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Learning in EYFS: D&T

This part of the document demonstrates which statements from the 2020 Development Matters are prerequisite skills for DT within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for DT.

Design Technology – Expressive Arts and Design in the EYFS			
Development Matters non-statutory guidance Three and Four-Year-Olds	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.	**Nursery Autumn term** • Designing houses and constructing • Joining Materials • Cake Baking • Making Gifts/ toys **Nursery Spring term** • The toy box – cut and stick pictures of toys from old catalogues. • Nature pictures- Transient Art **Nursery Summer term** • Make moving mini-beast puppets - moving parts such as wings/ legs • Papier Mache creatures using paint and other junk modelling items. • Junk modelling sea creatures
	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 express them. Create closed shapes with continuous lines, and begin to use these shapes to represent objects.	
Development Matters non-statutory guidance Reception	Physical Development	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.	**Reception Autumn term** • Superhero masks – how to make a hole safely • Design and make a superhero spoon puppet • Make cakes and biscuits **Reception Spring term** • Junk modelling rockets and spaceships – ways of joining • Clay fossils
	Expressive Arts and Design	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.	

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			Create collaboratively, sharing ideas, resources and skills.	**Reception Summer term** • Junk modelling – making boats, ways of joining
Statutory Framework ELG	Physical Development	Fine Motor Skills	Use a range of small tools, including scissors, paintbrushes and cutlery.	
	Expressive Arts and Design	Creating with Materials	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.	

Year Group	National Curriculum	Sticky Knowledge & End Points	Vocabulary	Golden Threads & Skills
Y1	**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	**Mechanisms - Sliders and levers – Make a Book with Moving Parts** • Explain what a slider and a lever is. • Explain how the slider moves • Explain how the lever moves • Identify which part of the mechanism is the pivot • Explain how to add pictures to the sliders and levers	**Mechanisms - Sliders and levers – Make a Book with Moving Parts** Slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards design, make, evaluate, user, purpose, ideas, design criteria, product, function	**Mechanisms - Sliders and levers – Make a Book with Moving Parts** **Designing** • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through drawings and mock-ups with card and paper. **Making** • Plan by suggesting what to do next. • Select and use tools, explaining their choices, to cut, shape and join paper and card. • Use simple finishing techniques suitable for the product they are creating. **Evaluating** • Explore a range of existing books and everyday products that use simple sliders and levers. • Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. **Technical knowledge and understanding** • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project.
		Food - Fruit and Vegetables- Make a Fruit Cocktail • Explain basic food hygiene practices when handling food	**Food - Fruit and Vegetables - Make a Fruit Cocktail** Fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy,	**Food - Fruit and Vegetables – Make a Fruit Cocktail** **Designing** • Design appealing products for a particular user based on simple design criteria.

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	• Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **Cooking and Nutrition** • Use the basic principles of a healthy and varied diet to prepare dishes • Understand where food comes from.	including the importance of following instructions • Explain how to use simple utensils eg. Food-processing skills such as washing, grating, peeling, slicing, squeezing • Explain about healthy eating, including eating more fruit and vegetables; the importance of fruit and vegetables in our balanced diet	sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria	• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. **Making** Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. Evaluating • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. **Evaluate** • Evaluate ideas and finished products against design criteria, including intended user and purpose. **Technical knowledge and understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate. • Know and use technical and sensory vocabulary relevant to the project.
Y2	**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	**Structures - Make a chair for baby Bear** • Describe what a free-standing structure is. • Explain which 3D shapes are the more stable than others. • Explain how to give a structure more strength • Explain which material was best for making a chair capable of holding Baby Bear. • Explain how to make improvements to a finished design.	**Structures - Make a chair for Baby Bear** Strength, stability, structure, fold, join, fix, weak, strong, base, top, side, surface, corner, point, straight, circle, triangular prism, square, rectangle, cuboid, cube, cylinder, design, make, evaluate, user, purpose, ideas, design criteria, product, function	**Structures - Make a chair for Baby Bear** **Designing** • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. **Making** • Plan by suggesting what to do next. • Select and use tools, skills and techniques, explaining their choices. • Select new and reclaimed materials and construction kits to build their structures. • Use simple finishing techniques suitable for the structure they are creating. Evaluating • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. **Evaluate** • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

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	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.			**Technical knowledge and understanding** • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project.
		Templates and joining- Making Puppets • Identify types of puppets including: finger puppets, body puppets, marionettes, rod puppets, shadow puppets and glove puppets. • Explain how different textiles can be joined together, for example – sewing and using adhesive tape. • Explain how to create a puppet using running stitch to in fabrics.	**Templates and joining – Making Puppets** Names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, design brief, design criteria, make, evaluate, user, purpose, function	**Templates and joining – Making Puppets** **Designing** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics. **Evaluating** • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria. **Technical knowledge and understanding** • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project.

