DT at Sherwood



Intent

At Djanogly Sherwood Academy, our intent, when teaching design and technology, is to engage and inspire children as well as equipping them with the knowledge and skills to design, create and evaluate their own designs. Understanding of the practical elements of design and technology (drawing, measuring, cutting, joining etc) will be developed as well as learning about the different aspect of DT.



Implementation

Design and Technology is embedded as part of our curriculum themes which are intended to be fun, engaging and practical. In design and technology children will learn skills and techniques that will allow them to create prototypes and find the best way for their finished product. We use our progression of skills maps and our long term plans to ensure that the children are accessing a wide range of design experiences as well as gaining relevant skills that build upon each other so that they leave with a good knowledge of design and technology in the environment. In Early Years we teach design and technology through continuous provision and do this through the children's own interests and next steps. Design and technology is often not a standalone lesson and will be a process from design to the evaluation of a finished product and is used through other curriculum lessons.

Learning about the where food comes from, what food is healthy and basic skills in cooking will support children with fundamental skills for later in life.



Impact

At Djanogly Sherwood Academy, our Design and Technology curriculum aims to engage and inspire pupils while equipping them with the knowledge and skills to design, create, and evaluate their own work. Through a focus on practical elements like drawing, measuring, cutting, and joining, children gain the confidence to experiment and solve design challenges. By learning about various aspects of DT, including prototyping and refining ideas, pupils develop a comprehensive understanding of the design process.

The impact of our DT curriculum is evident in pupils' growing ability to think creatively and critically, applying their skills to practical tasks. Children progress through a structured curriculum that builds on previous learning, ensuring they develop a solid foundation in design and technology. They are encouraged to design and create products that are functional, aesthetically pleasing, and carefully evaluated. DT is not just about isolated lessons but is embedded throughout the wider curriculum, where design projects are linked to other subjects and real-life contexts.

In addition, children learn essential life skills such as understanding where food comes from, what constitutes a healthy diet, and basic cooking techniques. This practical knowledge not only supports their academic growth but prepares them with valuable skills for the future. By the end of their time at Djanogly Sherwood, pupils will have a strong grasp of design and technology, a creative mindset, and the practical skills to engage in problem-solving and innovation in various contexts.

We measure the impact of our curriculum through the use of curriculum assessment quizzes, which monitor retention of key knowledge, and through pupil voice, where children articulate their understanding and enthusiasm for history. Book monitoring enables us to evaluate the progression of skills and knowledge across year groups, ensuring high-quality outcomes.

School Vision

At Djanogly Sherwood Academy, we are an ambitious place that creates world-changers. We cultivate a lifelong love of learning, helping children discover their unique voices, empowering them to approach their future with the confidence to dream big. We are a place where everyone belongs; that prepares children to succeed.

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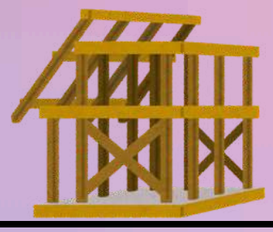
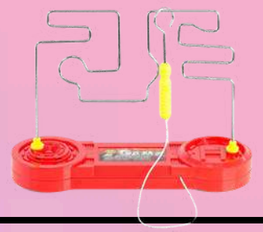
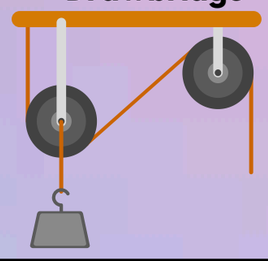
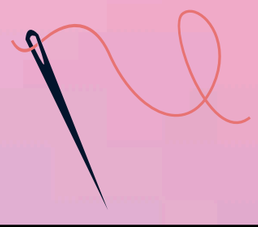
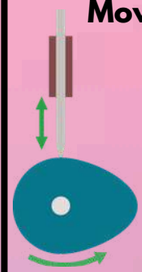
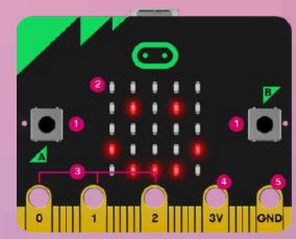
At Djanogly Sherwood Academy, our Design and Technology curriculum reflects our ambition to create world-changers by nurturing creativity, problem-solving, and practical life skills. Through designing, making, and evaluating, children are empowered to discover their unique voices as designers and thinkers. Our DT curriculum builds confidence through hands-on learning and encourages children to dream big by exploring innovative ideas and real-world challenges. As part of our inclusive and purposeful curriculum, DT ensures that every child belongs, is valued, and leaves with the knowledge, skills, and mindset to succeed.

National Curriculum

Our Design and Technology curriculum at Djanogly Sherwood Academy is fully aligned with the National Curriculum for England. It ensures that children develop the creative, technical, and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. Through carefully sequenced units, children learn to design, make, and evaluate purposeful products, drawing on disciplines such as mathematics, science, computing, and art. They are taught how to take risks, become resourceful, and develop innovative thinking—skills that are central to the aims of the National Curriculum. In line with statutory requirements, children also learn about healthy eating, food origins, and basic cooking techniques, giving them essential knowledge for life. Our curriculum ensures progression, builds on prior learning, and equips children with the knowledge and skills to become capable designers of the future.



DT Subject Map

	Adventurers A	Adventurers B	Pioneers A	Pioneers B	Trailblazers A	Trailblazers B
Autumn Term	Structures - Tinkerbell's chair 	Mechanisms - Wheels and Axles - London bus 	Electrical systems - steady hand games 	Structures - Shell structures - Packaging for a gift 	Food - Sweet and savoury pies 	Food - Curry and rice 
Spring Term	Mechanisms - Pulleys - Drawbridge 	Food - Making vegetable soup 	Food - Dosa 	Sewing - stiffening - wallets 	Mechanisms - Cams - Moving toy 	Structures - Frames - Bird hide 
Summer Term	Food - making a salad 	Sewing - Hand puppets 	Mechanisms - pneumatics- Moving Creature in a box toy 	Food - Flatbreads and dips 	Sewing - Fasteners - Tool belts 	Micro bit monitoring devices 

Long Term Curriculum Plan – DSH 2025-28

Drivers

- Geography
- History

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KS1 A	Dinosaur World	Dinosaur World	Castle Kingdom	Castle Kingdom	Pirate Perils	Pirate Perils
KS1 B	Exploring London	Exploring London	Exploring Nottingham	Exploring Nottingham	World Changers	World Changers
LKS2 A	Goose Fair	Tomb Raiders	The Spice of India	People of the Indus	Exploring Ancient Greece	Roaming in the Rainforest
LKS2 B	Stone to Bronze	Stone to Bronze	The Power of Community	Plastic Peril	Ancient Rome	Rising Fire
UKS2 A	Blitz Street	Blitz Street	Frozen Planet	Frozen Planet	The Golden Age of Islam	The Golden Age of Islam
UKS2 B	Biomes of Africa	Biomes of Africa	Industrial Revolution	Saxon Stories	Viking Sagas	The Big Apple



DT Threads

At Djanogly Sherwood Academy, our Design and Technology (DT) curriculum is organised into five clear threads: Structure, Cooking and Nutrition, Electrical Systems, Mecahnism, and Textiles. These threads support progression across year groups and allow children to revisit and build on key skills and knowledge over time. Alongside this, our DT curriculum develops disciplinary knowledge through four key stages: research and investigation, design, make and modify, and evaluate. These stages help children think like designers—asking questions, solving problems, improving their ideas, and reflecting on their outcomes. This approach encourages creativity, critical thinking, and an understanding of how design can improve everyday life.



