanisms used.		e.g. glues or masking tape. - Decide which joining mechanism is the strongest and use this when making the product. - Begin to use simple finishing techniques to improve the appearance of their product. **Evaluating Skills** - To be able to talk about their design ideas and what they are making. - To begin to make simple judgements about their own products and ideas against the design criteria. - To be able to make verbal suggestions as to how to improve their product. - To be able to talk about existing moving toys, what they are for and how appealing they are. - To be able to say what they like and dislike about existing products. **Technical Knowledge** - To be able to create working mechanisms such as a bracket. - To be able to use tools to create a circle which will roll. - To be able to use the correct vocabulary for the different mechanisms used.

2	Autumn		Spring		Summer	
	Animal Animations		Spring Rolls		Puppets	
	To know	To know how	To know	To know how	To know	To know how
	To know that models are made of a combination of shapes and parts. To know that plasticine is a modelling material. Know simple colour mixing combinations. Eg red and yellow makes orange. **To know that a design is a plan for something you / others can make.** **To know that a diagram is a technical drawing and understand that labels help to explain a diagram.** To know that materials are what something is made out of. **To understand how to make their model, stiffer, stronger and how to make shapes.** To know that a design can be followed to create an item. To know that an annotation can show changes or improvements. To know that a requirement / design brief is what a design must be able to do. To know that an evaluation is a way of making a judgement about something based on specific requirements. To know key vocabulary mould, animation, stop	**Design Skills** - To be able to state what product they are designing and making. - To be able to verbally convey their own ideas and explain what they are going to do and how it will work. - To be able to use simple diagrams and labels to plan their moving picture. - To be able to design products that have a clear purpose and an intended user with support. - To be able to explain how their designs willl work. - To be able to generate ideas by drawing on their own experiences. - To start to use the appropriate vocabulary such as: mould, animation, - To be able to use knowledge of existing products to help come up with ideas. - To be able to develop and communicate ideas by talking and drawing. - To be able to model ideas by exploring materials, components by making templates and mock ups. **Making Skills** -To be able to explain what they are making and why. - To be able to select from a	Know that product research is where you find out about existing products. **-To learn the names of common vegetables (bean sprouts, peppers, mushrooms, carrots, tomatoes).** -To learn the different places where certain vegetables are grown. **-To learn about different tastes, textures and smells of different vegetables.** **-To know names of kitchen utensils used for cutting, slicing and grating etc- knife, grater.** -To understand that eating fruit and vegetables is part of a healthy and balanced lifestyle. - To know a balanced diet includes carbohydrates, protein, fruit and vegetables, fat and dairy. - To know that raw food is uncooked. - Know that cross-contamination can happen when preparing meat and vegetables with the same tools. **- To understand why you need to wash fruit and vegetables before you eat them.** - To know the different facial features.	**Design Skills** - To be able to state what product they are designing and making. - To be able to verbally convey their own ideas and explain what they are going to do and how it will work. - To be able to use simple diagrams and labels to plan their spring rolls. - To be able to design products that have a clear purpose and an intended user with support. - To be able to explain how their designs will work. - To be able to generate ideas by drawing on their own experiences. - To be able to use knowledge of existing products to help come up with ideas. - To be able to develop and communicate ideas by talking and drawing. **Making Skills** -To be able to explain what they are making and why. - To be able to select the fruit they want to use and explain their choices. - To be able to follow procedures for safety and hygiene in the kitchen. - To be able to use a range of ingredients (vegetables) to make their product.	-history of puppets -different types of puppets and their purpose – story telling /entertainment/toys -discuss How has the puppet been put together? What type of fabric has been used? What has been added? Who might the puppet have been made for? How well has it been made? - Look at how to make a hand puppet – template, sewing, materials etc -different type of sewing stitches – running stitch, back stitch etc Know a design criteria is a group of requirements for a product. Know that felt is a type of fabric. **Know that felt can be joined with sewing or glue.** **Know that materials can be used for different purposes.** Know that a template can be used to plan out a design to transfer onto a making material. **Know that a larger process can be split into smaller, more manageable parts.** Know that running stitch is a stitch which goes in and out of a piece of fabric from either side of the fabric.	**Design Skills** - To be able to state what product they are designing and making. - To be able to verbally convey their own ideas and explain what they are going to do and how it will work. - To be able to use simple diagrams and labels to plan their moving picture. - To be able to design products that have a clear purpose and an intended user with support. - To be able to explain how their designs willl work. - To be able to generate ideas by drawing on their own experiences. -To be able to select the best material for a specific purpose. - To start to use the appropriate vocabulary such as: mould, animation, - To be able to use knowledge of existing products to help come up with ideas. - To be able to develop and communicate ideas by talking and drawing. - To be able to model ideas by exploring materials, components by making templates and mock ups. **Making Skills**

