



Educate
Together

Skills progression

YEAR 1

Design Technology

In addition to expectations from previous years, by the end of Year 1, a student at Redfield Educate Together, will be able to:

Previous learning	Refer to EYFS documentation
Current learning	Unit 1 – recycling materials for toys / imaginative play (sliders & simple levers) Unit 2 - Fruit salad Unit 3 - Weaving
Future learning	Unit 1 – Wheels & axels (transport design) Unit 2 – Sewing bags (felt) to replace plastic bags Unit 3 - wraps
	NC Objective: To design purposeful, functional, appealing products for themselves and other users based on design criteria.
	Identify the intended user (who would play with their toy / eat their fruit salad / purchase their woven design)
	Explore basic food hygiene and balanced diet as a design criterion (e.g., washed fruit, diversity on the plate)
	NC Objective: To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
	Draw models of their designs with labels (e.g., mechanisms, tools, ingredients).
	Communicate design intentions through verbal explanation and peer feedback, explaining key features and intended use.
	Explain their plans aloud for at least one of their designs (this could be recorded on an iPad using Dojo or Chatterpix).
	NC Objective: To select from and use a range of tools and equipment to perform practical tasks.
	NC Objective: To select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.
	Deciding when to use a peeler and when to use a knife.
	Using a peeler safely and cutting with a knife under supervision.
	Use simple tools like scissors, glue, and fasteners to cut, shape, and join materials (like paper and card) to create their slider and lever mechanisms.
	Discuss the benefits and drawbacks of using recycled materials.
	Name different fruits and discuss their flavours (sweet, sour, tangy, tart, zesty).
	Identify when fruit is ripe and ready to use as an ingredient.
	Experiment with different materials like paper, fabric strips, or yarn, and begin to understand how their properties affect the weaving process.
	NC Objective: To explore and evaluate a range of existing products.
	Identify mechanisms within existing products (levers, sliders, woven materials).
	Discuss how the mechanisms are used within these products and if it's effective (assess against the class's criteria).
	NC Objective: To evaluate their ideas and products against design criteria.
	NC: To build structures, exploring how they can be made stronger, stiffer and more stable.
	Create a class criterion for each design project.
	Mark their designs against the class criteria (as well as existing designs – see above).
	NC: To explore and use mechanisms.
	Explain that sliders move in a straight line (side-to-side or up-and-down) and levers pivot around a fixed point.
	Practice the fundamental weaving technique of interlacing the weft threads over and under the warp threads.

	Create simple weaving patterns, such as over-under or variations of this basic structure.
Key vocabulary	NC Objective: To use the basic principles of a healthy and varied diet to prepare dishes. NC Objective: To understand where food comes from.
	Demonstrate thorough hand washing before preparing food.
	To explore the Eat Well Guide focusing on the need for diversity within our diets (exposed to food group vocabulary but emphasising the need for different types of food).
	To explain that fruit comes from plants.
	To differentiate between common fruits and vegetables.
	Slider: A mechanism that moves in a straight line within a slotted guide.
	Lever: A rigid bar that pivots around a fixed point to move objects.
	Pivot: A fixed point around which a lever or other mechanism rotates.
	Slot: A narrow opening that guides movement.
	Mechanism: A system of parts working together to perform a specific function.
	Ingredients: The components used to make a dish or product.
	Weave: To interlace threads or materials to form a fabric or pattern.
	Interlace: To cross or mix things together, such as threads in weaving.



Educate
Together

Skills progression

YEAR 2

Design Technology

In addition to expectations from previous years, by the end of Year 2, a student at Redfield Educate Together, will be able to:

Previous learning	Unit 1 – recycling materials for toys / imaginative play (sliders & simple levers) Unit 2 - Fruit salad Unit 3 - Weaving
Current learning	Unit 1 – Wheels & axels (transport design) Unit 2 – Sewing bags (felt) to replace plastic bags Unit 3 - wraps
Future learning	Unit 1 - Bug hotel / bird's house Unit 2 - Pirate ships with gears – single use plastic Unit 3 – Foods from China
	NC Objective: To design purposeful, functional, appealing products for themselves and other users based on design criteria.
	Identify and explain the intended user for each product (how is the product suited to this user – this informs the criteria).
	Adapt product designs based on the specific needs of different audiences (e.g., considering size, accessibility, or functionality).
	NC Objective: To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
	Draw models from different perspectives (e.g., top, front, side) labelling resources required and any mechanisms.
	Make iterations of plans based on feedback from peers and self-evaluation against a criteria (e.g, plan in pencil then purple pen edit).
	Explain their plans aloud including how it fits the criterion (using IT – e.g, Class Dojo or Chatterpix).

