Design Technology Curriculum

Design Technology is an integral part of the curriculum here at St Mary's Bryanston Square.

The national curriculum for Design Technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Design Technology is a practical subject that encourages and develops originality, creativity and craftmanship. At St Mary's Bryanston Square, our Design Technology curriculum aims to provide all children with stimulating and engaging opportunities to use their imagination, explore ideas and work creatively in an enjoyable and safe environment.

It is our intent to provide all of our children with a high-quality education in Design Technology which:

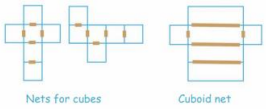
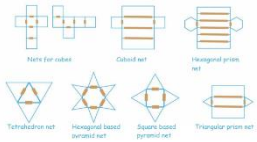
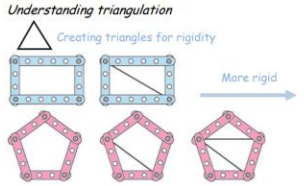
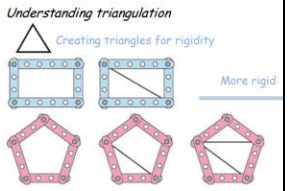
- Ensure that all pupils have full access to the requirements as set out in the National Curriculum for England
- Promotes an excellent attitude to learning and independent working and passion for the subject and knowledge of, up-to-date technological innovations in materials, products and systems.
- Pupils gain knowledge of materials, components, controls and structures.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- Develop levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- A thorough knowledge of which tools, equipment and materials to use to make their products.

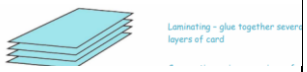
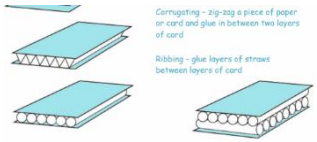
Through our work we aim to develop the following concepts within the subject of Design Technology: to master practical skills; to design, evaluate and improve and to take and use inspiration from designers from different periods, cultures and disciplines.
The aims of the National Curriculum for Design Technology, are used as the basis for our work in this subject area. To read the rest of our policy on Design Technology, please see our school website: https://www.stmarys.bryanston.net/

	Topic 1	Topic 2	Topic 3	Topic 4
Year 1	**Freestanding Structures: (Make a Bridge)**	**Slider & Levers: (Make a moving picture)**	**Textiles: Templates & Joining (Make a hand puppet)**	**Food: Preparing Fruits & Vegetables** - Stuffed jacket potato - Biscuits - Fruit salad
Year 2	**Freestanding Structures: (Make a boat)**	**Wheels & Axles: (Make a Vehicle)**	**Textiles: Templates & Joining (Make a cushion)**	**Food: Preparing Fruit & Vegetables** - Pizza - Fruit Crumble - Cous Cous Salad
Year 3	**Shell Structures: (Make a cardboard gift box)**	**Levers & Linkages: (Make a greetings card)**	**Textiles: 2D shape to 3D product (Make a bendy bag)**	**Food: Healthy & Varied Diet** - Hummus and crudities - Blueberry and oat muffins - Fruit smoothies
Year 4	**Shell Structures: (Make a cardboard box greenhouse)**	**Textiles: 2D shape to 3D product (Make a mask)**	**Electricity- simple circuits & switches (Make a torch)**	**Food: Healthy & Varied Diet** - Mini carrot cakes - Mushroom and chickpea curry - Spring rolls
Year 5	**Frame Structures: (Make a bug house)**	**Pulleys & Gears: (Make a simple structure using pulleys/gears)** *i.e. a well/a bridge/ a crane*	**Textiles: Combining different fabric shapes (Make a pencil and notebook holder)** **Electricity: more complex switches (Make an electrical board game)**	**Food: Celebrating Culture and Seasonality** - Tuna Pasta bake - Vegetable Samosa - Fruit Scones
Year 6	**Frame Structures: (Make a model for the playground)**	**Pulleys & Gears: (Make a Fairground ride)**	**Textiles: Combining different fabric shapes (Make a kite)** **Electricity: more complex switches (Make an alarm for the school shed)**	**Food: Celebrating Culture and Seasonality** - Piri Piri Burgers with Mediterranean vegetables - Roasted butternut squash risotto - Chelsea buns