frame, stop motion.	range of tools, equipment and materials and explain their choices. - To be able to use a range of materials and components. - To be able to measure, mark out, cut and shape a range of materials with a little support. - To be able to use a variety of simple tools safely. - To begin to assemble, join and combine materials and components together using a variety of temporary methods. - To be able to begin to use simple finishing techniques to improve the appearance of their product. **Evaluating Skills** - To be able to talk about their design ideas and what they are making. - To begin to make simple judgements about their own products and ideas against the design criteria. - To be able to make verbal suggestions as to how to improve their product. - To be able to say what the product is , how it works and who it is for. - To be able to talk about existing moving pictures, what they are for and how appealing they are. - To be able to say what they like and dislike about existing products.	**- Know how to prepare simple dishes safely and hygienically, without using a heat source.** **- Know how to apply techniques such as cutting and peeling.** - To know how they could improve their fruity face. - Know that an exploded diagram shows all parts of an item separated into parts.	**Evaluating Skills** - To be able to talk about their design ideas and what they are making. - To begin to make simple judgements about their own products and ideas against the design criteria. - To be able to make verbal suggestions as to how to improve their product. - Talk about existing healthy products, what they are for and how appealing they are. - To be able to say what they like and dislike about existing products. - To be able to talk about what different vegetables have been used in existing products. **Technical Knowledge** - To be able to choose vegetables that they enjoy and that taste nice together. - To be able to use tools such as knives and graters correctly and safely. **Cooking and Nutrition** - To be able to cut, peel and grate ingredients safely. - To be able to work hygienically with some support. - To be able to work safely in the kitchen when using knives and graters.	Understand the words felt, thread, needle, stitch and knot. To know the advantages and disadvantages of different joining techniques for different purposes. **To know that stitching can be used for joining materials or for adding details.** Know that an evaluation reviews a task against a given criteria. To understand how to represent an image within a design for a puppet.	-To be able to explain what they are making and why. - To be able to select from a range of tools, equipment and materials and explain their choices. - To be able to use a range of materials and components. - To be able to measure, mark out, cut and shape a range of materials with a little support. - To be able to use a variety of simple tools safely. - To begin to assemble, join and combine materials and components together using a variety of temporary methods. - To be able to begin to use simple finishing techniques to improve the appearance of their product. **Evaluating Skills** - To be able to talk about their design ideas and what they are making. - To begin to make simple judgements about their own products and ideas against the design criteria. - To be able to make verbal suggestions as to how to improve their product. - To be able to say what the product is, how it works and who it is for. - To be able to talk about existing puppets, what they are for and how appealing they are.

	Technical Knowledge				- To be able to say what they like and dislike about existing products. **Technical Knowledge** **To create paper templates for the puppet by drawing and cutting.** Use measurements and size comparisons to ensure a product is fit for purpose. Separate a design into its parts (eg front / back). Plan the order of making a product in a logical way. **To use basic sewing techniques including running stitch and starting/ending a run of stitch.** **Ensure even stitching when doing a running stitch.** Begin to understand how to join two pieces of material using running stitch. **To use simple tools i.e. needle.** To know how to use a template for marking out identical pieces To use appropriate vocabulary to describe materials, components and processes. **To mark out, cut and join fabric pieces to make the main part of their puppet.** To assemble and join materials to make a product. To use appropriate finishing techniques. To evaluate against design

					criteria To test a finished item they have made.