Structure



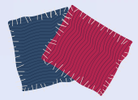
Cooking and Nutrition



Electrical Systems



Mechanisms



Textiles

Research and Investigate

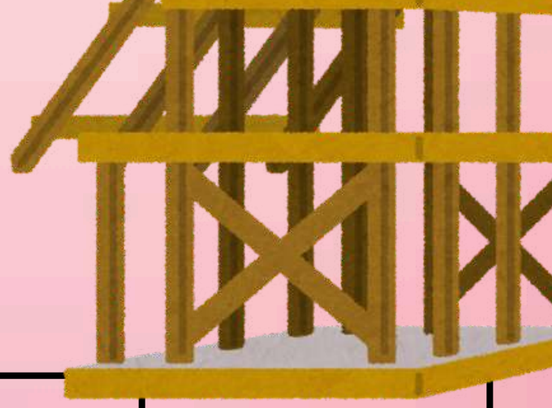
Design

Make and Modify

Evaluate



Structure



Substantive Knowledge

Disciplinary Knowledge

Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Using various construction materials; • Beginning to construct stacking blocks vertically and horizontally, making enclosures and creating spaces; • Joining construction pieces together to build and balance.	• Structures need to be stable to support weight. • Recognise different materials and their properties suitable for building a chair. • Identify basic joining techniques used in constructing simple structures. • Develop skills in measuring and cutting materials accurately. • Learn to follow a simple design plan to create a model. • Evaluate the stability and functionality of the constructed chair.	• Understand how wheels and axles work together to facilitate movement. • Recognise the importance of alignment in wheel and axle mechanisms. • Identify different types of vehicles and their wheel configurations. • Develop skills in assembling wheels and axles correctly. • Learn to make a simple vehicle model, such as a London bus. • Evaluate each type of vehicles and their wheel configuration		• Understand that a shell structure is a hollow, lightweight construction formed by creating a 3D shape from flat materials, commonly used in packaging to protect and contain items. • Recognise that a net is a two-dimensional (2D) representation of a three-dimensional (3D) shape, which, when folded along specific lines, forms the desired structure. • Identify the purpose of flaps (tabs) in a net, which are essential for joining edges together securely, ensuring the stability and integrity of the assembled structure. • Learn various techniques to stiffen and strengthen shell structures, such as laminating (gluing multiple layers together), corrugating (creating a wavy layer between flat sheets), and ribbing (adding supportive strips), to enhance durability and functionality. • Investigate and analyse existing packaging designs to understand how nets are constructed and how flaps are utilised for assembly. • Design a net for a gift package, incorporating appropriate flaps for joining and considering the dimensions and shape required to accommodate the gift securely.		• Triangulation involves using triangular shapes to strengthen structures by distributing forces evenly, enhancing rigidity and stability. • Butt Joints connect two pieces end-to-end. • Lap Joints overlap two pieces and fastening them together. • Mortise and tenon joints are made by inserting a protruding end (tenon) into a corresponding cavity (mortise) for a secure fit. • Analyse existing bird hides and frame structures to identify effective design elements and construction methods. • Evaluate the effectiveness of different joining techniques and the application of triangulation in enhancing structural integrity. • Apply knowledge of triangulation and joining methods to create a detailed design for a bird hide that meets specified criteria.



Electrical systems

Substantive Knowledge

Disciplinary Knowledge

Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
			• Understand that electrical systems consist of components such as power sources, conductors, and loads, which work together to form a complete circuit. • Recognise the difference between series and parallel circuits and their respective advantages and disadvantages. • Identify the role of a buzzer in a circuit and how it can be used as an indicator in games like the steady hand game. • Design a steady hand game, considering the target audience and creating both design and success criteria focusing on features of individual design ideas. • Identify and name the components required to build the game, including the power source, wires, buzzer, and conductive path. • Construct a stable base for the game, accurately cut, fold, and assemble a net, and decorate the base to a high-quality finish. • Assemble and test a functional series circuit, incorporating a buzzer, and incorporate the circuit into the base of the game.			• Understand that the BBC micro:bit is a programmable microcontroller equipped with various sensors, including accelerometer, light sensor, temperature sensor, and compass. • The micro:bit can be programmed to collect data from its sensors and respond to environmental changes. • Assemble a functional monitoring device using the micro:bit and additional components as needed. • Develop and refine programs to accurately collect and respond to sensor data. • Troubleshoot hardware and software issues during the development process. • Test the device under various conditions to ensure reliability and accuracy. • Analyse data collected by the device to assess its effectiveness. • Reflect on the design and programming process to identify lessons learned and potential improvements.



Mechanisms

Substantive Knowledge

Disciplinary Knowledge



Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• a	• A pulley is a simple machine used to lift or move loads. • The components of a pulley system include the wheel and rope. • Identify real-world applications of pulleys, such as in drawbridges and flagpoles. • Develop skills in assembling a basic pulley system. • Learn to design and construct a model drawbridge incorporating a pulley mechanism. • Test the functionality of the drawbridge and make necessary adjustments for smooth operation.		• Understand that pneumatic systems utilise compressed air to create movement, enabling mechanisms to function without electrical power. • Recognise the key components of a pneumatic system, including syringes, tubing (pipework), and balloons, and comprehend their roles in controlling airflow and movement. • Identify how varying the size of syringes and the elasticity of balloons can affect the movement and force within a pneumatic mechanism. • Research what systems use pheumatic systems • Investigate how phrumatic systems work • Design a moving creature toy housed within a box that incorporates a pneumatic system to animate features such as opening its mouth or raising its limbs.		• Cam mechanisms convert rotational motion into linear motion, enabling movement in various directions. • Learn about different pop-up structures, such as box folds and v-folds, and how they can be used to create three-dimensional effects. • Recognise the role of mechanical systems, like cams, in enhancing the functionality and interactivity of products. • Construct the pop-up book, integrating cam mechanisms to create movement. • Modify designs to ensure functionality and enhance the visual appeal of the animations. • Assess the effectiveness of the cam mechanisms in animating scenes. • Gather feedback from peers to identify strengths and areas for improvement.	• a