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		Wheels and Axles- Design a vehicle with moving wheels and axles • Name a range of products that have wheels to move such as toys and everyday objects. • Explain how an axle turns a wheel. • Identify main parts of a moving vehicle – chassis, wheel, axle, axle holders, body. • Explain how to build a vehicle with wheels and axles.	**Wheels and Axles- Design a vehicle with moving wheels and axles** Vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, design, make, evaluate, purpose, user, criteria, functional	**Wheels and Axles - Design a vehicle with moving wheels and axles** **Designing** • Generate initial ideas and simple design criteria through talking and using own experiences. • Develop and communicate ideas through drawings and mock-ups. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. **Evaluating** • Explore and evaluate a range of products with wheels and axles. • Evaluate their ideas throughout and their products against original criteria. **Technical knowledge and understanding** • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project.

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Y3	**Design** • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces and computer-aided design **Make** • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** • Investigate and analyse a range of existing products	**Healthy and Varied Diet – Design and make a healthy sandwich or wrap for a packed lunch.** • Discuss what foods make up a healthy balanced diet. • Give examples of foods from different food groups and comment on properties • Explain where bread and bread products originate • Identify the source of ham, chicken, turkey, tuna, cheese. • Explain about the hygiene and safety requirements of food preparation e.g. clean surface, handwashing, food storage. • Discuss the importance of selecting and using appropriate utensils, eg knife, chopping board.	**Healthy and Varied Diet – Design and make a healthy sandwich or wrap for a packed lunch.** Pitta bread, loaf, sandwich, wrap, bread roll, brown, white, multigrain, fold, roll, spread, knife, spoon, bowl, cling film, chopping board, multi-surface cleaner, hygiene, cloth, butter, sweet, spicy, crunchy, smooth, sticky, moist dry, fresh, savoury, filling, frozen, processed, fresh, seasonal, healthy, varied diet.	**Healthy and Varied Diet – Design and make a healthy sandwich or wrap for a packed lunch.** **Designing** • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches to develop and communicate ideas. **Making** • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food products. **Evaluating** • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Technical knowledge and understanding** • Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately.

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	• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Apply their understanding of computing to program, monitor and control their products. **Cooking and Nutrition** • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.	**Structures – Shell structures (including using computer aided design -CAD) - Sandwich packaging for sales** • Create nets of simple 3D shapes, explaining how best to join edges. • Discuss choices of materials to give strength and durability in a design. • Explain how to use simple CAD process to create designs, using 2D shape tools	**Structures – Shell structures (including using computer aided design -CAD) - Sandwich packaging for sales** Shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype	**Structures – Shell structures (including using computer aided design - CAD) - Sandwich packaging for sales** **Designing** • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. **Making** • Plan the order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use finishing techniques suitable for the product they are creating. • Use computer-generated finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose. **Technical knowledge and understanding** • Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project

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		Textiles – 2D shape to 3D product - Egyptian themed wallet/ purse • Explain how to thread a needle • Name some simple stitches e.g. running stitch, back stitch, cross stitch. • Explain how to use a pattern to cut fabric of appropriate size allowing for seems. • Explain the purpose of a stitch (as a fastening, decorative.) • Name types of fabric e.g. cotton, linen, felt, polyester, silk, wool.	**Textiles – 2D shape to 3D product - Egyptian themed wallet/ purse** Fabric, names of fabrics, fastening, zip, velcro, button, structure, pattern, cross stitch, back stitch, running stitch, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces, applique, fabric pens, assemble, needles, threads, cotton, linen, felt, nylon	**Textiles – 2D shape to 3D product - Egyptian themed wallet/ purse** **Designing** • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produce annotated sketches, prototypes, final product sketches and pattern pieces. **Making** • Plan the main stages of making. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. **Evaluating** • Investigate a range of 3-D textile products relevant to the project. • Test their product against the original design criteria and with the intended user. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric. **Technical knowledge and understanding** • Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project.
Y4	**Design** • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces and computer-aided design	**Mechanical Systems – Levers and Linkages - Christmas Card with Moving parts.** • Name everyday products that use levers • A lever is a rigid bar which moves around a pivot • A linkage is where one or more levers are joined together to produce the type of movement required • A loose pivot is a paper fastener that joins cards and strips together	**Mechanical Systems – Levers and Linkages- Christmas Card with Moving parts.** Mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, user, purpose, function, prototype, appealing, design criteria	**Mechanical Systems – Levers and Linkages -Christmas Card with Moving parts.** **Designing** • Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas. **Making** • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. • Select from and use finishing techniques suitable for the product they are creating.