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

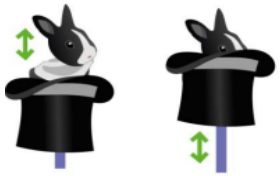
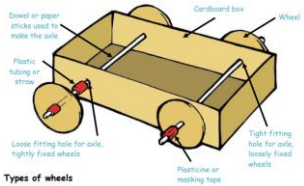
Structures	**Freestanding structures**  **Make a bridge** for the three billy goats gruff, or similar structure related to a story. Make chosen freestanding structure (eg bridge) using commercial construction kits. How can they be made stronger or stiffer in order to carry a load? Develop ideas through talking and drawing. Use paper or card folded in different	**Freestanding structures**   **Make a boat or a magic bed.** Make a bed or boat using construction kits. Are the models fit for purpose or can they be made more stable or hold a heavier load? Demonstrate measuring, marking out, cutting, shaping, joining and finishing techniques.	**Shell structures**  **Make a cardboard gift box.** Investigate different shell structures including packaging. What is the purpose of the shell structure? What material has it been made of? How has it been constructed? How has it been stiffened? How attractive is the design? Can the children take a package apart and identify and discuss the parts of a net and the tabs. Evaluate existing products and discuss effective designs.	**Shell structures**  **Make a cardboard box greenhouse.** Investigate different shell structures including packaging. What is the purpose of the shell structure? What material has it been made of? How has it been constructed? How has it been stiffened? How attractive is the design? Can the children take a package apart and identify and discuss	**Frame structures**  **Make a bug house.** Investigate different frame structures. Make annotated drawings of permanent and portable frame structures eg kites, tents, umbrellas, playhouses etc How well does the frame work? How has it been joined? What materials have been used? How has it been strengthened?	**Frame structures**  **Make a model for playground equipment. Or an air raid shelter.** Investigate different frame structures. Make annotated drawings of permanent and portable frame structures eg kites, tents, umbrellas, playhouses etc How well does the frame work? How has it been joined? What materials have been used? How has it been strengthened?

	ways to make freestanding structures. Use masking tape for joins. How can folding paper or card make it stronger and stiffer, stand up and be more stable? Evaluate ideas and final product against original design.	What materials will you use? How will you make it strong and stable? Develop ideas through class discussion, talking about the planning process and evaluation of the product at the end. Provide simple criteria, the bed must be raised off the floor and hold the weight of a doll for example. Children can make their final product (eg bed) from construction kits or new or reclaimed materials. Evaluate ideas and final product against original design.	Children use construction kits with flat faces to construct nets (eg Polydron) Practise making nets out of card, joining flat faces with masking tape to create 3D shapes.  Demonstrate skills and techniques of scoring, cutting out and assembling using pre-drawn nets. Practise by constructing a simple box. Show how a window could be cut out and acetate sheet added. Demonstrate how to use different ways of stiffening and strengthening their	the parts of a net and the tabs. Evaluate existing products and discuss effective designs. Children use construction kits with flat faces to construct nets (eg Polydron) Practise making nets out of card, joining flat faces with masking tape to create 3D shapes.  Demonstrate skills and techniques of scoring, cutting out and assembling using pre-drawn nets. Practise by constructing a simple box.	Use plastic construction strips and split pins to investigate  strengthening. Develop skills and techniques using junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames. Demonstrate skills and techniques for accurately joining framework materials together e.g. paper straws, square sectioned wood. Children should be encouraged to generate innovative ideas, drawing on their research. Ask children to develop a simple bug	Use plastic construction strips and split pins to investigate strengthening  Demonstrate how paper tubes can be made from rolling sheets of newspaper diagonally around pieces of e.g. dowel. Use these tubes and masking tape or paper straws with pipe cleaners to build 3-D frameworks such as cubes, cuboids and pyramids. How could each of the frameworks be reinforced and strengthened? Develop skills and techniques using

			shell structures by laminating.  Practise laminating card and carry out tests to find out where structures might need to be strengthened or stiffened. Discuss and explore the graphics that could be used to achieve the desired appearance of their products. Practise using computer-aided design (CAD) software to design the net, text and graphics for their products according to purposes. Develop a design brief which is authentic and meaningful. Discuss the uses and purposes of their shell	Show how a windows are cut out and acetate sheet added. Demonstrate how to use different ways of stiffening and strengthening their shell structures by corrugating and  ribbing. Practise corrugating and ribbing card. Carry out tests to find out where structures might need to be strengthened or stiffened. Discuss and explore the graphics that could be used to achieve the desired appearance of their products. Practise using computer-aided	house design specification to guide their thinking. Children should produce a detailed, step-by-step plan, listing tools and materials. Children's sketches should be annotated with notes to help develop and communicate their ideas. Encourage children to model their ideas first using materials such as paper, card and paper straws e.g. How will you make it stable? How will it stand up? How could you make it stronger? Where are the weak points? How could you reinforce them? What tools and materials will you need? How can you improve the design?	junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames. Demonstrate skills and techniques for accurately joining framework materials together e.g. paper straws, square sectioned wood. Children should be encouraged to generate innovative ideas, drawing on their research. Ask children to develop a piece of 'playground equipment' design specification to guide their thinking. Children should produce a detailed, step-by-step plan, listing tools and materials.

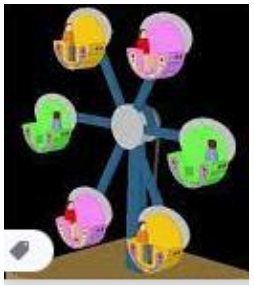
			structures e.g. What does the product need to do? Who is it aimed at? How will the purpose and user affect your design decisions? Use annotated sketches and prototypes to develop, model and communicate their ideas for the product e.g. What will you need to include in your design? How can you improve it? What materials will you use? How will you make sure your product works well and has the right appearance? Evaluate ideas and final product against original design.	design (CAD) software to design the net, text and graphics for their products according to purposes. Develop a design brief which is authentic and meaningful. Discuss the uses and purposes of their shell structures e.g. What does the product need to do? Who is it aimed at? How will the purpose and user affect your design decisions? Use annotated sketches and prototypes to develop, model and communicate their ideas for the product e.g. What will you need to include in your design? How can you improve it? What materials will you use? How will you make sure your product works well and has the right appearance?		Children's sketches should be annotated with notes to help develop and communicate their ideas. Encourage children to model their ideas first using materials such as paper, card and paper straws e.g. How will you make it stable? How will it stand up? How could you make it stronger? Where are the weak points? How could you reinforce them? What tools and materials will you need? How can you improve the design?

