Year 6 DT Step Up 2022-23

Aspect	Year 5	Year 6
Everyday products	Culture is the language, inventions, ideas and art of a 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 take into account the culture of the target audience. For example, colours might mean very different things in different cultures. Explain how the design of a product has been influenced by the culture or society in which it was designed or made. covered x 3	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. (DT 1) covered x 3 optional
Staying safe	Safety features are often incorporated into products that might cause harm. Some 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. (DT 2) covered
Mechanisms and movement	Pneumatic systems use energy that is stored in compressed air to do work, such as inflating a balloon to open a model monster's mouth. These effects can be achieved using syringes and plastic tubing. Use mechanical systems in their products, such as pneumatics. covered x 3 optional x 2	
Electricity	Electrical circuits can be controlled by a simple on/off 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 increasing complexity in their models or products, showing an understanding of control. covered	Computer programs can control electrical circuits that include a variety of components, such as switches, lamps, buzzers and motors. Understand and use electrical circuits that incorporate a variety of components (switches, lamps, buzzers and motors) and use programming to control their products. (DT 3) covered x 2 optional
Generation of ideas	A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products. Use pattern pieces and computer-aided design 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. (DT 4) covered x 2
Structures	Various methods can be used to support a framework. 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. (DT 5) covered x 2

Year 6 DT Step Up 2022-23

Use of ICT		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 record the resulting information in a table or graph. Use a sensor to monitor an environmental variable, such as temperature, sound or light. (DT 6) covered x 3
Investigation	There are many rules for 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 body. All tools should be cleaned and put away after use, and should not be used if they are loose or cracked. Name and select increasingly appropriate tools for a task and use them safely. covered	Precision is important in producing a polished, finished product. Correct selection of tools and careful measurement can ensure the parts fit together correctly. Select appropriate tools for a task and use them safely and precisely. (DT 7) covered x 2 optional x 2
Evaluation	Testing a product against the design criteria will highlight 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. covered x 3 optional x 2	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. (DT 8) covered x 3 optional x 2
Cutting and joining textiles	A collage is artwork made by sticking materials, such as scraps of paper or fabric, onto a background. A mixed media collage is made using various materials and media, such as ink and paint. Combine stitches and fabrics with imagination to create a mixed media collage. covered	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. (DT 9) covered x 2
Materials for purpose	Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques. Select and combine materials with precision. covered x 2 optional x 3	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 characteristics. (DT 10) covered x 4 optional x 3
Decorating and embellishing textiles	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	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. (DT 11) covered
Food preparation and cooking	Sweet dishes are usually desserts, such as cakes, fruit pies and trifles. Savoury dishes usually have a salty or spicy flavour rather than a sweet one. Use an increasing range of preparation and cooking techniques to cook a sweet or savoury dish. covered x 2 optional	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. (DT 12) covered x 3
Nutrition	A balanced diet gives your body all the nutrients it needs to function correctly. This means eating a wide variety of foods in the correct proportions. Evaluate meals	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

	and consider if they contribute towards a balanced diet. covered x 3 optional	towards a balanced diet. (DT 13) covered
Origins of food	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 means and explain some of the reasons why it is beneficial. covered x 3 optional x 4	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, hand-weeding and biological pest control. Explain how organic produce is grown. (DT 14) covered
Compare and contrast	A focus group is a small group of people whose reactions and opinions about a product are taken and studied. Evaluations can be made by asking product users a selection of questions to obtain data on how the product has met its design criteria. Survey users in a range of focus groups and compare results. covered	Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money. Create a detailed comparative report about two or more products or inventions. (DT 15) covered x 4
Significant people	Many new designs and inventions influenced society. 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. covered	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. (DT 16) covered