DT Progression Of Knowledge Overview

EYFS	Nursery	Reception	ELG
Understanding the world	Explore how things work.	Explore how things work.	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 express them. Create closed shapes with continuous lines, and begin to use these shapes to represent objects.	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.	Share their creations, explaining the process they have used.

Areas of Study	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Famous People (Diversity)	Jennie Maizels: British pop- up book creator (Sheet Materials)	Maya Penn: American fashion designer who began designing at aged eight. (Textiles)	Zaha Hadid: British-Iraqi architect and designer (Construction)	Shigeru Miyamoto: Japanese video game designer (Electronics)	Jamie Oliver: British Chef (Food)	Rafael Sergio Smith: American designer of the 'uber' shelter for disaster relief (Sheet Materials/Construction)
Mechanisms	**POP UP CARDS** Fold, tear and cut paper and card Cut along lines, straight and curved Use hole punch Insert paper fasteners for card linkages Create hinges Use simple popups Investigate joining's temporary, fixed and moving **Levers:** A seesaw is one example of a lever mechanism. Seesaws are narrow boards supported by a fulcrum in the middlepoint	**MOVING PICTURE BOXES** Join appropriately for different materials and situations e.g. glue, tape Mark out materials to be cut using a template Cut strip-wood/dowel using hack-saw and bench hook Glue-gun used by an adult Pulley mechanisms using a dowel and string – making objects go up and down by turning the pulley Simple mechanisms move: in a straight line- backwards and	**LEVERS, PIVOTS & POP UPS** Cut slots Cut internal shapes Use lolly-sticks/card to make levers and linkages Use linkages to make movement larger or more varied. Use and explore complex pop-ups Levers Linkage Fixed pivot Loose pivot V Fold Mouth Internal stands			**AUTOMATA TOYS CAMS** A cam mechanism is made up of three components: a cam, slider and follower. The mechanism causes components to move. Cams can be made from metal, plastic or wood. A cam mechanism is made up of a cam, follower, axle, slider and handle. Cams come in different shapes which create different motions. Cam mechanisms create linear and rotary movements. Changing the cam shape in an automata will create different movements.

	between two ends. As one end goes up the other comes down! **Scissors** are another example of a lever mechanism. Scissors have two levers fixed. The hands are squeezed at one end of the levers, the blades come together at the other end. **Sliders:** Some children's books contain slider mechanisms. As the slider is pushed or pulled, characters or objects move up and down or side to side. Drawers also work in a similar way. As you push and pull the handle, drawers slide along a slider track in the cabinet. **V Fold Pop up Mouth Mechanism** **Internal Stands**	forwards, round and round, in a curve.				A cam shaft has one or more cams attached to it A snail Cam produces a slow rise and quick drop movement An eccentric cam is a disc with its centre of rotation positioned 'off centre'. The cam rotates the flat follower rises and falls at a constant rate To design and construct a cam toy To learn about all the different types of cam mechanisms and how they affect the movement of a cam toy. To experiment with different cam mechanisms A cam mechanism is made up of 3 components: cam, slider and follower
Construction	**WHEELS & AXLES** Make vehicles with construction kits which contain free running wheels Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels Attach wheels to a chassis using an axle Join appropriately for different materials and situations e.g. glue, tape Know that on a	**BRIDGES** Roll paper to create tubes Fold, tear and cut paper and card Join appropriately for different materials and situations e.g. glue, tape Investigate strengthening sheet materials Much of London was rebuilt after the Fire Of London. Sir Christopher Wren was responsible for planning the designs for rebuilding much of London A bridge is any kind of	**CHAIRS** Create shell or frame structures, strengthen frames with diagonal struts Make structures more stable by giving them a wide base Strengthen with shapes e.g - triangles Prototype frame and shell structures Develop and use knowledge of how to construct strong, stiff shell structures Develop and use knowledge of nets of cubes and cuboids			**SHELTERS** Cut strip wood, dowel, square section wood accurately to1mm Join materials using appropriate methods Build frame works using a range of materials e.g. wood, card corrugated plastic Use glue-gun with close supervision Understand how to strengthen, stiffen and reinforce 3-D frameworks Know and use technical vocabulary relevant to the project.

