Big idea	Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		AOL: Exp A&D Everyday products are objects that we use every day. These objects have a specific use. Name and explore a range of everyday products and begin to talk about how they are used.    Covered x 3   Optional x 4	and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose.	them easier to use, more	as nail clippers, the spinning top and the cool box. Explain how an existing product benefits the user.	emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable. Investigate and identify the design features of a familiar product.  covered x 6 optional x 2	group of people. A society is all the people in a community or group. Culture affects the design of some products. For example, knives and forks are used in the western world, whereas chopsticks are used mainly in China and Japan. The design of products needs to	People's lives have been improved in countless ways due to new inventions and designs. For example, the Morrison shelter, designed by John Baker in 1941, was an indoor air-raid shelter used in over half a million homes during the Second World War. It saved the lives of many people caught in bombing raids. Analyse how an invention or product has significantly changed or improved people's lives.  covered x 3 optional
		AOL: PSEDAOL: PD Rules keep us safe when using equipment. Safety rules include always listening carefully and following simple instructions, using equipment only for the tasks they are designed for and washing hands before touching food. Follow rules and instructions to keep safe.    Covered x 2   Optional	equipment only as and when directed, wearing protective	hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills. Work safely and hygienically in construction and cooking activities.	be used under the supervision of an adult. Safety rules must also be followed when using electricity: fingers and other objects must not be put into electrical outlets, anything with a cord or plug should never be used around water and a plug should never be pulled out by its cord. Use appliances safely with adult supervision.	cleaning products, such as bleach and disinfectant, but also paints, glues, oils, pesticides and medicines. Most chemical products carry a hazard symbol showing in what way the chemical could be harmful.  Chemicals should only be used	examples include the child- safety caps on medicine bottles, seatbelts in cars, covers for electrical sockets and finger guards on doors. Explain the functionality and purpose of safety features on a range of products. covered	The safety of the user has to be taken into account when designing a new product. Methods to help keep users safe include providing clear instructions for use; clear indication of the age range for which it is designed; safety features (such as child-resistant packaging); warning symbols and electrical safety checks. Demonstrate how their products take into account the safety of the user. covered
	movement	AOL: Exp A&D Vehicles and machines have wheels and axles to help them move. Explore, build and play with a range of resources and construction kits with wheels and axles.    Covered x 9   Optional x 2	Use wheels and axles to make a simple moving model. covered x 2	and produces a different one. A mechanism makes a job easier to do. Mechanisms include sliders, levers, linkages, gears, pulleys and cams. Use a range of mechanisms (levers, sliders, wheels and axles) in models or products.	side to side or up and down, and are often used to make moving parts in books. Axles are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular motion into up-and-down	example, sliders or levers can be used in moving pictures, storybooks or simple puppets; linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars or transport systems	compressed air to do work, such as inflating a balloon to open a model monster's mouth. These effects can be achieved	Mechanical systems can include sliders, levers, linkages, gears, pulleys and cams. Other mechanisms include pneumatics and hydraulics. Explain and use mechanical systems in their products to meet a design brief. optional

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					axles, wheels and cams) in models or products. covered x 3 optional	models or products. covered x 3 optional		
		AOL: Exp A&D Many appliances at home and school need electricity to work. The appliances need to be attached to electricity through a plug and socket, or use batteries. Identify products that use electricity to make them work.      covered optional	televisions and washing machines. They can be switched on by completing the circuit to allow the flow of electricity or off by	electricity to flow. Create an	in a model, such as a lighthouse. It can be controlled using a switch.	for burglar alarms and electronic games, motors for fairground	switch, or by a variable resistor that can adjust the size of the current in the circuit. Real-life examples are a dimmer switch for lights or volume control on a stereo. Use electrical circuits of	components (switches, lamps, buzzers and motors) and use
Creativity		AOL: Exp A&D Create collaboratively, share ideas and use a variety of resources to make products inspired by existing products, stories or their own ideas, interests or experiences. covered x 30 optional x 16	goals that a project must achieve. Create a design to meet simple design criteria. covered x 4	diagrams, modelling, speaking		communicate ideas in a visual,	packages to design a product. covered	• Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.
		AOL: Exp A&D Different materials have different properties and can be used for different purposes. Construct simple structures and models using a range of materials.  covered x 28 optional x 12	depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.	by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable. Explore how a structure can be made stronger,	Shell structures are hollow, 3-D structures with a thin outer covering, such as a box. Frame structures are made from thin, rigid components, such as a tent frame. The rigid frame gives the structure shape and support. Diagonal struts can strengthen the structure. Create shell or frame structures using diagonal struts to strengthen them.    Covered   Covered	materials. Shell and frame structures can be strengthened by gluing several layers of card	These include cross braces, guy ropes and diagonal struts. Frameworks can be built using lolly sticks, skewers and bamboo canes. Build a framework using a range of materials to support mechanisms.  covered x 3	• Strength can be added to a framework by using multiple layers. For example, corrugated cardboard can be placed with corrugations running alternately vertically and horizontally. Triangular shapes can be used instead of square shapes because they are more rigid. Frameworks can be further strengthened by adding an outer cover. Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.