Cooking and Nutrition

Substantive Knowledge

Disciplinary Knowledge



Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Recognising the difference between sweet and savoury food. • Understanding the importance and usefulness of seasonality when purchasing food. • Explaining how to create a balanced meal.	• Identify a variety of fruits and vegetables. • It is important to wash fruits and vegetables before using them • There are lots of benefits to eating a balanced diet. • Develop basic knife skills for cutting soft fruits and vegetables safely. • Learn to arrange ingredients aesthetically on a plate. • Evaluate the taste and texture combinations in the salad.	• Understand that vegetables are an essential part of a healthy diet, providing vital nutrients and vitamins. • Recognise the names and characteristics of various vegetables commonly used in soups, such as carrots, potatoes, and onions. • Learn that cooking methods, like boiling, can alter the texture and flavour of vegetables, making them suitable for different dishes. • Develop basic food preparation skills, including washing, peeling, and chopping vegetables safely. • Follow a simple recipe to combine ingredients in the correct sequence to make vegetable soup. • Practice safe and hygienic methods when handling food, such as washing hands and using clean utensils. •	• Understand that dosa is a traditional South Indian dish made from fermented rice and lentil batter, resulting in a crispy crepe. • RecogniSe the nutritional benefits of dosa, including its high carbohydrate content from rice and protein from lentils, making it a balanced meal option. • Learn about the fermentation process of dosa batter, which enhances its digestibility and imparts a unique flavour. • Appreciate the importance of seasonality in cooking, and how incorporating seasonal vegetables into dosa fillings can enhance flavour and nutritional value. • Design a dosa recipe that incorporates seasonal vegetables available in the UK during the spring season, such as asparagus, spinach, or spring onions. • Prepare dosa batter by soaking rice and lentils, grinding them to a smooth consistency, and allowing it to ferment appropriately. • Cook dosas on a griddle, achieving the desired crispiness and golden-brown colour. • Create a filling using the selected seasonal vegetables, ensuring it complements the dosa and provides a balanced meal.	• Flatbreads are a type of bread made with flour, water, and salt, and are typically rolled into flattened dough and cooked without the use of a leavening agent. • Kneading is the process of working dough by hand to develop gluten, which gives the bread its structure and chewiness. • Proving (also known as proofing or fermentation) is a step in bread-making where the dough is allowed to rest and rise, enabling yeast to ferment the sugars, producing gas that leavens the bread. • Dips are sauces or condiments into which food is dipped, often served with bread or vegetables. • Measure and mix ingredients accurately to form a dough suitable for flatbreads. • Knead the dough effectively to develop the necessary gluten structure, using techniques such as folding and pressing. • Allow the dough to prove for an appropriate amount of time, understanding the environmental factors that affect fermentation, such as temperature. • Prepare simple dips to accompany the flatbreads, practicing basic knife skills and combining ingredients safely.	• Seasonality refers to the times of the year when specific foods are harvested at their peak, affecting their availability, taste, and cost. • Recognise the importance of sourcing ingredients that are reared (raised), caught, or processed locally, which can influence the sustainability and nutritional value of the food. • The food rationing system during World War II limited the availability of certain ingredients and led to the creation of resourceful recipes like the Lord Woolton Pie. • Understand the concept of creating balanced meals that provide essential nutrients, even when certain ingredients are scarce or unavailable. • Research and Investigate: Explore historical recipes from the World War II era, focusing on the use of seasonal and locally sourced ingredients. • Design: Plan a pie recipe that incorporates seasonal vegetables and locally sourced proteins, considering the limitations of wartime rationing. • Make and Modify: Prepare the pie, experimenting with different combinations of ingredients to achieve a balanced and flavorful dish. Modify the recipe as needed to suit available resources. • Evaluate: Assess the final product based on taste, texture, and nutritional balance. Reflect on the challenges faced during the cooking process and suggest improvements.	• Understand that ingredients can be grown (e.g., rice, vegetables), reared (e.g., poultry, livestock), caught (e.g., fish, seafood), or processed (e.g., tofu, canned tomatoes). • Recognise the importance of including a balance of carbohydrates (rice), proteins (meat or legumes), and vegetables to create a nutritious meal. • Gather information on different curry recipes and the cultural significance behind them. • Investigate the supply chain of selected ingredients, from their origin to the point of purchase. • Develop a recipe that reflects an understanding of ingredient origins and incorporates a balanced nutritional profile. • Plan the preparation process, including timing and sequencing of cooking steps. • Execute the recipe, applying appropriate cooking techniques and ensuring food safety practices. • Adapt the recipe as needed during cooking to achieve the desired outcome. • Critically assess the dish against predetermined criteria such as taste, texture, and presentation. • Solicit feedback from peers and reflect on the cooking experience to inform future improvements.



Textiles

Substantive Knowledge

Disciplinary Knowledge

Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Realising that tools can be used for a purpose; • Using simple tools and techniques competently and appropriately; • Selecting appropriate brush for a given purpose; • Exploring what happens when they mix colours; • Experimenting with different textures. • Sewing involves using a variety of stitches, such as back stitch, whip stitch, cross stitch, running stitch, and blanket stitch. These stitches serve both functional purposes, such as securing fabric, and aesthetic purposes, enhancing the overall appearance of the sewn items. • Safely use and explore a variety of materials, tools, and techniques, experimenting with colour, design, texture, form, and function. • Using available resources to create props to support role-play. •		• Understand that sewing is a method of joining materials together using a needle and thread. • Recognise various types of stitches, such as running stitch and overcast stitch, and their specific uses in sewing. • Identify different fabrics suitable for sewing projects, including felt, cotton, and linen. • Develop the ability to thread a needle and tie a secure knot at the end of the thread. • Practice basic sewing techniques, including the running stitch and overcast stitch, to join fabric pieces together. • Create a simple hand puppet, incorporating features like eyes, mouth, and clothing using various sewing techniques. • Evalutate their hand puppet		• Understand that a wallet is a small, flat case designed to carry personal items such as cash, credit cards, and identification documents. • Recognise that stiffening in textile projects involves adding materials to fabric to provide structure and durability, essential for items like wallets that require shape retention. • Identify various stiffening materials suitable for sewing projects, such as interfacing, cardboard, or plastic inserts, and understand their properties and applications. • Learn basic sewing techniques appropriate for constructing a wallet, including running stitch, backstitch, and the use of fastenings like buttons or Velcro. • Select appropriate materials for the wallet's exterior and lining, and choose suitable stiffening agents to provide the necessary structure. • Construct the wallet by cutting fabric according to the design, applying stiffening materials, and using appropriate sewing techniques to assemble the components securely. • Evaluate the finished wallet by seeking feedback from the friend, assessing aspects like functionality, durability, and visual appeal, and suggesting possible improvements.	• Learn about different types of fasteners, including buckles, Velcro, and snaps, and their appropriate applications in tool belts. • Understand the properties of various materials, such as leather, canvas, and synthetic fabrics, and how they affect the durability and comfort of the tool belt. • Construct the tool belt, integrating various fasteners to ensure functionality and security. • Modify designs to accommodate various tools and enhance comfort and usability. • Assess the effectiveness of the fasteners in securing tools and ensuring ease of use. • Gather feedback from peers to identify strengths and areas for improvement.	• a