	vehicle: • the wheels need to be fixed to an axle • the axle needs to move freely in the chassis Explain how a wheel and axle move on a vehicle. Know that some materials are stronger and more rigid (stiffer) than others e.g. thick card is stronger and more rigid than paper Use the vocabulary: wheel, axle, chassis, body to describe the parts of the vehicle correctly.	structure which breaches a gap Paper can be made stronger by folding in different ways Triangles are effective tools for architecture and are used in the esign of buildings and other structures as they provide strength and stability. Different kind of bridges	and, where appropriate, more complex 3D shapes. Know and use technical vocabulary relevant to the project.			Investigate different frame structures both temporary and permanent e,g bus shelters, tents etc Be aware of the different shelters used in WW2 for protection from bombing – Anderson Shelters, Morrison Shelters. **& Electrical Systems** Know how to make a complete electrical circuit Add a switch and a light to a circuit and house within the shelter Can complete an electrical circuit including a switch and a light bulb
Textiles		**TSHIRTS** Colour fabrics using a range of techniques e.g. fabric paints, printing, painting Cut out shapes which have been created by drawing round a template onto the fabric Join fabrics by using running stitch, glue, staples, over-sewing, tape Decorate fabrics with buttons, beads, sequins, braids, ribbons Tie Dye Templates Fabric paints Running stitch Decorations Fabric Glue		**PURSES** Join fabrics using running-stitch, over sewing, backstitch Explore fastenings and recreate some e.g. sew on buttons and make loops Prototype a product using J-cloths Use appropriate decoration techniques e.g. simple stitches such as cross stitch **Running Stitch** – creating a dotted line effect **Back Stitch** – thread double backed and no visible spaces in between stitches **Over Sew Stitch** – neaten the edges of the fabric **Blanket Stitch** – reinforce the edges of thick material **Cross stitch** - a stitch formed of two stitches	**TOTE BAGS** Understand seam allowance Join fabrics using running-stitch, over sewing, backstitch Explore fastenings and recreate some e.g. sew on buttons and make loops Prototype a product using J-cloths Use appropriate decoration techniques e.g. appliqué (glued or simple stitches) Create a simple pattern **Running Stitch** – creating a dotted line effect **Back Stitch** – thread double backed and no visible spaces in between stitches **Over Sew Stitch** – neaten the edges of the fabric **Blanket Stitch** – reinforce the edges of thick material	