		<ul> <li>AOL: Exp A&amp;D Digital devices can be used to share information about creations with others. Use digital devices to take digital images or recordings of their</li> </ul>	advantages over paper design in that it will show how finished	product. Advantages include identifying and solving problems	A program is a set of instructions written to perform a specified task on a computer. Write a program to make something move on a tablet or	<ul> <li>Remote control is controlling a machine or activity from a distance. Computers can be used to remotely control a device, such as a light, speaker or buzzer.</li> <li>Write a program to control a</li> </ul>	be controlled by pressing buttons on a control panel, such as on a washing machine or microwave. Link a physical	<ul> <li>Computer monitoring uses sensors as a scientific tool to record information about environmental changes over time. Computer monitoring can also log data from sensors and</li> </ul>

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		creations to share with others.  covered optional x 2	colours and textures can also be trialled. Use design software to create a simple plan for a design. Assign	materials and colours. Labels can be added to designs for clarity. Use design software to create a simple labelled design or plan. Assign	computer screen.  optional	covered x 2 optional	or turning an LED on and off) by a program.	record the resulting information in a table or graph. Use a sensor to monitor an environmental variable, such as temperature, sound or light.
Investigation		AOL: PD Different tools are needed for different tasks. For example, pencils and paper are needed for drawing pictures. Choose and explore appropriate tools for simple practical tasks.      covered x 11 optional x 7	glue is used for sticking. Select the appropriate tool for a simple practical task. covered optional	suitable for specific purposes. For example, scissors are used for cutting paper because they have sharp, metal blades that can cut through thin materials. Select the appropriate tool for a task and explain their choice.  covered x 4 optional x 2	be joined using glue, nails, staples, or a combination of these. Safety rules must be followed to prevent injury from sharp blades. These rules include using a bench hook to keep the	bench hooks. Useful tools for joining include glue guns. Tools should only be used with adult supervision and safety rules must be followed. Select, name and use tools with adult supervision. covered	using tools safely and these may vary depending on the tools being used. For example, someone using a chisel should chip or cut with the cutting edge pointing away from their	
		• AOL: Exp A&D Recognise that it is possible to change and alter their designs and ideas as they are making them. Adapt and refine their work as they are constructing and making.  covered x 6 optional x 8	a piece of work. A weakness is an area that could be improved. Talk about their own and each other's work, identifying strengths or weaknesses and offering support.	see how closely they match. Improvements can then be planned. Explain how closely their finished products meet their design criteria and say what they could do better in the future. covered x 4	such as asking them whether the selected materials achieved the purpose of the model. Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.  covered x 4 optional	does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be	anything that needs improvement or redesign. Changes are often made to a design during manufacture. Test and evaluate products against a detailed design specification and make adaptations as they develop the product.	Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process.  Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.  Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.  covered x 3 optional x 2
	Cutting and joining textiles		running stitch, can be used to join fabrics. Running stitch is made by passing a needle in and out of fabric at an even distance. Cut	stitch that is used to join fabric. It is made by passing a needle in and out of fabric at an even distance. Use different methods of joining fabrics, including glue and running stitch.	that is used for making fabric by weaving wool or thread. Weaving involves interlacing pieces of	made by turning under a raw edge and sewing to give a neat and quality finish. Hand sew a hem or seam using a running stitch.	background. A mixed media collage is made using various materials and media, such as	Pinning with dressmaker pins and tacking with quick, temporary stitches holds fabric together in preparation for and during sewing. Pin and tack fabrics in preparation for sewing and more complex pattern work. covered x 2
		AOL: Exp A&D Different materials are suitable for different purposes, such as construction kits for modelling and ingredients for baking. Select appropriate materials when constructing and making. covered x 6 optional x 17	for different purposes, depending on their specific properties. For example, glass is transparent, so it is suitable to be used for windows. Select and use a range of materials, beginning to explain their choices.  covered x 2 optional x 2	can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint. Choose appropriate components and materials and	availability and cost. Plan which materials will be needed for a task and explain why.	properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design	sewn together using a variety of stitching techniques. Select and combine materials with precision.	It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability. Choose the best materials for a task, showing an understanding of their working

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						showing an understanding of their different characteristics. covered x 5 optional x 4		characteristics. covered x 4 optional x 3
	Decorating and embellishing textiles		as buttons and sequins. Decorations can be attached to	II .	• A loom weaving is a piece of fabric that has been woven on a loom by interlacing threads. An embellishment is a decorative detail or feature, such as a silk flower, tassel or bow, added to something to make it more attractive. Decorate a loom weaving using embellishments, such as natural or silk flowers, tassels and bows.	fabrics. Create detailed	<ul> <li>Applique is a technique where pieces of material are attached to another material by stitching or gluing. Use applique to add decoration to a product or artwork. covered</li> </ul>	• Fastenings hold a piece of clothing together. Types of fastenings include zips, press studs, Velcro and buttons. Use different methods of fastening for function and decoration, including press studs, Velcro and buttons.