Vocabulary

Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Structure: An arrangement of parts that provides support. • Stable: Strong and not likely to fall over. • Join: To connect or fasten things together. • Pulley: A wheel with a grooved rim through which a rope can run to change the direction of the pull and lift a load. • Load: The weight or object that is being moved or lifted. • Mechanism: A system of parts working together in a machine. • Ingredient: Any of the foods or substances that are combined to make a particular dish. • Hygiene: keeping our bodies and surroundings clean to stay healthy and stop germs from spreading. • Balanced Diet: Eating different kinds of food that help our bodies grow strong and stay healthy.	• Axle: A rod that connects wheels, allowing them to rotate. • Alignment: The correct positioning of parts relative to each other. • Mechanism: A system of parts working together in a machine. • Ingredient: A food item used to prepare a dish. • Recipe: A set of instructions for preparing a particular dish, including a list of the ingredients required. • Boil: To cook food by heating it in water until bubbles rise continuously and break on the surface. • Needle: A slender, pointed tool used for sewing, typically made of metal. • Thread: A long, thin strand of material used for sewing, often made of cotton or polyester. • Stitch: A loop of thread passed through fabric to join pieces together or to create decorative patterns.	• Circuit: A complete path through which electric current can flow. • Series Circuit: A circuit where components are connected end-to-end, so the current flows through each component in turn. • Buzzer: An electrical device that emits a sound when current passes through it, often used as an indicator or alarm. • Seasonality: The concept of using ingredients that are harvested at a particular time of year, ensuring peak freshness and flavour. • Fermentation: The chemical breakdown of a substance by bacteria, yeasts, or other microorganisms, which in the case of dosa batter, enhances flavour and digestibility. • Griddle: A flat cooking surface used for making dosas, typically heated and lightly oiled. • Pneumatic System: A mechanism that uses compressed air to create movement or control devices. • Syringe: A device consisting of a cylindrical tube and a plunger, used to inject or withdraw fluids; in pneumatic systems, it acts as a pump to move air. • Tubing (Pipework): Flexible hollow pipes that transport air between components in a pneumatic system.	• Shell Structure: A strong shape that is hollow inside. It has a thin outside layer that protects what's inside. • Net: A flat shape you can cut out and fold to make a 3D object, like a box. • Flap (Tab): A small part that sticks out on a net. You use it to glue or tape pieces together. • Laminating: Sticking layers of material together to make something stronger. • Wallet: A small, flat case used for carrying personal items such as money and cards. • Stiffening: The process of adding materials to fabric to provide rigidity and maintain shape. • Interfacing: A textile used on the unseen side of fabrics to make an area of a garment more rigid. • Running Stitch: A basic stitch consisting of a line of small, even stitches that run in and out through the fabric. • Backstitch: A strong stitch that doubles back on the last stitch, creating a solid line of stitching. • Kneading: The process of working dough by hand to develop gluten, which gives bread its structure. • Proving: The stage in bread-making where dough is allowed to rest and rise, enabling fermentation. • Gluten: A protein found in wheat that provides elasticity and strength to dough. • Fermentation: The chemical breakdown of a substance by yeast or bacteria, converting sugars into gases that help dough rise.	• Seasonality: The characteristic of food being available at certain times of the year when it is harvested at its peak. • Rationing: A system implemented during World War II to limit the consumption of certain foods and materials, ensuring fair distribution and conserving resources. • Sustainability: The ability to maintain healthy environmental, social, and economic systems in balance, by avoiding the depletion of natural resources. • Nutritional Balance: The proportion of different nutrients in a diet that is necessary for health and well-being. • Cam Mechanism: a component that converts rotational motion into linear motion, often used to create movement in mechanical systems. • Pop-Up Structure: a design technique that allows elements of a page to rise or fold out, creating a three-dimensional effect. • Mechanical System: an assembly of components that work together to perform a specific function, often involving movement or force. • Fastener: a device used to join two or more objects together, such as buckles, Velcro, or snaps. • Ergonomics: the study of people's efficiency in their working environment, applied here to design a tool belt that is comfortable and functional. • Durability: the ability of a material or product to withstand wear, pressure, or damage over time.	• Sautéing: a cooking method that involves cooking food quickly in a small amount of oil over medium-high heat. • Simmering: cooking food gently in liquid at a temperature just below boiling. • Processed Foods: foods that have been altered from their natural state • Triangulation: the use of triangular shapes to strengthen a structure by distributing forces evenly. • Butt Joint: a simple joint where two pieces of material are joined end-to-end without overlapping. • Lap Joint: a joint where two pieces of material overlap each other and are fastened together. • Mortise and Tenon Joint: A strong joint where a protruding end (tenon) of one piece fits into a corresponding cavity (mortise) in another piece. • Microcontroller: a compact integrated circuit designed to govern a specific operation in an embedded system. • Sensor: a device that detects and responds to changes in the environment, such as light, temperature, or motion. • Data Logging: the process of collecting and storing data over a period for analysis. • Selection Statement: a programming construct that allows the program to choose different paths of execution



Curriculum Assessment

Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Why is stability important in a chair? • Which materials did you choose for your chair and why? • How did you ensure the parts of your chair were securely joined? • How does a pulley make lifting a load easier? • Can you name some everyday items that use pulleys? • What challenges did you face when building your drawbridge, and how did you overcome them? • Why is it important to wash fruits and vegetables before eating? • Which ingredients did you choose for your salad and why? • How can you ensure safety when using a knife?	• How do wheels and axles help vehicles move? • What problems did you encounter when building your bus, and how did you solve them? • Why is alignment important in your vehicle's design? • Can you name three vegetables that can be used to make vegetable soup? • Why is it important to wash your hands before preparing food? • What happens to vegetables when they are boiled? How does this affect their texture and taste? • What is the purpose of tying a knot at the end of your thread before starting to sew? • Can you demonstrate how to make a running stitch and explain when it is used? • What materials did you choose for your hand puppet, and why are they suitable for sewing?	• What is the purpose of a buzzer in a steady hand game? • Can you explain the difference between a series and a parallel circuit? • What challenges did you face when designing and constructing your steady hand game, and how did you overcome them? • What is the role of fermentation in making dosa batter, and how does it affect the taste and texture of the dosa? • Can you explain the nutritional benefits of including lentils in dosa batter? • Why is it beneficial to use seasonal vegetables in your dosa filling, and which seasonal vegetables did you choose? • How does the size of the syringe affect the movement of your pneumatic system? • What role does the tubing play in your pneumatic mechanism, and why is it important to ensure it is airtight? • How does inflating a balloon within your toy cause movement, and what factors influence the effectiveness of this action?	• What is a shell structure, and how is it beneficial in packaging design? • How does a net transform into a three-dimensional shape, and why are flaps important in this process? • Describe at least two techniques used to strengthen shell structures and explain how they improve the durability of the packaging. • What is the purpose of stiffening in a sewn wallet, and what materials can be used to achieve it? • Describe the steps you took to design and make the wallet for your friend. How did you ensure it met their preferences and needs? • What sewing techniques did you use in constructing the wallet, and why were they appropriate for this project? • What is the purpose of kneading dough when making flatbreads? • What happens during the proving stage of bread-making? • Which of the following ingredients is essential for making flatbreads?	• What does 'seasonality' mean in cooking, and how does it affect the availability and taste of ingredients? • During World War II, why was food rationing implemented, and how did it influence the types of pies people could make? • What is meant by 'nutritional balance' in a meal, and why is it important when creating recipes like pies? • What is the primary function of a cam mechanism in a pop-up book? • Which of the following is a common pop-up structure used to create three-dimensional effects? • What role do mechanical systems, like cams, play in products such as pop-up books? • Which of the following fasteners is commonly used in tool belts to secure tools? • What is the primary purpose of using ergonomic design principles in a tool belt? • Which of the following materials is commonly used for its durability and strength in tool belt construction?	• Which of the following ingredients is typically reared? • What is the primary purpose of sautéing vegetables when preparing a curry? • Which cooking method involves cooking food gently in liquid at a temperature just below boiling? • What is the primary purpose of using triangulation in frame structures? • Which of the following joints involves overlapping two pieces of material? • Why is it important to consider the properties of materials when selecting joining techniques for frame structures? • What is the primary function of a sensor in a monitoring device? • Which programming construct allows a micro:bit to make decisions based on sensor input? • What is data logging?