3	Autumn		Spring		Summer	
	Google Sketch up		Roman Catapult		Healthy Sandwich	
	To know	To know how	To know	To know how	To know	To know how
	-Discuss what is an invention? What new things have been made in your lifetime? what about your parents? -Technology timeline -Sustainability issues. What problems are there in our world and what are we already doing to address them? -Name of products and inventions that help to solve problems in the world eg the vacuum cleaner, telephone, computers, etc. -To understand what CAD is and know the benefits. -To explore the use of Tinkercad in CAD.	**Design Skills** - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to gather information about the needs and wants of particular individuals and groups - To be able to develop their own design criteria and use these to inform their ideas. - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - To be able to use	-Short history of growth of the Roman Empire and the battles they fought and won to take over so much land. **-What is a Catapult and why did the Roman army use it?** **-How does the catapults work? (linked to science knowledge pushes and pulls)** **-To understand the terms levers and pivots.(Levers are made up of 3 parts;** **-A fulcrum – the point at which the lever pivots or turns** **-The load – the stuff you are trying to move** **-The force – the effort it takes to move the load** **-To know how to adjust the power from a lever.** **-knowledge of materials to make own catapult** **-To be able to make adjustments to their catapult after testing.**	**Design Skills** - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to gather information about the needs and wants of particular individuals and groups - To be able to develop their own design criteria and use these to inform their ideas. - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - To be able to use computer-aided design to develop and communicate their ideas. - To be able to generate realistic ideas, focusing on the needs of the user.	-Names of sandwich fillers and different types of bread -texture, smell and appearance of bread/sandwiches **-Names of kitchen utensils used for cutting, slicing etc (eg knife, grater, peeler)** -**Why is it good to have a balanced diet-Healthy diet?** - healthy diet. Introduce the 'balanced plate' model of food groups - to know the names of different food groups and the proportions required for a balanced diet. - **food hygiene/safety in the kitchen** -purpose of different parts of the sandwich -sandwich packaging and its purpose	**Design Skills** - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to gather information about the needs and wants of particular individuals and groups - To be able to develop their own design criteria and use these to inform their ideas. - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - To be able to use

		computer-aided design to develop and communicate their ideas. - To be able to generate realistic ideas, focusing on the needs of the user. - To be able to make design decisions that take account of the availability of resources. **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to order the main stages of making. - To be able to follow procedures for safety and hygiene - To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components		- To be able to make design decisions that take account of the availability of resources. **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to order the main stages of making. - To be able to follow procedures for safety and hygiene - To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components - To be able to measure, mark out, cut and shape materials and components with some accuracy - To be able to assemble, join and combine materials and components with some accuracy - To be able to apply a range of finishing techniques, including those from art and design, with some accuracy		computer-aided design to develop and communicate their ideas. - To be able to generate realistic ideas, focusing on the needs of the user. - To be able to make design decisions that take account of the availability of resources. **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to order the main stages of making. - To be able to follow procedures for safety and hygiene - To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components

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						- To be able to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate - To be able to be active and healthy, food and drink are needed to provide energy for the body

4	Autumn		Spring		Summer	
	Moving Pictures (Pop Up Books)		**Bread**		**Buzzer Quiz Game**	
	To know	**To know how**	**To know**	**To know how**	**To know**	**To know how**
	-Explore and investigate a collection of products that have moving parts/pop ups To study lever and linkage systems in order to learn how they function. To be able to use appropriate technical vocabulary to describe materials and mechanisms **To understand how mechanisms are made** **To understand how a mechanism works.** **To use different ways to join materials together** **To understand what a mechanism is.** **To be able to make 3 different types of mechanism** **To evaluate the final product.** **To explain why they have used a certain material as part of their project.**	**Design Skills** - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to gather information about the needs and wants of particular individuals and groups - To be able to develop their own design criteria and use these to inform their ideas. - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - To be able to use	**To know what bread is** **To know what the main ingredients of bread are.** **To know what spices and herbs were used in the tudor times.** **To know why we knead bread** **To know why we leave bread to rise** **To know what yeast does.** **To know how to knead bread.** To know that bread comes in a variety of forms e.g. sweet and savoury, with a variety of shapes, textures and finishes To understand that products are designed for different users and this must be considered when designing To understand about physical and chemical changes in food. To understand the processes involved in making bread. To know how to follow instructions. **To know how to handle food safely and hygienically.** -To know what a recipe is	**Design Skills** - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to gather information about the needs and wants of particular individuals and groups - To be able to develop their own design criteria and use these to inform their ideas. - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - To be able to use	Discuss games and purposes. To know what makes games enjoyable. To understand what audiences want to play **To understand what is needed to complete an electrical circuit.** **To use a buzzer or lightbulb as part of a circuit.** **To understand the dangers of electricity** **To know the electrical component symbols to draw a circuit.** To evaluate your final product. **To use wire cutters safely**	**Design Skills** - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to gather information about the needs and wants of particular individuals and groups - To be able to develop their own design criteria and use these to inform their ideas. - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - To be able to use