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	Make • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** • Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits	• A fixed pivot is a paper fastener that joins card strips to the backing system • Identify the input and the output of the mechanism **Mechanical Systems – Pneumatics– Iron Man with pneumatic mechanism** • Explain how a pneumatic mechanisms work using compressed air • Give real life examples of pneumatic mechanisms • Explain how to join and combine materials to make the pneumatic mechanism work • Identify the input and the output of the mechanism	**Mechanical Systems – Pneumatics – Iron Man with pneumatic mechanism** Components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener, pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight, linear, rotary, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate	**Evaluating** • Investigate and analyse books and, where available, other products with lever and linkage mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. **Technical knowledge and understanding** • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project. **Mechanical Systems – Pneumatics – Iron Man with pneumatic mechanism** **Designing** • Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas. **Making** • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. • Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and analyse books, videos and products with pneumatic mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. **Technical knowledge and understanding** • Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project

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	incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products.	**Electrical Systems – simple circuits and switches (including programming and control) – Night Light (Science Link)** • Explain different ways to operate a switch (e.g. when you press them, when you turn them, when you push them from side to side.) • Explain/ Identify the input and the output of the circuit • Explain how to find a fault in a circuit	**Electrical Systems – simple circuits and switches (including programming and control) – Night Light (Science Link)** Series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, user, purpose, function, prototype, design criteria, innovative, appealing, design brief	**Electrical Systems – simple circuits and switches (including programming and control) – Night Light (Science Link)** **Designing** • Gather information about needs and wants and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. **Evaluating** • Investigate and analyse a range of existing battery-powered products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Technical knowledge and understanding** • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project.

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<table>
<tr>
<td rowspan="2">Y5</td>
<td rowspan="2"><u>Design</u>
• Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
• Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces and computer-aided design
<u>Make</u>
• Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
• Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
<u>Evaluate</u>
• Investigate and analyse a range of existing products
• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
• Understand how key events and individuals in design and technology have helped shape the world

<u>Technical knowledge</u>
• Understand and use mechanical systems in their products [for</td>
<td><u>Mechanical Systems – Cams– Moving Toy</u>
• Children to comment on the movement of pre-cut cams & followers made from MDF or wooden wheels.
• Explain the importance of measuring, marking, cutting, shaping and joining accurately
• Explain how to use a junior hacksaws, G-clamps, and hand drills (including health and safety)</td>
<td><u>Mechanical Systems – Cams – Moving Toy</u>
Cam, snail cam, off-centre cam, peg cam, pear shaped cam follower, axle, shaft, crank, handle, housing, framework rotation, rotary motion, oscillating motion, reciprocating motion annotated sketches, exploded diagrams mechanical system, input movement, process, output movement design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief</td>
<td><u>Mechanical Systems – Cams – Moving Toy</u>
<u>Designing</u>
• Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.
• Develop a simple design specification to guide their thinking.
• Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.
<u>Making</u>
• Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
• Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.
<u>Evaluating</u>
• Compare the final product to the original design specification.
• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
• Consider the views of others to improve their work.
• Investigate famous manufacturing and engineering companies relevant to the project.
<u>Technical knowledge and understanding</u>
• Understand that mechanical systems have an input, process and an output.
• Understand how cams can be used to produce different types of movement and change the direction of movement.
• Know and use technical vocabulary relevant to the project.</td>
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<td><u>Textiles – Combining different fabric shapes/ using computer aided design (CAD) in textiles-Felt Rainforest Creatures</u>
• Explain the skills of threading needles and joining textiles using a range of stitches.
• Explain what a seam is - sewing textiles by joining right side together.
• Explain how/why we make a 2-D paper pattern using grid or tracing paper.
• Explain what computer-aided design (CAD) is (using on-line pattern making software to generate patterns).</td>
<td><u>Textiles-combining different fabric shapes / using computer aided design (CAD) in textiles-Felt Rainforest Creatures</u>
Seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype, computer aided design (CAD), computer aided manufacture (CAM) font, lettering,</td>
<td><u>Textiles – Combining different fabric shapes/ using computer aided design (CAD) in textiles -Felt Rainforest Creatures</u>