Curriculum to Inspire



Innovators



Charles Rennie Mackintosh - Furniture designer

Design brief: To make and modify a strong chair for Tinkerbell.

- Structures need to be stable to support weight.
- Recognise different materials and their properties suitable for building a chair.
- Identify basic joining techniques used in constructing simple structures.

- Develop skills in measuring and cutting materials accurately.
- Learn to follow a simple design plan to create a model.
- Evaluate the stability and functionality of the constructed chair.

Research and Investigate | Design | Make and Modify | Evaluate



- Structure: An arrangement of parts that provides support.
- Stable: Strong and not likely to fall over.
- Join: To connect or fasten things together.



- Why is stability important in a chair?
- Which materials did you choose for your chair and why?
- How did you ensure the parts of your chair were securely joined?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Concepetual Strands

Curriculum to Inspire



Innovators



Isambard Kingdom Brunel – engineer

Design brief: To research and investigate a drawbridge for a toy fort.

- A pulley is a simple machine used to lift or move loads.
- The components of a pulley system include the wheel and rope.
- Identify real-world applications of pulleys, such as in drawbridges and flagpoles.



- Pulley: A wheel with a grooved rim through which a rope can run to change the direction of the pull and lift a load.
- Load: The weight or object that is being moved or lifted.
- Mechanism: A system of parts working together in a machine.

- Develop skills in assembling a basic pulley system.
- Learn to design and construct a model drawbridge incorporating a pulley mechanism.
- Test the functionality of the drawbridge and make necessary adjustments for smooth operation.

Research and Investigate | Design | Make and Modify | Evaluate



- How does a pulley make lifting a load easier?
- Can you name some everyday items that use pulleys?
- What challenges did you face when building your drawbridge, and how did you overcome them?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Concepetual Strands

Curriculum to Inspire



Environmental Concerns



Jack Monroe – Food writer

Design brief: To prepare a salad that uses all of the food groups.

- Identify a variety of fruits and vegetables.
- It is important to wash fruits and vegetables before using them
- There are lots of benefits to eating a balanced diet.

- Develop basic knife skills for cutting soft fruits and vegetables safely.
- Learn to arrange ingredients aesthetically on a plate.
- Evaluate the taste and texture combinations in the salad.

Research and Investigate | Design | Make and Modify | Evaluate

- **Ingredient:** Any of the foods or substances that are combined to make a particular dish.
- **Hygiene:** keeping our bodies and surroundings clean to stay healthy and stop germs from spreading.
- **Balanced Diet:** Eating different kinds of food that help our bodies grow strong and stay healthy.

- Why is it important to wash fruits and vegetables before eating?
- Which ingredients did you choose for your salad and why?
- How can you ensure safety when using a knife?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Concepetual Strands

Curriculum to Inspire



Innovators



Margaret Calvert - Road sign designer

Design brief: To make, modify and evaluate a London Bus that moves.

- Understand how wheels and axles work together to facilitate movement.
- Recognise the importance of alignment in wheel and axle mechanisms.
- Identify different types of vehicles and their wheel configurations.



- Axle: A rod that connects wheels, allowing them to rotate.
- Alignment: The correct positioning of parts relative to each other.
- Mechanism: A system of parts working together in a machine.

- Develop skills in assembling wheels and axles correctly.
- Learn to make a simple vehicle model, such as a London bus.
- Evaluate each type of vehicles and their wheel configuration



- How do wheels and axles help vehicles move?
- What problems did you encounter when building your bus, and how did you solve them?
- Why is alignment important in your vehicle's design?

Research and Investigate | Design | Make and Modify | Evaluate

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators



Emmy Made - Chef

Design brief: To prepare a vegetable soup for the greedy Sheriff of Nottingham.

- Understand that vegetables are an essential part of a healthy diet, providing vital nutrients and vitamins.
- Recognise the names and characteristics of various vegetables commonly used in soups, such as carrots, potatoes, and onions.
- Learn that cooking methods, like boiling, can alter the texture and flavour of vegetables, making them suitable for different dishes.

- Develop basic food preparation skills, including washing, peeling, and chopping vegetables safely.
- Follow a simple recipe to combine ingredients in the correct sequence to make vegetable soup.
- Practice safe and hygienic methods when handling food, such as washing hands and using clean utensils.

Research and Investigate | Design | Make and Modify | Evaluate

- **Ingredient:** A food item used to prepare a dish.
- **Recipe:** A set of instructions for preparing a particular dish, including a list of the ingredients required.
- **Boil:** To cook food by heating it in water until bubbles rise continuously and break on the surface.

- Can you name three vegetables that can be used to make vegetable soup?
- Why is it important to wash your hands before preparing food?
- What happens to vegetables when they are boiled? How does this affect their texture and taste?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Concepetual Strands

Curriculum to Inspire



Innovators



Paul Smith - Fashion Designer

Design brief: To make a hand puppet to perform a play.

- Understand that sewing is a method of joining materials together using a needle and thread.
- Recognise various types of stitches, such as running stitch and overcast stitch, and their specific uses in sewing.
- Identify different fabrics suitable for sewing projects, including felt, cotton, and linen.

- Develop the ability to thread a needle and tie a secure knot at the end of the thread.
- Practice basic sewing techniques, including the running stitch and overcast stitch, to join fabric pieces together.
- Create a simple hand puppet, incorporating features like eyes, mouth, and clothing using various sewing techniques.
- Evalutate their hand puppet

Research and Investigate | Design | Make and Modify | Evaluate



- **Needle: A slender, pointed tool used for sewing, typically made of metal.**
- **Thread: A long, thin strand of material used for sewing, often made of cotton or polyester.**
- **Stitch: A loop of thread passed through fabric to join pieces together or to create decorative patterns.**



- **What is the purpose of tying a knot at the end of your thread before starting to sew?**
- **Can you demonstrate how to make a running stitch and explain when it is used?**
- **What materials did you choose for your hand puppet, and why are they suitable for sewing?**

Substantive Knowledge | **Disciplinary Knowledge** | **Core Vocabulary** | **Curriculum Assessment** | **Conceptual Strands**

Curriculum to Inspire



Nottingham



Chris Kingsnorth – Nottingham-based Game Designer

Design brief: To make a steady hand game with a simple circuit.

- Understand that electrical systems consist of components such as power sources, conductors, and loads, which work together to form a complete circuit.
- Recognise the difference between series and parallel circuits and their respective advantages and disadvantages.
- Identify the role of a buzzer in a circuit and how it can be used as an indicator in games like the steady hand game.

- Design a steady hand game, considering the target audience and creating both design and success criteria focusing on features of individual design ideas.
- Identify and name the components required to build the game, including the power source, wires, buzzer, and conductive path.
- Construct a stable base for the game, accurately cut, fold, and assemble a net, and decorate the base to a high-quality finish.
- Assemble and test a functional series circuit, incorporating a buzzer, and incorporate the circuit into the base of the game.