		computer-aided design to develop and communicate their ideas. - To be able to generate realistic ideas, focusing on the needs of the user. - To be able to make design decisions that take account of the availability of resources. **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to order the main stages of making. - To be able to follow procedures for safety and hygiene - To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components		computer-aided design to develop and communicate their ideas. - To be able to generate realistic ideas, focusing on the needs of the user. - To be able to make design decisions that take account of the availability of resources. **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to order the main stages of making. - To be able to follow procedures for safety and hygiene - To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components		computer-aided design to develop and communicate their ideas. - To be able to generate realistic ideas, focusing on the needs of the user. - To be able to make design decisions that take account of the availability of resources. **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to order the main stages of making. - To be able to follow procedures for safety and hygiene - To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components

		- To be able to measure, mark out, cut and shape materials and components with some accuracy - To be able to assemble, join and combine materials and components with some accuracy - To be able to apply a range of finishing techniques, including those from art and design, with some accuracy **<u>Evaluating Skills</u>** - To be able to identify the strengths and areas for development in their ideas and products - To be able to consider the views of others, including intended users, to improve their work - To be able to say how well products have been designed - To be able to say how well products have been made - To be able to say why materials have been chosen - To be able to say what methods of construction have been used - To be able to say how well products work - To be able to say how well products achieve their purposes - To be able to say how well products meet user needs and wants - To be able to talk about		- To be able to measure, mark out, cut and shape materials and components with some accuracy - To be able to assemble, join and combine materials and components with some accuracy - To be able to apply a range of finishing techniques, including those from art and design, with some accuracy **<u>Evaluating Skills</u>** - To be able to identify the strengths and areas for development in their ideas and products - To be able to consider the views of others, including intended users, to improve their work - To be able to say how well products have been designed - To be able to say how well products have been made - To be able to say why materials have been chosen - To be able to say what methods of construction have been used - To be able to say how well products work - To be able to say how well products achieve their purposes - To be able to say how well products meet user needs and wants - To be able to talk about		- To be able to measure, mark out, cut and shape materials and components with some accuracy - To be able to assemble, join and combine materials and components with some accuracy - To be able to apply a range of finishing techniques, including those from art and design, with some accuracy **<u>Evaluating Skills</u>** - To be able to identify the strengths and areas for development in their ideas and products - To be able to consider the views of others, including intended users, to improve their work - To be able to say how well products have been designed - To be able to say how well products have been made - To be able to say why materials have been chosen - To be able to say what methods of construction have been used - To be able to say how well products work - To be able to say how well products achieve their purposes - To be able to say how well products meet user needs and wants - To be able to talk about

		inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products - To be able to refer to their design criteria as they design and make - To be able to use their design criteria to evaluate their completed products who designed and made the products - To be able to say where products were designed and made - To be able to say when products were designed and made - To be able to say whether products can be recycled or reused **Technical Knowledge**		inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products - To be able to refer to their design criteria as they design and make - To be able to use their design criteria to evaluate their completed products who designed and made the products - To be able to say where products were designed and made - To be able to say when products were designed and made - To be able to say whether products can be recycled or reused **Technical Knowledge** **Cooking and Nutrition** - To be able to say where food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world - To be able to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source		inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products - To be able to refer to their design criteria as they design and make - To be able to use their design criteria to evaluate their completed products who designed and made the products - To be able to say where products were designed and made - To be able to say when products were designed and made - To be able to say whether products can be recycled or reused **Technical Knowledge**