				crossing each other.	Pattern pieces need to be placed well to avoid wastage when cutting out the templates Care needs to be taken when sewing to leave seam allowance to avoid fraying	
Food	**PITTA PIZZA** Understand where a range of vegetables come from. Vegetables are part of a healthy diet. Understand that vegetables grows on plants and underground Food Preparation - Wash your hands and tie back long hair. Wear an apron. Wash utensils in warm soapy water and clean surfaces thoroughly. Pizza is a flat bread base with a tomato sauce topping and a variety of other ingredients Pizza comes from Italy but has become popular all over the world, Know that a range of chopped vegetables and other ingredients can be put together to make a new dish **GINGERBREAD BISCUITS** Food Preparation - Wash your hands and tie back long hair. Wear an apron. Wash utensils in warm soapy water and clean	**STIR FRY** Understand where a range of vegetables come from. Understand that vegetables grows on plants and underground Food Preparation - Wash your hands and tie back long hair. Wear an apron. Wash utensils in warm soapy water and clean surfaces thoroughly. Food Groups: each of the groups forms part of a balanced diet A vegetarian diet is one, which excludes meat. A Vegan diet - vegans do not use any product produced by animals, such as eggs, dairy products, or honey. Stir-frying is a Chinese cooking technique in which ingredients are fried in a small amount of very hot oil while being stirred/tossed in a wok. The technique has spread into other parts of Asia and the West. **SANDWICHES** Food Preparation - Wash your hands and tie back long hair. Wear an apron. Wash utensils in warm soapy water and clean surfaces thoroughly. Know that there are different food groups – fats, proteins, carbohydrates,	**FRUIT SALAD** Learning how to cook is an essential life skill – part of a healthy diet. Show an awareness of a healthy diet and a balanced diet The 5 main food groups (Eatwell plate): Fruit and vegetables Carbohydrates Protein Dairy Fats (including oils and sugar) Show an awareness of seasonal variation in food Fruit Salad can be part of a healthy diet Understand where a range of fruits come from. Know that you should eat 5 portions of fruit each day Understand that fruit grows on trees, bushes and vines	**TUDOR BISCUITS** Learning how to cook is an essential life skill – part of a healthy diet. Show an awareness of a healthy diet and a balanced diet The 5 main food groups (Eatwell plate): Fruit and vegetables Carbohydrates Protein Dairy Fats (including oils and sugar) Know that biscuits were a cheap tasty treat in Tudor times Know that there are a wide variety of biscuits Know the basic ingredients of a biscuit	**FLATBREADS** Learning how to cook is an essential life skill – part of a healthy diet. Show an awareness of a healthy diet and a balanced diet The 5 main food groups (Eatwell plate): Fruit and vegetables Carbohydrates Protein Dairy Fats (including oils and sugar) Know that the earliest bread was made in or around 8000 BC in the Middle East. During Neolithic times, farming and agriculture developed rapidly and bread making became an important source of food. Many early breads were unleavened (meaning no yeast or raising agent is present). These are still made in many parts of the world now Know that bread is made from a dough of flour and water. There are many kinds of bread from all over the world. There are various toppings that can be used on flatbread. A basic knowledge of a Mediterranean diet Mediterranean foods include peppers, olives, anchovies	**SOUP** Learning how to cook is an essential life skill – part of a healthy diet. Soup can be part of a healthy diet – nutrients, water, fibre. Understand where and how ingredients are grown – links to shopping local – carbon footprint. An understanding of existing soup flavours and ingredients Show an awareness of a healthy diet and a balanced diet The 5 main food groups (Eatwell plate): Fruit and vegetables Carbohydrates Protein Dairy Fats (including oils and sugar) Show an awareness of seasonal variation in food

	surfaces thoroughly. Biscuits are baked flour baked snacks often sweet in flavour. They often contain special ingredients for special flavour. Know that there are a wide variety of biscuits Know the basic ingredients of a biscuit Know that several ingredients are combined to make a biscuit Know that biscuits need to be cooked/baked in an oven Know the fairytale of the Gingerbread Man **SALAD** Food Preparation - Wash your hands and tie back long hair. Wear an apron. Wash utensils in warm soapy water and clean surfaces thoroughly. Understand where a range of vegetables come from. Know the names of a range of ingredients that make a salad. Salad is part of a healthy diet. Understand that vegetables grow on plants and underground Know that a range of chopped vegetables and other ingredients can be put together to make a new dish	dairy, fruit and vegetables. Know that all food comes from plants and animals Know the key ingredients of a sandwich Know tools used for making and presenting sandwiches There are many different types of sandwiches Sandwiches are a very British tradition and are served as a part of a traditional afternoon tea. There are different kinds of bread. Sandwiches can vary by the choice of – bread, spread, filling and appearance/shape. **BREAD** Develop a food vocabulary using taste, smell, texture and feel Group familiar food products Cut, grate, chop and spread a range of ingredients Work safely and hygienically Understand the need for a variety of foods in a diet Measure and weigh food items -non statutory measures e.g. spoons, cups Food Preparation - Wash your hands and tie back long hair. Wear an apron. Wash utensils in warm soapy water and clean surfaces thoroughly. Know that there are different food groups – fats, proteins, carbohydrates, dairy, fruit and vegetables. Know that all food comes from plants and animals There are many different				

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