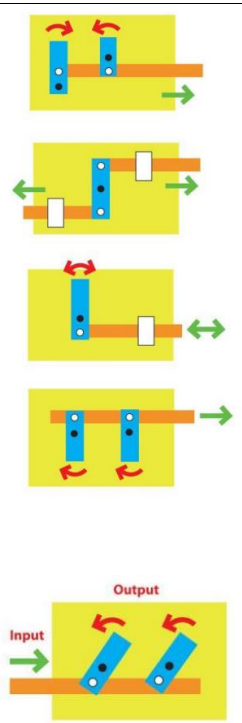
				Evaluate ideas and final product against original design.		

Mechanisms	**Sliders and levers** **Make a picture or page of a book using either a slider or a lever.**  Rabbit moves up and down  Look at books with moving parts and discuss who are the books for, what do the moving parts do and what are they for? Ask questions to develop understanding, what do you think will	**Wheels and axels** **Make a vehicle with wheels and axels.**  Look at and discuss wheeled toys. Use direct questioning to develop understanding eg.number, size, positioning, how are the wheels fixed on? How do you think the wheels move round? Why do you think the car has this number of wheels? Use a construction kit with wheels and axels and ask the children to make a vehicle that moves.				

	move? How will you make it move? What part moved and how well did it move? How does the mechanism work? Is there anything else which could move? Demostrate how a simple slider and lever works. Ask children to replicate this adding a simple picture. Ask further questions to develop understanding, how does the slider move? How does the lever move? Which part of the mechanism is the pivot? What do the movements of the sliders and levers remind you of? Discuss with the children that they will be making a moving picture that will use a slider or a	Demonstrate how wheels and axels may be assembled as either fixed or free axles. Show different axle holders, be clear that the axles run freely within the holders. Ensure children can mark, hold, cut and join materials and components correctly. Assemble some examples of wheel, axle, axle holder combinations.    Discuss the purpose and user for the vehicle. Ask the				

	lever which will work smoothly. Add a suitable picture to the mechanism. Encourage the children to develop their ideas through discussion and making a mock up. Discuss finishing techniques that may be used such as printed pictures, typed text, paint, felp pens, collage etc. As a class discuss the order when making the mechanisms. Ask the children to eveluate their developing ideas and final product against the original design.	children to share their ideas through talk and drawing. Evaluate ideas as a class. Make their vehicle with wheels and axles using their design ideas. Discuss finishing techniques. Evaluate the finished product, saying how well it works and how it matches their design criteria including any amendments they needed to make.				

Mechanical systems			**Levers and linkages** **Make a greeting card with a levered moving part.**  Investigate, analyse and evaluate books and, other products which have a range of lever and linkage mechanisms.		**Pulleys and gears**    Investigate, analyse and evaluate existing everyday products and existing or pre-made toys that incorporate gear or pulley systems. Use observational drawings and questions	**Pulleys and gears**   Investigate, analyse and evaluate existing everyday products and existing or pre-made toys that incorporate gear or pulley systems. Use observational drawings and questions to develop understanding of each product in the collection e.g. How innovative is the

			 Use questions to develop children's understanding e.g. Who might it be for? What is its purpose? What do you think will move? How will you make it move? What part moved and how did it move? How do you think the mechanism works? What materials have		to develop understanding of each product in the collection e.g. How innovative is the product? What design decisions have been made? What type of movement can be seen? What types of mechanical components are used and where are they positioned? What are the input, process and output of the system? How well does the product work? Why have the materials and components been chosen? How well has it been designed? How well has it been made? Using a construction kit, investigate combinations of two different sized pulleys to learn about direction and speed of rotation e.g. How many times does the smaller pulley turn each time the larger pulley turns once? Do the pulleys move in the same	product? What design decisions have been made? What type of movement can be seen? What types of mechanical components are used and where are they positioned? What are the input, process and output of the system? How well does the product work? Why have the materials and components been chosen? How well has it been designed? How well has it been made? Using a construction kit, explore combinations of two different size gears meshed together. Investigate the direction and speed of rotation focusing on how the size of the driver gear affects the speed of the follower gear. Ask the children to