				- To be able to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate - To be able to be active and healthy, food and drink are needed to provide energy for the body		

5	Autumn		Spring		Summer	
	Healthy Pizzas		Moving Toys		Batik Bag	
	To know	To know how	To know	To know how	To know	To know how
	Design Skills - To be able to work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - To be able to describe the purpose of their products - To be able to indicate the design features of their products that will appeal to intended users - To be able to explain how particular parts of their products work - To be able to carry out research, using surveys, interviews, questionnaires and web-based resources - To be able to identify the needs, wants, preferences and values of particular individuals and groups - To be able to develop a simple design specification to guide their thinking - To be able to share and clarify ideas through discussion - To be able to model their ideas using prototypes and pattern pieces - To be able to use annotated sketches, cross-sectional drawings and exploded diagrams to	What is a pizza? Where do its origins come from? **Flatbread with special dough and toppings. Italy in 17th and 18th centuries. 1889 Margerherita – first to contain cheese.** -To carry out market research on existing products. What do people of different ages like. -To understand what makes a healthy meal. Meal that includes various food groups. **Protein – growth and repair.** **Carbohydrates – energy.** **Vitamins and minerals – fight disease and grow.** **Fats – insulation.** **Sugars – short burst of energy.** -pizza ingredients -What is consumer research – what does it mean? The consumer is someone who purchases (buys) the goods you are trying to sell. How could we find out about the consumer? Does everyone buy pizzas? Is it only young people? -food hygiene kitchen safety **Washing ingredients and equipment to avoid illness.**	-To investigate levers, cams and pulleys. -To evaluate the effectiveness of mechanical parts when designing a moving toy.	-Learn What is a CAM and how is it used in moving toys? A cam is a mechanism that converts rotary motion into reciprocating motion. Two parts – CAM itself and the follower. Know how levers work - resting on a pivot with a force applied. Know how pulleys work – changes the direction of the force applied -Investigate a collection of moving toys that contain a cam mechanism. Find out Which parts turn? Learn Which parts move? -How are the different parts attached to allow free movement? -How are the moving parts guided into place? To understand how to safely use tools and equipment. **Safety goggles when sawing, supervised, carefully watch and sawing, keeping fingers away, using a board.** -To recognise the movement of a mechanism within a toy or model. -To understand that different shaped cams produce different movements	-To carry out research for the development of a product to develop a detailed plan. -Select appropriate tools and techniques. -To Use embroidery and other stitches to finish fabric work - To Cut materials to join accurately and securely. -To test, evaluate and suggest modifications to the joining techniques.	-Linked to topic on Africa -different types of carriers. E.g. a plastic carrier bag, a paper bag, a woven basket, and a rucksack and their purpose What is likely to be carried in each? What is the purpose of each carrier? What are the properties of each bag? What are the advantages and disadvantages of each the materials, size or shape of each bag? -discuss sustainable bags - why are they important? -materials used to make bags -What is Batik? Background history of this technique/textiles -look at different batik designs - Look at different stitches for joining materials and names - different types of joining techniques – Which are the strongest? - Know what running stitch, back stitch and over stitch are and how to do them.

	develop and communicate their ideas. - To be able to use computer-aided design to develop and communicate their ideas. - To be able to generate innovative ideas, drawing on research - To be able to make design decisions, taking account of constraints such as time, resources and cost **Making Skills** - To be able to select tools and equipment suitable for the task - To be able to explain their choice of tools and equipment in relation to the skills and techniques they will be using - To be able to select materials and components suitable for the task - To be able to explain their choice of materials and components according to functional properties and aesthetic qualities - To be able to produce appropriate lists of tools, equipment and materials that they need To be able to formulate step-by-step plans as a guide to making - To be able to follow procedures for safety and hygiene	-To understand that different combinations of ingredients can affect the taste and texture of the product. To use appropriate language related to food products.-To know how to prepare a pizza.		**Offset/Eccentric - A circular cam that rotates about an off-centre point** **A pear shaped cam where for part of the rotation the follower is still, then it gently rises and falls** **Snail - The follower gently rises then drops suddenly** -To understand the relationship between a cam and a follower **As the cam rotates, the follower rises and falls in a process known as reciprocating motion.**		