Research and Investigate | Design | Make and Modify | Evaluate



- **Circuit:** A complete path through which electric current can flow.
- **Series Circuit:** A circuit where components are connected end-to-end, so the current flows through each component in turn.
- **Buzzer:** An electrical device that emits a sound when current passes through it, often used as an indicator or alarm.



- What is the purpose of a buzzer in a steady hand game?
- Can you explain the difference between a series and a parallel circuit?
- What challenges did you face when designing and constructing your steady hand game, and how did you overcome them?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Environmental Concerns



Nisha Madhulika - Chef

Design brief: To make a Dosa using seasonal fillings.

- Understand that dosa is a traditional South Indian dish made from fermented rice and lentil batter, resulting in a crispy crepe.
- RecogniSe the nutritional benefits of dosa, including its high carbohydrate content from rice and protein from lentils, making it a balanced meal option.
- Learn about the fermentation process of dosa batter, which enhances its digestibility and imparts a unique flavour.
- Appreciate the importance of seasonality in cooking, and how incorporating seasonal vegetables into dosa fillings can enhance flavour and nutritional value.

- Design a dosa recipe that incorporates seasonal vegetables available in the UK during the spring season, such as asparagus, spinach, or spring onions.
- Prepare dosa batter by soaking rice and lentils, grinding them to a smooth consistency, and allowing it to ferment appropriately.
- Cook dosas on a griddle, achieving the desired crispiness and golden-brown colour.
- Create a filling using the selected seasonal vegetables, ensuring it complements the dosa and provides a balanced meal.

Research and Investigate | Design | Make and Modify | Evaluate



- **Seasonality:** The concept of using ingredients that are harvested at a particular time of year, ensuring peak freshness and flavour.
- **Fermentation:** The chemical breakdown of a substance by bacteria, yeasts, or other microorganisms, which in the case of dosa batter, enhances flavour and digestibility.
- **Griddle:** A flat cooking surface used for making dosas, typically heated and lightly oiled.



- What is the role of fermentation in making dosa batter, and how does it affect the taste and texture of the dosa?
- Can you explain the nutritional benefits of including lentils in dosa batter?
- Why is it beneficial to use seasonal vegetables in your dosa filling, and which seasonal vegetables did you choose?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators



Isambard Kingdom Brunel – engineer

Design brief: To research an investigate a moving creature in a box toy.

- Understand that pneumatic systems utilise compressed air to create movement, enabling mechanisms to function without electrical power.
- Recognise the key components of a pneumatic system, including syringes, tubing (pipework), and balloons, and comprehend their roles in controlling airflow and movement.
- Identify how varying the size of syringes and the elasticity of balloons can affect the movement and force within a pneumatic mechanism.

- Research what systems use pheumatic systems
- Investigate how phrumatic systems work
- Design a moving creature toy housed within a box that incorporates a pneumatic system to animate features such as opening its mouth or raising its limbs.

Research and Investigate | Design | Make and Modify | Evaluate

- **Pneumatic System: A mechanism that uses compressed air to create movement or control devices.**
- **Syringe: A device consisting of a cylindrical tube and a plunger, used to inject or withdraw fluids; in pneumatic systems, it acts as a pump to move air.**
- **Tubing (Pipework): Flexible hollow pipes that transport air between components in a pneumatic system.**



- **How does the size of the syringe affect the movement of your pneumatic system?**
- **What role does the tubing play in your pneumatic mechanism, and why is it important to ensure it is airtight?**
- **How does inflating a balloon within your toy cause movement, and what factors influence the effectiveness of this action?**

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators



Zaha Hadid - Architect

Design brief: To research and design packaging for a gift.

- Understand that a shell structure is a hollow, lightweight construction formed by creating a 3D shape from flat materials, commonly used in packaging to protect and contain items.
- Recognise that a net is a two-dimensional (2D) representation of a three-dimensional (3D) shape, which, when folded along specific lines, forms the desired structure.
- Identify the purpose of flaps (tabs) in a net, which are essential for joining edges together securely, ensuring the stability and integrity of the assembled structure.
- Learn various techniques to stiffen and strengthen shell structures, such as laminating (gluing multiple layers together), corrugating (creating a wavy layer between flat sheets), and ribbing (adding supportive strips), to enhance durability and functionality.



- **Shell Structure: A strong shape that is hollow inside. It has a thin outside layer that protects what's inside.**
- **Net: A flat shape you can cut out and fold to make a 3D object, like a box.**
- **Flap (Tab): A small part that sticks out on a net. You use it to glue or tape pieces together.**
- **Laminating: Sticking layers of material together to make something stronger.**

- **Investigate and analyse existing packaging designs to understand how nets are constructed and how flaps are utilised for assembly.**
- **Design a net for a gift package, incorporating appropriate flaps for joining and considering the dimensions and shape required to accommodate the gift securely.**

Research and Investigate | Design | Make and Modify | Evaluate



- **What is a shell structure, and how is it beneficial in packaging design?**
- **How does a net transform into a three-dimensional shape, and why are flaps important in this process?**
- **Describe at least two techniques used to strengthen shell structures and explain how they improve the durability of the packaging.**

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators



William Morris - designer

Design brief: To make and evaluate a wallet for a friend.

- Understand that a wallet is a small, flat case designed to carry personal items such as cash, credit cards, and identification documents.
- Recognise that stiffening in textile projects involves adding materials to fabric to provide structure and durability, essential for items like wallets that require shape retention.
- Identify various stiffening materials suitable for sewing projects, such as interfacing, cardboard, or plastic inserts, and understand their properties and applications.
- Learn basic sewing techniques appropriate for constructing a wallet, including running stitch, backstitch, and the use of fastenings like buttons or Velcro.

- Select appropriate materials for the wallet's exterior and lining, and choose suitable stiffening agents to provide the necessary structure.
- Construct the wallet by cutting fabric according to the design, applying stiffening materials, and using appropriate sewing techniques to assemble the components securely.
- Evaluate the finished wallet by seeking feedback from the friend, assessing aspects like functionality, durability, and visual appeal, and suggesting possible improvements.

Research and Investigate | Design | Make and Modify | Evaluate



- **Wallet:** A small, flat case used for carrying personal items such as money and cards.
- **Stiffening:** The process of adding materials to fabric to provide rigidity and maintain shape.
- **Interfacing:** A textile used on the unseen side of fabrics to make an area of a garment more rigid.
- **Running Stitch:** A basic stitch consisting of a line of small, even stitches that run in and out through the fabric.
- **Backstitch:** A strong stitch that doubles back on the last stitch, creating a solid line of stitching.



- What is the purpose of stiffening in a sewn wallet, and what materials can be used to achieve it?
- Describe the steps you took to design and make the wallet for your friend. How did you ensure it met their preferences and needs?
- What sewing techniques did you use in constructing the wallet, and why were they appropriate for this project?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators



Cynthia Louise - Chef

Design brief: To make flatbread and dips.

- Flatbreads are a type of bread made with flour, water, and salt, and are typically rolled into flattened dough and cooked without the use of a leavening agent.
- Kneading is the process of working dough by hand to develop gluten, which gives the bread its structure and chewiness.
- Proving (also known as proofing or fermentation) is a step in bread-making where the dough is allowed to rest and rise, enabling yeast to ferment the sugars, producing gas that leavens the bread.
- Dips are sauces or condiments into which food is dipped, often served with bread or vegetables.