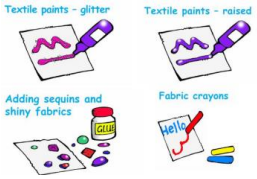
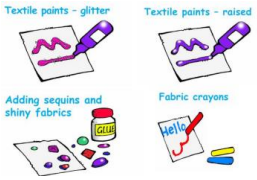
			been used? How effective do you think it is and why? What else could move? Demonstrate a range of lever and linkage mechanisms. Use questions to develop children's understanding e.g. Which card strip is the lever? Which card strip is acting as the linkage? Which part of the system is the input and which part the output? What does the type of movement remind you of? Which are the fixed pivots and which are the loose pivots? Demonstrate the correct and accurate use of measuring, marking out, cutting, joining and finishing skills and techniques. Children should develop their knowledge and skills		direction? How can you reverse the direction of rotation? Develop an authentic and meaningful design brief with the children. Children generate innovative ideas by carrying out research and develop a design specification for their product, carefully considering the purpose and intended user for their product. Communicate ideas through detailed, annotated drawings from different views and/or exploded diagrams. The drawings should indicate the design decisions made, including the location of the mechanical components, how they work as a system with an input, process and output, and the appearance and finishing techniques for the product.	use the number of teeth on each gear to decide upon the gear ratios e.g. 10 tooth driver gear meshed with a 20 tooth follower gear produces a ratio of 2:1 Build a working circuit that incorporates a battery, a motor and a handmade switch, such as a reversing switch. Demonstrate the accurate use of tools and equipment including cutting and stripping wire, and making secure electrical connections. Remind children about the dangers of mains electricity. Draw a pictorial representation of the circuit or draw a circuit diagram using correct symbols.

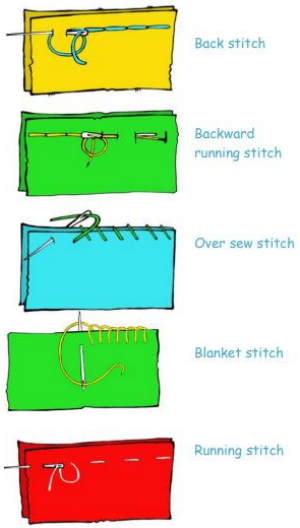
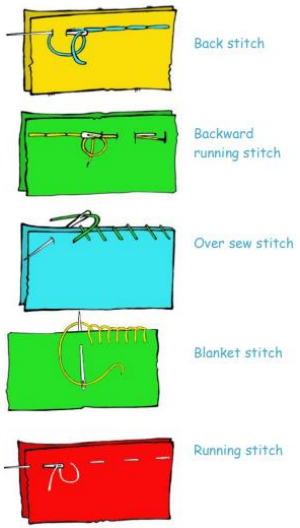
			by replicating one or more of the levers and linkages. Develop a design brief with the children within a context which is authentic and meaningful. Discuss the purpose of the products they will be designing and making and who the products will be for. Ask the children to generate a range of ideas, encouraging creative responses. Agree on design criteria that can be used to guide the development and evaluation of the children's products. Use annotated sketches and prototypes to develop, model and communicate their ideas.		Make high quality products, applying knowledge, understanding and skills. Children should use a range of decorative finishing techniques to ensure a well finished final product that matches the intended user and purpose. Evaluate throughout and the final product in use, comparing it to the original design specification.	Develop an authentic and meaningful design brief with the children. Children generate innovative ideas by carrying out research and develop a design specification for their product, carefully considering the purpose and intended user for their product. Communicate ideas through detailed, annotated drawings from different views and/or exploded diagrams. The drawings should indicate the design decisions made, including the location of the mechanical and electrical (motor) components, how they work as a system with an input, process and

			Evaluate the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.			output, and the appearance and finishing techniques for the product Produce detailed step-by-step plans and lists of tools, equipment and materials needed. Make high quality products, applying knowledge, understanding and skills. Use a range of decorative finishing techniques to ensure a well finished final product that matches the intended user and purpose. Evaluate throughout and the final product in use, comparing it to the original design specification. Critically evaluate the quality of the

						design, the manufacture, functionality, innovation shown and fitness for the intended user and purpose.

Textiles	**Templates and joining** **Suggested idea: make a simple hand puppet.**  Investigate and evaluate existing products (eg a simple hand puppet) How many parts is it made from? How is it finished? How is it fastened? Who might use it? Use a prepared sample to demonstrate the use of a template. Demonstrate the correct use of appropriate tools to mark out or tape the template to the fabric and cut out.	**Templates and joining** **Suggested idea: make a small**  **cushion.** Investigate and evaluate existing products (eg a cushion) How many parts is it made from? How is it finished? How is it fastened? Who might use it? Use a prepared sample to demonstrate the use of a template. Demonstrate the correct use of appropriate tools to mark out or tape the template to the fabric and cut out.	**2D shape to 3D product** **Suggested idea: make a bendy bag.**  Investigate a range of textile products that have a selection of stitches, joins, fabrics, finishing techniques, fastenings and purposes, linked to the product they will design. Provide opportunities to disassemble appropriate textiles products to gain an understanding of 3-D shape, patterns and seam allowances. Use questioning to develop understanding e.g. What is its	**2D shape to 3D product** **Suggested idea: make a mask.**  Investigate a range of textile products that have a selection of stitches, joins, fabrics, finishing techniques, fastenings and purposes, linked to the product they will design. Provide opportunities to disassemble appropriate textiles products to gain an understanding of 3-D shape, patterns and seam allowances. Use questioning to develop	**Combining different fabric shapes** **Suggested idea: make a pencil & notebook holder.**  Investigate, analyse and evaluate a range of existing products which have been produced by combining fabric shapes. Investigate and analyse how existing products have been constructed. Disassemble a product and evaluate what the fabric shapes look like, how the parts have been joined, how the product has been strengthen and stiffened, what fastenings have been used and why.	**Combining different fabric shapes** **Suggested idea: make a kite.**  Investigate, analyse and evaluate a range of existing products which have been produced by combining fabric shapes. Investigate work by designers and their impact on fabrics and products. Investigate and analyse how existing products have been constructed. Disassemble a product and evaluate what the