	- To be able to use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components - To be able to accurately measure, mark out, cut and shape materials and components - To be able to accurately assemble, join and combine materials and components - To be able to accurately apply a range of finishing techniques, including those from art and design - To be able to use techniques that involve a number of steps - To be able to demonstrate resourcefulness when tackling practical problem **Evaluating Skills** - To be able to identify the strengths and areas for development in their ideas and products - To be able to consider the views of others, including intended users, to improve their work - To be able to critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make					

	- To be able evaluate their ideas and products against their original design specification - To be able to say how well products have been designed - To be able to say how well products have been made - To be able to say why materials have been chosen - To be able to say what methods of construction have been used - To be able to say how well products work - To be able to say how well products achieve their purposes - To be able to say how well products meet user needs and wants - To be able to talk about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products - To be able to refer to their design criteria as they design and make - To be able to use their design criteria to evaluate their completed products who designed and made the products - To be able to say where products were designed and made - To be able to say when products were designed and					

	made - To be able to say whether products can be recycled or reused **Technical Knowledge**					

6	Autumn		Spring		Summer	
	Wooden Boxes		X (These are DT objectives from spring art topic – cushions)		Enterprise	
	To know	To know how	To know	To know how	To know	To know how
	To produce a personalized wooden box using wood. Children to state purpose of box and decoration must reflect this. Design must fit with their choice. To be able to include 3D decoration e.g. decoupage, fixing buttons, gluing on shapes cut from painted balsa. To investigate ways of strengthening structures. To evaluate their products against their original design brief e.g. how well it meets its intended purpose and what amendments could be made. To evaluate their work both during and at the end of the assignment and make amendments clear throughout in planning. To be able to evaluate products on the market and consider the views of others to improve them and adapt to their own brief and requirements.	**To understand that boxes can be made for different purposes, made from different materials and constructed in different ways.** e.g. memory box, money box, storage for photos, personal items / treasures. Open boxes/ with lids. To know that structures can fail when loaded. To know some good materials to construct boxes **To know the best ways to strengthen a structure** and the names of the names – V and X strengthening – diagonals and triangles. **To know how to join and combine materials and components accurately in permanent ways.** To know that different types of glue are more effective for different materials. **To know ways to be safe when using tools** To know the stance when using a saw, finger folding and distancing and ways to hold	-To carry out research into different materials and what they are used for. -Select appropriate tools and techniques e.g. needle, ruler, thread, buttons and other embellishments. -To Use embroidery and other stitches to finish fabric work - To cut materials to join accurately and securely. -To test, evaluate and suggest modifications to the joining techniques.	**To know the names of some materials to construct and decorate a cushion e.g. felt, cotton, wool, silk, polyester, denim** **To know how to thread a needle and sew using stitches. To know the names of stitches e.g. running, back, chain, blanket, French knot, cross.**	-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 To plan making a product using a budget. making a budget -generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design - select from and use a wider range of tools and equipment to perform practical tasks accurately investigate and analyse a range of existing products -select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities -evaluate their ideas and products against their own design criteria and consider the views of others to	**To know different types of target markets** **To know what a design criteria is.** **To know the terms of profit and loss, marketing, product design, break even point, USP, entrepreneur,** To know what a budget is and how to source materials when considering cost To know names of tools to use for construction of products **To know ways to advertise products effectively.** **To know the names of different roles within a team: marketing, production, finance, advertising / sales, project manager** . **To know what logo and a slogan are and how they are used by companies.**

		a knife. To know what safety equipment must be worn at specific staged of production. **To know how to use a ruler accurately as part of a practical task to measure wood, marking on the wood as appropriate.** To know how to add 3D elements to their design. To know that the join used is called triangulation. To know how to suggest improvements to their design and state what worked well. To know how to use search engines to find out research and how to check if answers are reliable. To know that carpentry has been around for over 2000 years. To know information on a local carpentry business called Gariff and it was started in 1986.			improve their work	