- Kneading: The process of working dough by hand to develop gluten, which gives bread its structure.
- Proving: The stage in bread-making where dough is allowed to rest and rise, enabling fermentation.
- Gluten: A protein found in wheat that provides elasticity and strength to dough.
- Fermentation: The chemical breakdown of a substance by yeast or bacteria, converting sugars into gases that help dough rise.

- Measure and mix ingredients accurately to form a dough suitable for flatbreads.
- Knead the dough effectively to develop the necessary gluten structure, using techniques such as folding and pressing.
- Allow the dough to prove for an appropriate amount of time, understanding the environmental factors that affect fermentation, such as temperature.
- Prepare simple dips to accompany the flatbreads, practicing basic knife skills and combining ingredients safely.

Research and Investigate | Design | Make and Modify | Evaluate



- What is the purpose of kneading dough when making flatbreads?
- What happens during the proving stage of bread-making?
- Which of the following ingredients is essential for making flatbreads?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Environmental Concerns



Jack Monroe – Food writer

Design brief: To make a ration pie.

- Seasonality refers to the times of the year when specific foods are harvested at their peak, affecting their availability, taste, and cost.
- Recognise the importance of sourcing ingredients that are reared (raised), caught, or processed locally, which can influence the sustainability and nutritional value of the food.
- The food rationing system during World War II limited the availability of certain ingredients and led to the creation of resourceful recipes like the Lord Woolton Pie.
- Understand the concept of creating balanced meals that provide essential nutrients, even when certain ingredients are scarce or unavailable.

- Research and Investigate: Explore historical recipes from the World War II era, focusing on the use of seasonal and locally sourced ingredients.
- Design: Plan a pie recipe that incorporates seasonal vegetables and locally sourced proteins, considering the limitations of wartime rationing.
- Make and Modify: Prepare the pie, experimenting with different combinations of ingredients to achieve a balanced and flavorful dish. Modify the recipe as needed to suit available resources.
- Evaluate: Assess the final product based on taste, texture, and nutritional balance. Reflect on the challenges faced during the cooking process and suggest improvements.

Research and Investigate | Design | Make and Modify | Evaluate



- **Seasonality:** The characteristic of food being available at certain times of the year when it is harvested at its peak.
- **Rationing:** A system implemented during World War II to limit the consumption of certain foods and materials, ensuring fair distribution and conserving resources.
- **Sustainability:** The ability to maintain healthy environmental, social, and economic systems in balance, by avoiding the depletion of natural resources.
- **Nutritional Balance:** The proportion of different nutrients in a diet that is necessary for health and well-being.



- What does 'seasonality' mean in cooking, and how does it affect the availability and taste of ingredients?
- During World War II, why was food rationing implemented, and how did it influence the types of pies people could make?
- What is meant by 'nutritional balance' in a meal, and why is it important when creating recipes like pies?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovator



Matthew Reinhart - Pop-up book author

Design brief: To make a cam structure for a moving toy.

- Cam mechanisms convert rotational motion into linear motion, enabling movement in various directions.
- Learn about different pop-up structures, such as box folds and v-folds, and how they can be used to create three-dimensional effects.
- Recognise the role of mechanical systems, like cams, in enhancing the functionality and interactivity of products.

- Construct the pop-up book, integrating cam mechanisms to create movement.
- Modify designs to ensure functionality and enhance the visual appeal of the animations.
- Assess the effectiveness of the cam mechanisms in animating scenes.
- Gather feedback from peers to identify strengths and areas for improvement.

Research and Investigate | Design | Make and Modify | Evaluate

- **Cam Mechanism:** a component that converts rotational motion into linear motion, often used to create movement in mechanical systems.
- **Pop-Up Structure:** a design technique that allows elements of a page to rise or fold out, creating a three-dimensional effect.
- **Mechanical System:** an assembly of components that work together to perform a specific function, often involving movement or force.

- What is the primary function of a cam mechanism in a pop-up book?
- Which of the following is a common pop-up structure used to create three-dimensional effects?
- What role do mechanical systems, like cams, play in products such as pop-up books?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators





Paul Smith - Designer
Emmaculate Jacobine – Fashion Photographer

Design brief: To make a tool belt with fastener.

- **Learn about different types of fasteners, including buckles, Velcro, and snaps, and their appropriate applications in tool belts.**
- **Understand the properties of various materials, such as leather, canvas, and synthetic fabrics, and how they affect the durability and comfort of the tool belt.**

- **Construct the tool belt, integrating various fasteners to ensure functionality and security.**
- **Modify designs to accommodate various tools and enhance comfort and usability.**
- **Assess the effectiveness of the fasteners in securing tools and ensuring ease of use.**
- **Gather feedback from peers to identify strengths and areas for improvement.**

Research and Investigate | **Design** | **Make and Modify** | **Evaluate**



- **Fastener: a device used to join two or more objects together, such as buckles, Velcro, or snaps.**
- **Ergonomics: the study of people's efficiency in their working environment, applied here to design a tool belt that is comfortable and functional.**
- **Durability: the ability of a material or product to withstand wear, pressure, or damage over time.**



- **Which of the following fasteners is commonly used in tool belts to secure tools?**
- **What is the primary purpose of using ergonomic design principles in a tool belt?**
- **Which of the following materials is commonly used for its durability and strength in tool belt construction?**

Substantive Knowledge | **Disciplinary Knowledge** | **Core Vocabulary** | **Curriculum Assessment** | **Conceptual Strands**

Curriculum to Inspire



UKS2 B DT Autumn 2

Innovators





Jeremy Chan and Iré Hassan - chefs

Design brief: To make a savoury curry and rice.

- **Understand that ingredients can be grown (e.g., rice, vegetables), reared (e.g., poultry, livestock), caught (e.g., fish, seafood), or processed (e.g., tofu, canned tomatoes).**
- **Recognise the importance of including a balance of carbohydrates (rice), proteins (meat or legumes), and vegetables to create a nutritious meal.**

- Gather information on different curry recipes and the cultural significance behind them.
- Investigate the supply chain of selected ingredients, from their origin to the point of purchase.
- Develop a recipe that reflects an understanding of ingredient origins and incorporates a balanced nutritional profile.
- Plan the preparation process, including timing and sequencing of cooking steps.
- Execute the recipe, applying appropriate cooking techniques and ensuring food safety practices.
- Adapt the recipe as needed during cooking to achieve the desired outcome.
- Critically assess the dish against predetermined criteria such as taste, texture, and presentation.
- Solicit feedback from peers and reflect on the cooking experience to inform future improvements.

Research and Investigate | **Design** | **Make and Modify** | **Evaluate**



- **Sautéing: a cooking method that involves cooking food quickly in a small amount of oil over medium-high heat.**
- **Simmering: cooking food gently in liquid at a temperature just below boiling.**
- **Processed Foods: foods that have been altered from their natural state**



- **Which of the following ingredients is typically reared?**
- **What is the primary purpose of sautéing vegetables when preparing a curry?**
- **Which cooking method involves cooking food gently in liquid at a temperature just below boiling?**

Substantive Knowledge | **Disciplinary Knowledge** | **Core Vocabulary** | **Curriculum Assessment** | **Conceptual Strands**

Curriculum to Inspire



Innovators



Ismail al-Jazari - Polymath

Design brief: To design a bird hide.