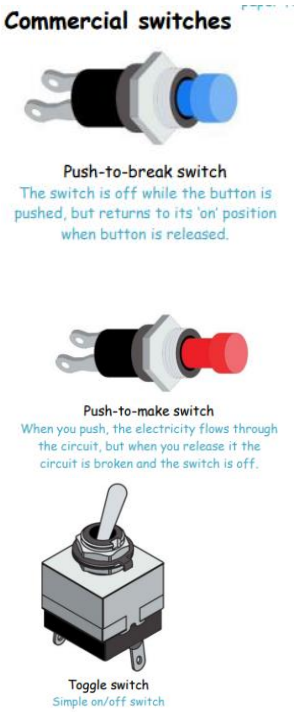
	Demonstrate a range of joining techniques: Stapling, taping, running stitch, lacing and gluing.  Demonstrate examples of finishing techniques: Sewing buttons, fabric paint, gluing sequins, printing.  Discuss with the class the purpose and product they are creating. Investigate fabrics to determine which is the best for the purpose.	Demonstrate a range of joining techniques: Stapling, taping, running stitch, lacing and gluing.  Demonstrate examples of finishing techniques: Sewing buttons, fabric paint, gluing sequins, printing.  Discuss with the class the purpose and product they are creating. Investigate fabrics to determine which is the best for the purpose.	purpose? Which one is most suited to its purpose? What properties/characteristics does the fabric have? Why has this fabric been chosen? How has the fabric been joined together? How effective are its fastenings? How has it been decorated? Does its decoration have a purpose? What would the 2-D pattern piece look like? What are its measurements? How might you change the product? Demonstrate a range of stitching techniques and allow children to practise sewing two small pieces of fabric together, demonstrating the use of, and need for, seam allowances.	understanding e.g. What is its purpose? Which one is most suited to its purpose? What properties/characteristics does the fabric have? Why has this fabric been chosen? How has the fabric been joined together? How effective are its fastenings? How has it been decorated? Does its decoration have a purpose? What would the 2-D pattern piece look like? What are its measurements? How might you change the product? Demonstrate a range of stitching techniques and allow children to practise sewing two small pieces of fabric together, demonstrating the use of, and need for, seam allowances.	Investigate properties of textiles through investigation e.g. exploring insulating properties, water resistance, wear and strength of textiles. Develop skills of threading needles and joining textiles using a range of stitches. Develop skills of sewing textiles by joining right side together and making seams. Learn how to start and finish off a row of stitches. Teach how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance Set an authentic and meaningful design brief. Communicate ideas through detailed, annotated drawings from different perspectives.	fabric shapes look like, how the parts have been joined, how the product has been strengthen and stiffened, what fastenings have been used and why. Investigate properties of textiles through investigation e.g. exploring insulating properties, water resistance, wear and strength of textiles. Develop skills of threading needles and joining textiles using a range of stitches. Develop skills of sewing textiles by joining right side together and making seams. Investigate how to sew and shape curved edges by snipping seams,

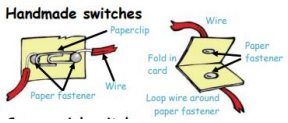
	Practise using a template and cutting out the fabric. Practise joining techniques as shown above. Practise finishing techniques as shown above. Evaluate ongoing work and the final products against the intended purpose and with the intended user, drawing on the design criteria agreed.	Practise using a template and cutting out the fabric. Practise joining techniques as shown above. Practise finishing techniques as shown above. Ask the children to generate ideas eg What parts will the product need? What will it be made from? What size will it be? How will it be joined and finished? Who will it be for? Discuss ideas, drawings and mock-ups. Use IT to help create symmetrical designs and pattern ideas. Evaluate ongoing work and the final products against the intended purpose and with the intended	 Allow children to use a textile product they have taken apart to create a paper pattern using 2-D shapes. Provide a range of fabrics – children to consider whether fabrics are suitable for the chosen purpose and user. Use questioning to develop understanding e.g. Which joining technique makes the strongest seam? Why? Which stitch is appropriate for the	 Allow children to use a textile product they have taken apart to create a paper pattern using 2-D shapes. Provide a range of fabrics – children to consider whether fabrics are suitable for the chosen purpose and user. Use questioning to develop understanding e.g. Which joining technique makes the strongest seam? Why?	Drawings should indicate design decisions made, the methods of strengthening, the type of fabrics to be used and the types of stitching that will be incorporated. Make high quality products applying knowledge, understanding and skills. Evaluate both as the children proceed with their work and the final product in use, comparing the final product to the original design specification.	how to tack or attach wadding or stiffening and learn how to start and finish off a row of stitches. Remind/teach how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance. Set an authentic and meaningful design brief. Communicate ideas through detailed, annotated drawings from different perspectives. Drawings should indicate design decisions made, the methods of strengthening, the type of fabrics to be used and the types of stitching that will be incorporated.