<u>Designing</u>
• Generate innovative ideas through research including surveys, interviews and questionnaires.
• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design.
• Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
<u>Making</u>
• Produce detailed lists of equipment and fabrics relevant to their tasks.
• Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</td>
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	example, gears, pulleys, cams, levers and linkages] • Apply their understanding of computing to program, monitor and control their products.		text, graphics, menu, scale, modify, repeat, copy, flip design brief, design criteria, design decisions, innovative	• Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. **Evaluating** • Investigate and analyse textile products linked to their final product. Compare the final product to the original design specification. • Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. **Technical knowledge and understanding** • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.
		Mechanical Systems: Pulleys & Gears– Fairground Ride • Explain what effects a pulleys direction and speed of rotation • Explain how a gear mechanism works (Direction/ speed of rotation/ the size of the gear). • Discuss the different skills they have used and why (Measuring, marking, cutting, shaping and joining skills using junior hacksaws, G-clamps, and hand drills) • Discuss which mechanism they used/ why and discuss the making process including tools/equipment.	**Mechanical Systems: Pulleys & Gears– Fairground Ride** Pulley, drive belt, gear, rotation, spindle, driver, follower, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, input, process, output design decisions, functionality, innovation, user, purpose, design specification, design brief	**Mechanical Systems: Pulleys & Gears – Fairground Ride** **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. **Evaluating** • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. • Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.

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Y6	**Design** • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces and computer-aided design **Make** • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** • Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** • Apply their understanding of how to strengthen, stiffen and	**Structures – frame structures– Anderson Shelters** • Explain how to strengthen, stiffen and reinforce 3-D frameworks. • Explain the meaning of some technical vocabulary relevant to the project. (eg. Triangulation, strengthening) • Name techniques for building frame structures: joining straws, joining thin sectioned pieces of wood and understanding triangulation. •	**Structures – frame structures– Anderson Shelters** Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional	**Structures – frame structures – Anderson Shelters** **Designing** • Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **Making** • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Research key events and individuals relevant to frame structures. **Technical knowledge and understanding** • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project.
		Food – celebrating culture and seasonality– Bread • Explain how to use utensils and equipment including heat sources to prepare and cook food. • Discuss seasonality in relation to food products and the source of different food products.	**Food – celebrating culture and seasonality– Bread** Ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out,	**Food – celebrating culture and seasonality – Bread** **Designing** • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas and make design decisions to develop a final product linked to user and purpose.

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	reinforce more complex structures • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products. **Cooking and Nutrition** • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.	• Explain the meaning of relevant technical and sensory vocabulary. (eg. Recipe specification, measuring) • Name techniques that could be used: mixing to combine ingredients if making savoury muffins or scones; rubbing in to mix fat and flour if making a yeast-based product; and/or kneading a bread dough.	shape, sprinkle, crumble design specification, innovative, research, evaluate, design brief	• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. **Making** • Write a step-by-step recipe, including a list of ingredients, equipment and utensils. • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. **Evaluating** • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations - e.g. using tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. **Technical knowledge and understanding** • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary
		Electrical systems – monitoring and control & more complex switches and circuits– Steady Hand Game • Explain how an electrical systems has been used in the final product. • Discuss the use of computer control systems in products. • Explain the meaning of technical vocabulary relevant to the project. (eg. Circuits, switches, conductor) • Name some different types of switches and sensors – e.g.	**Electrical systems – monitoring and control & more complex switches and circuits – Steady Hand Game** Reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit function, innovative, design specification, design brief, user, purpose	**Electrical systems – monitoring and control & more complex switches and circuits – Steady Hand Game** **Designing** • Develop a design specification for a functional product that responds automatically to changes in the environment. • Take account of constraints including time, resources and cost. • Generate, develop and communicate innovative ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit diagrams. **Making** • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.

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		latching switch, micro-switch, push-to-make switch, push-to-break switch, reed switch, tilt switch, toggle switch, light dependent resistor (LDR)		• Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. • Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. **Evaluating** • Continually evaluate and modify the working features of the product to match the initial design specification. • Test the system to demonstrate its effectiveness for the intended user and purpose. • Investigate famous inventors who developed ground-breaking electrical systems and components. **Technical knowledge and understanding** • Understand and use electrical systems in their products. • Understand the use of computer control systems in products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.