- Triangulation involves using triangular shapes to strengthen structures by distributing forces evenly, enhancing rigidity and stability.
- Butt Joints connect two pieces end-to-end.
- Lap Joints overlap two pieces and fastening them together.
- Mortise and tenon joints are made by inserting a protruding end (tenon) into a corresponding cavity (mortise) for a secure fit.



- Triangulation: the use of triangular shapes to strengthen a structure by distributing forces evenly.
- Butt Joint: a simple joint where two pieces of material are joined end-to-end without overlapping.
- Lap Joint: a joint where two pieces of material overlap each other and are fastened together.
- Mortise and Tenon Joint: A strong joint where a protruding end (tenon) of one piece fits into a corresponding cavity (mortise) in another piece.

- Analyse existing bird hides and frame structures to identify effective design elements and construction methods.
- Evaluate the effectiveness of different joining techniques and the application of triangulation in enhancing structural integrity.
- Apply knowledge of triangulation and joining methods to create a detailed design for a bird hide that meets specified criteria.

Research and Investigate | Design | Make and Modify | Evaluate



- What is the primary purpose of using triangulation in frame structures?
- Which of the following joints involves overlapping two pieces of material?
- Why is it important to consider the properties of materials when selecting joining techniques for frame structures?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

Curriculum to Inspire



Innovators



Grace Hopper - Computer scientist

Design brief: To make a micro bit device.

- Understand that the BBC micro:bit is a programmable microcontroller equipped with various sensors, including accelerometer, light sensor, temperature sensor, and compass.
- The micro:bit can be programmed to collect data from its sensors and respond to environmental changes.

- Assemble a functional monitoring device using the micro:bit and additional components as needed.
- Develop and refine programs to accurately collect and respond to sensor data.
- Troubleshoot hardware and software issues during the development process.
- Test the device under various conditions to ensure reliability and accuracy.
- Analyse data collected by the device to assess its effectiveness.
- Reflect on the design and programming process to identify lessons learned and potential improvements.

Research and Investigate | Design | Make and Modify | Evaluate



- **Microcontroller:** a compact integrated circuit designed to govern a specific operation in an embedded system.
- **Sensor:** a device that detects and responds to changes in the environment, such as light, temperature, or motion.
- **Data Logging:** the process of collecting and storing data over a period for analysis.
- **Selection Statement:** a programming construct that allows the program to choose different paths of execution



- What is the primary function of a sensor in a monitoring device?
- Which programming construct allows a micro:bit to make decisions based on sensor input?
- What is data logging?

Substantive Knowledge | Disciplinary Knowledge | Core Vocabulary | Curriculum Assessment | Conceptual Strands

SEND in DT

Cognition and Learning		Communication and Interaction	
Subject Challenges for SEND	**Provision for SEND**	**Subject Challenges for SEND**	**Provision for SEND**
• Use of English for evaluation purposes. • Use of tools safely – not seeing the danger.	• Word mats, google translate, dual coding. Stem sentences. • Close supervision.	• Understanding of the purpose. • Group work.	• L.O., success criteria. Modelling. • Be aware and put children in a group with children that they know and are comfortable with.

SEND in DT

Physical and sensory		Social Emotional and Mental Health	
Subject Challenges for SEND	**Provision for SEND**	**Subject Challenges for SEND**	**Provision for SEND**
• Fine motor skills use of scissors. • Sensory overload of materials – cooking.	• Different types of scissors around school. • Aware of children's needs and offering alternatives.	• Using tools safely so not to endanger themselves or others.	• Close supervision.

Non Negotiables that need to be in place in all lessons/classrooms when teaching DT

- **Use of visual step-by-step guides and dual coded resources to model techniques clearly.**
- **Access to a range of tactile materials and tools to support sensory exploration and engagement.**
- **Key vocabulary displayed with images to support understanding, language development, and independence.**

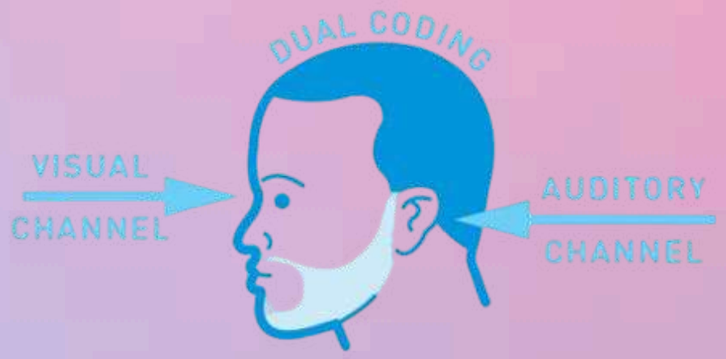
EAL in DT

At Djanogly Sherwood Academy, we are committed to ensuring that all children, including those who are learning English as an additional language (EAL), can fully access our curriculum. On entry, EAL children are assessed using FlashAcademy. If they are graded A or B, they continue to use FlashAcademy to support their English development until they progress to a higher level. These children are included in curriculum lessons that they can access, and are never excluded from learning opportunities. To support understanding, we use iPads for translation, dual coding on slides to combine visuals and text, and subtitles on PowerPoint presentations. Our teaching and learning approach ensures that teacher input is clear, simple, and accessible to all, enabling EAL children to thrive alongside their peers.

FlashAcademy®

EAL + ENGLISH + MFL







Designers



Paul Smith - Designer



Jack Monroe – Food writer



Isambard Kingdom Brunel – engineer



Margarete Steiff - Seamstress



Emmy Made - Chef



Donya Douglas-Bradshaw (Lyfta) - NASA

Designers



Chris Kingsnorth – Nottingham-based Game Designer



Nisha Madhulika - Chef



Zaha Hadid - Architect



Enaney (Lyfta) - Awra Amba



Cynthia Louise - Chef



Jack Monroe – Food writer

Designers



Matthew Reinhart - Pop-up book author





Paul Smith - Designer

Emmaculate Jacobine – Fashion Photographer





Jeremy Chan and Iré Hassan - chefs



Ismail al-Jazari - Polymath



Susan Fang - Fashion designer



Teaching + Learning

Prepare

We plan from the big picture, ensuring strong subject knowledge, clear links, high expectations for behaviour, and strong relationships with our class.

Learn

We teach new knowledge using Rosenshine's principles to build understanding step by step.

Reinforce

We use rich hinterland content to deepen learning and make it memorable.

Retrieve

We regularly revisit and check knowledge to ensure it sticks over time.

Create

We give children opportunities to apply their knowledge through purposeful outcomes such as presentations, debates, or written work.

Conceptual Strands

Women in History

It's important that our children learn about women in history to inspire a sense of belonging and recognise the vital contributions women have made to societal progress.

Innovators

Our children learn about innovators to inspire creativity and problem-solving, helping them understand the pivotal role of innovation in the progress of the human story and its impact on society.

Nottingham

Our children learn about our city, Nottingham, to foster a sense of belonging and appreciation for the local history and community.

Environmental Concerns

Our children learn about environmental concerns to foster a sense of belonging to the global community, inspiring them to take action and help protect the world for future generations

Power

Our children learn about the concept of power to foster a sense of belonging to the local and global community and empower them to become world changers.



#sherwoodbuzz