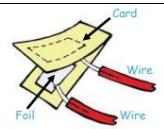
		user, drawing on the design criteria agreed.	purpose? Which joining techniques are suitable for the fabric and purpose? How can you stiffen your fabric? What is the purpose of the fastenings? Which one is most suited to the purpose and user? What decorative techniques have been used? What effect do they have? Set an authentic and meaningful design brief. Sketch and annotate a range of possible ideas. Assemble their product using their existing knowledge and skills. Evaluate as the process is undertaken and the final product in relation to the design brief and criteria.	Which stitch is appropriate for the purpose? Which joining techniques are suitable for the fabric and purpose? How can you stiffen your fabric? What is the purpose of the fastenings? Which one is most suited to the purpose and user? What decorative techniques have been used? What effect do they have? Set an authentic and meaningful design brief. Sketch and annotate a range of possible ideas. Assemble their product using their existing knowledge and skills. Evaluate as the process is undertaken and the final product in relation to the		Make high quality products applying knowledge, understanding and skills. Evaluate both as the children proceed with their work and the final product in use, comparing the final product to the original design specification.

			The product should be tested by the intended user and evaluated.	design brief and criteria. The product should be tested by the intended user and for its purpose and others' views sought to help with identifying possible improvements.		

Electrical systems				**Simple circuits and switches** **Suggested idea: make a torch.**  Discuss, investigate and, where practical, disassemble different examples of relevant battery-powered products. Investigate examples of switches, including those which are commercially available, which work in different ways e.g. push-to-make, push-to-break, toggle switch. Let the children use them in simple circuits e.g. How might different types of switches be useful in different types of products?	**More complex switches** **Suggested idea: make an electrical board game.** Using research, discuss a range of relevant products that respond to changes in the environment using a computer control program such as automatic nightlights, alarm systems, security lighting e.g. Who have the products been designed for and for what purpose? How and why is a computer control program used to operate the products? What input devices, e.g. switches, and output devices, e.g. bulbs, have been used? Investigate electrical sensors such as light dependent resistors (LDRs) and a range of switches such as push-to-make switches,	**More complex switches** **Suggested idea: make an alarm for the school shed.** Using research, discuss a range of relevant products that respond to changes in the environment using a computer control program such as automatic nightlights, alarm systems, security lighting e.g. Who have the products been designed for and for what purpose? How and why is a computer control program used to operate the products? What input devices, e.g. switches, and output devices, e.g. bulbs, have been used?

				 Recap with the children how to make manually controlled, simple series circuits with batteries and different types of switches, bulbs and buzzers. Discuss which of the components in the circuit are input devices e.g. switches, and which are output	push-to-break switches, toggle switches, micro switches and reed switches. To gain an understanding of how they are operated by the user and how they work, ask the children to use each component to control a bulb in a simple circuit. Remind children about the dangers of mains electricity. Demonstrate and enable children to practise methods for making secure electrical connections e.g. using automatic wire strippers, twist and tape electrical connections, screw connections and connecting blocks. Drawing on science understanding, ask the children to explore a range of electrical systems that could be used to control their products, including a simple series circuit	Investigate electrical sensors such as light dependent resistors (LDRs) and a range of switches such as push-to-make switches, push-to-break switches, toggle switches, micro switches and reed switches. To gain an understanding of how they are operated by the user and how they work, ask the children to use each component to control a bulb in a simple circuit. Remind children about the dangers of mains electricity. Demonstrate and enable children to practise methods for making secure electrical connections e.g. using automatic wire strippers, twist and tape electrical

				devices e.g. bulbs and buzzers. Demonstrate how to find a fault in a simple circuit and correct it, giving pupils opportunities to practise. Make a variety of switches by using simple classroom materials e.g. card, corrugated plastic, aluminium foil, paper fasteners and paper clips. Encourage children to make switches that operate in different ways e.g. when you press them, when you turn them, when you push them from side to side. Test their switches in a simple series circuit. 	where a single output device is controlled, a series circuit where two output devices are controlled by one switch and, where appropriate, parallel circuits where two output devices are controlled independently by two separate switches. Drawing on related computing activities, ensure that children can write computer control programs that include inputs, outputs and decision making. Test out the programs using electrical components connected to interface boxes or standalone boxes. Teach children how to avoid making short circuits. Develop an authentic and meaningful design brief with the children.	connections, screw connections and connecting blocks. Drawing on science understanding, ask the children to explore a range of electrical systems that could be used to control their products, including a simple series circuit where a single output device is controlled, a series circuit where two output devices are controlled by one switch and, where appropriate, parallel circuits where two output devices are controlled independently by two separate switches. Drawing on related computing activities, ensure that children can write computer control programs that include inputs,