Nature	and cooking	a dish and includes a list of the ingredients required. Follow instructions, including simple recipes, that include measures and ingredients.  covered x 8 optional	may be measured in the number of handspans or pencils laid end to end. Measure and weigh food items using non-standard measures, such as spoons and cups.	• Some ingredients need to be prepared before they can be cooked or eaten. There are many ways to prepare ingredients: peeling skins using a vegetable peeler, such as potato skins; grating hard ingredients, such as cheese or chocolate; chopping vegetables, such as onions and peppers and slicing foods, such as bread and apples. Prepare ingredients by peeling, grating, chopping and slicing.	Preparation techniques for savoury dishes include peeling, chopping, deseeding, slicing, dicing, grating, mixing and skinning. Prepare and cook a simple savoury dish. covered x 3	a simple meal or snack.	pies and trifles. Savoury dishes usually have a salty or spicy flavour rather than a sweet	• Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual prepared foods, as well as cold meats and cheeses. Follow a recipe that requires a variety of techniques and source the necessary ingredients independently. covered x 3
		foods. Fruit and vegetables are an important part of a healthy diet. Suggest healthy ingredients that can	eat at least five portions of fruit and vegetables every day. Select healthy ingredients for a fruit or vegetable salad. covered	as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables. Describe the types of food needed for a healthy and varied	• There are five main food groups that should be eaten regularly as part of a balanced diet: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads). Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet. Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars). covered			Eating a balanced diet is a positive lifestyle choice that should be sustained over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet. Plan a healthy daily diet, justifying why each meal contributes towards a balanced diet.      covered
		including from animals, such as meat, fish, eggs and dairy, or from plants, such as fruit and vegetables. Begin to identify the origins of some	dairy products. Other foods come from plants, such as fruit, vegetables, grains, beans and nuts. Sort foods into groups by whether they are from an animal or plant source.	provide lamb and mutton and pigs provide pork, ham and bacon. Examples of poultry include chickens, geese and turkeys. Examples of fish include cod, salmon and shellfish. Milk comes mainly from cows but also	• The types of food that will grow in a particular area depend on a range of factors, such as the rainfall, climate and soil type. For example, many crops, such as potatoes and sugar beet, are grown in the south-east of England. Wheat, barley and vegetables grow well in the east of England. Identify and name foods that are produced in different places.	California in the United States of America. Identify and name foods that are produced in different places in the UK and beyond. covered	• Seasonality is the time of year when the harvest or flavour of a type of food is at its best. Buying seasonal food is beneficial for many reasons: the food tastes better; it is fresher because it hasn't been transported thousands of miles; the nutritional value is higher; the carbon footprint is lower, due to reduced transport; it supports local growers and is usually cheaper. Describe what seasonality	Organic produce is food that has been grown without the use of man-made fertilisers, pesticides, growth regulators or animal feed additives. Organic farmers use crop rotation, animal and plant manures, handweeding and biological pest control. Explain how organic produce is grown.

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				Oils are made from parts of plants. Sugar is made from plants called sugar cane and sugar beet. Plants also give us nuts, such as almonds, walnuts and hazelnuts. Identify the origin of some common foods (milk, eggs, some meats, common fruit and vegetables).			means and explain some of the reasons why it is beneficial.  covered x 3 optional x 4	
II		compared with others,	criteria and scoring both products against each one. Describe the similarities and differences between two products.  covered x 2 optional	characteristics of each and deciding which is better suited to the purpose. Compare different or the same products from the same or different brands.	and target market. Explain the similarities and difference	listing specific criteria on which each product can be judged or scored. Create and complete a comparison table to compare two or more products.	reactions and opinions about a product are taken and studied. Evaluations can be made by	society, ease of use, appearance and value for money. Create a detailed comparative report about two or more products or inventions.
Significance	people	AOL: Exp A&D Some products are significant because they have changed the way people live their lives. Explore significant products.  covered x 2	performs a useful purpose. Describe why a product is important. covered optional	designers, inventors and many other people in important roles.	Key inventions in design and technology have changed the way people live. Describe how key events in design and technology have shaped the world.      covered optional	covered x 3 optional	For example, labour-saving devices in the home reduced the amount of housework, which was traditionally done by women. This enabled them to have jobs. Describe the social influence of a significant designer or inventor.	The significance of a designer or inventor can be measured in various ways. Their work may benefit society in health, transport, communication, education, the built environment or technology. It may enhance culture in different areas, such as fashion, ceramics or computer games. Present a detailed account of the significance of a favourite designer or inventor.