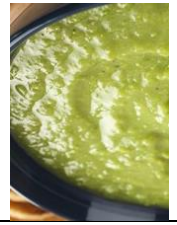
				 Develop a design brief within a context which is authentic and meaningful. Discuss the purpose of battery-powered products that they will be designing and making and who they will be for. Ask the children to generate a range of ideas, encouraging realistic responses. Agree on design criteria that can be used to guide the development and evaluation of the children's products, including safety features. Using annotated sketches, cross-sectional and exploded diagrams, as appropriate, ask the children to develop,	Ask the children generate innovative ideas by drawing on research and develop a design specification for their product, carefully considering the purpose and needs of the intended user. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. Drawings should indicate the design decisions made, including the location of the electrical components and how they work as a system with an input, process and output. Make high quality products, applying knowledge, understanding and skills. Create and modify a computer control program to enable the product to work	outputs and decision making. Test out the programs using electrical components connected to interface boxes or standalone boxes. Teach children how to avoid making short circuits. Develop an authentic and meaningful design brief with the children. Ask the children generate innovative ideas by drawing on research and develop a design specification for their product, carefully considering the purpose and needs of the intended user. Communicate ideas through annotated sketches, pictorial

				model and communicate their ideas. Consider the main stages in making and testing before assembling high quality products, drawing on their knowledge, understanding and skills Evaluate throughout and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.	automatically in response to changes in the environment. Critically evaluate throughout and the final product, comparing it to the original design specification. Test the system to demonstrate its effectiveness for the intended user and purpose.	representations of electrical circuits or circuit diagrams. Drawings should indicate the design decisions made, including the location of the electrical components and how they work as a system with an input, process and output. Make high quality products, applying knowledge, understanding and skills. Create and modify a computer control program to enable the product to work automatically in response to changes in the environment. Critically evaluate throughout and the final product, comparing it to the original design

						specification. Test the system to demonstrate its effectiveness for the intended user and purpose.
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Food	**Preparing fruit and vegetables** **Cooking and nutrition**	**Preparing fruit and vegetables** **Cooking and nutrition**	**Healthy and varied diet** **Cooking and nutrition**	**Healthy and varied diet** **Cooking and nutrition**	**Celebrating culture and seasonality** **Cooking and nutrition**	**Celebrating culture and seasonality** **Cooking and nutrition**

		Knife Skills	Weighing and Measuring	Baking Skills	Other Skills
Nursery	Ongoing Provision: Using playdough with knives, cutters. Filling containers with uncooked rice, pasta, lentils. Using cups, spoons, jugs and measuring containers in the sand and water areas. Using balance scales. Specific Food DT: Tasty toast. https://www.foodafactoflife.org.uk/recipes/3-5-years/tasty-toast/	Cutting playdough with utensils Cutting soft fruit and vegetables	Using measuring cups, spoons and jugs	Sieving All in one cake mixing Dividing mixture into tins Kneading Shaping Handling and folding Using cutters	Arranging ingredients Spreading Garnishing and decorating

	Mini fruit cakes. https://www.foodafactoflife.org.uk/recipes/11-14-l2c/mini-fruit-cakes/ Fruit kebabs. Use pre-prepared bite sized pieces of fruit. Children to assemble their own kebabs by selecting the combination of fruit they would like and threading onto their skewer.   				
Reception	Ongoing Provision: Using playdough with knives, cutters. Filling containers with uncooked rice, pasta, lentils. Using cups, spoons, jugs and measuring containers in the sand and water areas. Using balance scales. Specific Food DT: Great green soup. https://www.foodafactoflife.org.uk/recipes/3-5-years/great-green-soup/ Porridge. Use instant porridge sachets and children select pre-prepared fruit and honey. Gingerbread people.	Bridge knife technique – soft food Snipping herbs with scissors	Using measuring cups, spoons and jugs Use balance scales	Sieving Mixing in a bowl Using cutters Rolling out a mixture Glazing	Mashing Spreading with the back of a spoon Garnishing and decorating

	https://www.foodafactoflife.org.uk/recipes/5-11-years/gingerbread-people/   				
Year 1	Stuffed jacket potato. https://www.foodafactoflife.org.uk/recipes/potatoes/stuffed-jacket-potato/ Biscuits. https://www.foodafactoflife.org.uk/recipes/5-11-years/biscuits/ Fruit salad. https://www.foodafactoflife.org.uk/recipes/5-11-years/fruit-salad/   	Bridge knife technique – soft food Claw knife technique - soft food Snipping herbs with scissors	Using measuring cups, spoons and jugs to measure dry foods and liquids Use balance scales	Sieving Mixing in a bowl Scraping a bowl with a spatula Shaping Rolling out a mixture Glazing	Tearing eg. herbs Crumbling Scooping eg. baked potato Mashing Using a lemon squeezer Garnishing and decorating
Year 2	Picturesque pizza. https://www.foodafactoflife.org.uk/recipes/3-5-years/picturesque-pizza/ Peach and raspberry crumble. https://www.foodafactoflife.org.uk/recipes/11-14-l2c/apple-and-sultana-crumble/ Cous-cous salad.	Bridge knife technique – soft food Bridge knife technique – hard food Claw knife technique - soft food	Using measuring cups, spoons and jugs to measure dry foods and liquids Use balance scales	Sieving Cracking an egg Beating an egg Rubbing fat into flour Dividing mixture into tins	Tearing eg. herbs Crumbling Spreading with the back of a spoon and a table knife Scooping eg. baked potato Mashing

	https://www.foodafactoflife.org.uk/recipes/5-11-years/couscous/   	Snipping herbs with scissors Grating soft food		Mixing to form a bread dough Kneading Shaping	Using a lemon squeezer Garnishing and decorating
Year 3	Hummus and crudities. https://www.foodafactoflife.org.uk/recipes/5-11-years/hummus/ https://www.foodafactoflife.org.uk/recipes/5-11-years/veggie-snacks/ Blueberry and oat muffins. https://www.foodafactoflife.org.uk/recipes/breakfast/blueberry-and-oat-muffins/ Fruit smoothies. https://www.foodafactoflife.org.uk/recipes/food-life-skills/fruit-smoothie/   	Bridge knife technique – soft food Bridge technique – hard food Claw knife technique – soft food Claw knife technique – hard food Snipping herbs using scissors Peeling soft vegetables Grating soft food	Using measuring cups, spoons and jugs to measure dry foods and liquids Use digital or spring balance scales	Sieving Cracking an egg Beating an egg Rubbing fat into flour Adding liquid to flour Scraping a bowl with a spatula Dividing mixture into tins Kneading Shaping	Tearing eg. herbs Crumbling Crushing eg. garlic Spreading with the back of a spoon and a table knife Scooping eg. baked potato Mashing Using a lemon squeezer Draining through a sieve or colander Garnishing and decorating
Year 4	Mini carrot cakes. https://www.foodafactoflife.org.uk/recipes/11-14-l2c/mini-carrot-cakes/ Mushroom and chickpea curry. https://www.foodafactoflife.org.uk/recipes/5-11-years/mushroom-and-chickpea-curry/	Bridge technique – harder food Claw knife technique – soft food	Using measuring cups, spoons and jugs to measure dry foods and liquids	Sieving Cracking an egg Beating an egg Separating an egg	Tearing eg. herbs Crumbling Crushing eg. garlic Spreading with the back of a

	Simple spring rolls. https://www.foodafactoflife.org.uk/recipes/3-5-years/simple-spring-rolls/   	Claw knife technique – harder food Simple combination of bridge and claw – eg. onion Grating harder food – eg. carrot, apple	Use digital or spring balance scales	Rubbing fat into flour Adding liquid to flour Dividing mixture into tins Handling and folding pastry (filo, puff and shortcrust) Glazing	spoon and a table knife Scooping eg. baked potato Mashing Using a lemon squeezer Draining through a sieve or colander Garnishing and decorating Whisking Beating ingredients eg. salad dressing Garnishing and decorating
Year 5	Tuna pasta bake. https://www.foodafactoflife.org.uk/recipes/cereals/tuna-pasta-bake/ Vegetable samosas (without chilli). https://www.foodafactoflife.org.uk/recipes/food-life-skills/vegetable-samosas/ Fruit scones.	Bridge technique – harder food Claw knife technique – harder food Simple combination of bridge and claw – eg. onion Snipping herbs using scissors Peeling soft vegetables Grating harder food – eg. carrot, apple	Using measuring cups, spoons and jugs to measure dry foods and liquids Use digital or spring balance scales	Sieving Cracking an egg Beating an egg Separating an egg Mixing to from a bread dough Rubbing fat into flour Dividing mixture into tins Mixing to form a bread dough Kneading	Tearing eg. herbs Crumbling Crushing eg. garlic Spreading with the back of a spoon and a table knife Scooping eg. baked potato Coating Mashing Using a lemon squeezer

	https://www.foodafactoflife.org.uk/recipes/ks3-sow-2020/fruit-scones/   	Finer grating eg Parmesan cheese, nutmeg		Handling and folding pastry (filo, puff and shortcrust) Cutting rolled pastry Shaping Glazing	Draining through a sieve or colander Garnishing and decorating Whisking Beating ingredients eg. salad dressing Seasoning to taste Using the hob (with adult supervision) Garnishing and decorating
Year 6	Piri piri burgers with Mediterranean vegetables. https://www.foodafactoflife.org.uk/recipes/meat/new-meat-recipes/piri-piri-burgers-with-mediterranean-vegetables/ Roasted butternut squash risotto. https://www.foodafactoflife.org.uk/recipes/food-life-skills/roasted-butternut-squash-risotto/ Chelsea buns. https://www.foodafactoflife.org.uk/recipes/5-11-years/chelsea-buns/	Bridge technique – harder food Claw knife technique – harder food Simple combination of bridge and claw – eg. onion Snipping herbs using scissors Fine chopping of herbs Peeling hard vegetables Grating harder food – eg. carrot, apple	Using measuring cups, spoons and jugs to measure dry foods and liquids Use digital or spring balance scales	Sieving Cracking an egg Beating an egg Separating an egg Mixing to from a bread dough Rubbing fat into flour Dividing mixture into tins Mixing to form a bread Dough Folding flour into a creamed mixture	Tearing eg. herbs Crumbling Crushing eg. garlic Spreading with the back of a spoon and a table knife Scooping eg. baked potato Coating Mashing Using a lemon squeezer Draining through a sieve or colander

	  	Finer grating eg Parmesan cheese, nutmeg		Kneading Handling and folding pastry (filo, puff and shortcrust) Cutting rolled pastry Shaping Glazing	Garnishing and decorating Whisking Beating ingredients eg. salad dressing Shelling a hard boiled egg Seasoning to taste Using the hob (with adult supervision) Garnishing and decorating