	NC Objective: To select from and use a range of tools and equipment to perform practical tasks.
	NC Objective: To select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.
	Select materials (like straws, cardboard, dowels, felt, thread) suitable for their design.
	Be mindful of safety when using tools and materials (e.g., safe handling of scissors and needles, graters, knives).
	Choose suitable tools to peel, grate, cut (bridge method), wrap.
	Discuss where ingredients come from (links to Mexico and Mexican ingredients).
	Consider the combinations of ingredients (flavours and textures).
	NC Objective: To explore and evaluate a range of existing products.
	Identify mechanisms within existing products (levers, sliders, woven materials)
	Discuss how the mechanisms are used within these products and if it's effective (assess against their criterion)
	Evaluate how products meet the needs of their end user.
	NC Objective: To evaluate their ideas and products against design criteria.
	NC: To build structures, exploring how they can be made stronger, stiffer and more stable.
	Create a criterion for each design project (this can be done in pairs).
	Mark their designs against their own criterion (as well as existing designs – see above).
	NC: To explore and use mechanisms.
	Articulate that a wheel rotates around an axle, making it easier to move objects, and explore how these mechanisms reduce friction.
	Assemble a basic structure (like a car) and attach wheels to axles that allow it to move.
	Use a running stitch or over stitch to join felt pieces together.
	NC Objective: To use the basic principles of a healthy and varied diet to prepare dishes.
	NC Objective: To understand where food comes from.
	Explain the importance of clean hands, surfaces and tools for food preparation.
	Explain appropriate storage methods for different ingredients (e.g., refrigeration, dry storage) to maintain food safety and quality.
	Explain that there are different food groups and each provides different nutrients – confidently naming 2 groups.
	Identify a range of vegetables and state which part of the plant is eaten.
	Compare vegetables grown in England to vegetables grown in Mexico.
	Combine different food groups in one meal (a wrap).
	Wheels: Circular objects that rotate around a central point.
	Axels: Rods or spindles on which wheels rotate.
	Running stitch: A simple sewing stitch using parallel lines.
Key vocabulary	Nutrients: Substances in food essential for growth and health.
	Balance: A healthy diet that includes the correct proportions of different food groups.
	Evaluate: To assess the quality or success of a design against criteria.
	Criteria: Standards or rules used to evaluate a design.

	Skills progression	
	YEAR 3	Design Technology

In addition to expectations from previous years, by the end of Year 3, a student at Redfield Educate Together, will be able to:

Previous learning	Unit 1 – Wheels & axels (transport design) Unit 2 – Sewing bags (felt) to replace plastic bags Unit 3 - wraps
Current learning	Unit 1 - Bug hotel / bird's house Unit 2 - Pirate ships with gears – single use plastic Unit 3 – Foods from China (e.g, stir fry)
Future learning	Unit 1 – Electrical systems Unit 2 – Pulleys and levers (shadufs linked to Ancient Egyptians) Unit 3 – Somalian food
	NC Objective: To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Research the needs of specific insects/birds to develop criteria (e.g., size of holes, type of materials for insulation/shelter) for their bug hotel or bird's house. Research the features of pirate ships and consider criteria for functionality (e.g., flotation, stability) and appeal, aiming for a specific "crew" (target group). Research traditional Chinese dishes, ingredients, and cultural significance to develop criteria for taste, appearance, and authenticity, aiming to create appealing dishes for a particular audience.
	NC Objective: To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Plan through annotated sketches and simple mock-ups. Introduce cross-sectional views for projects like the bug hotel or birdhouse to show internal structure and features.
	NC Objective: To select from and use a wider range of tools and equipment to perform practical tasks accurately. NC Objective: To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. NC Objective: prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Use basic tools for cutting shaping, and joining natural and construction materials (ruler, tape measure, sandpaper, wood glue ...). Select natural materials (e.g., hollow stems, wood, leaves) and construction materials (e.g., wood, mesh) based on their properties for their product. Use a range of kitchen tools and equipment (e.g., knives, chopping boards) to perform practical food preparation tasks accurately (bridge hold revisited and claw grip, and spiralsing taught). Select from a range of Chinese ingredients (e.g., noodles, specific vegetables, sauces) according to their functional properties (e.g., texture, flavour) and aesthetic qualities.
	NC Objective: To investigate and analyse a range of existing products. NC Objective: To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Investigate existing products, analysing them against their own success criteria. Document improvements made to their designs based on self-evaluation and peer feedback.
	NC Objective: To understand how key events and individuals in design and technology have helped shape the world. Make links back to Isambard Kingdom Brunel when ship building (retrieval from year 2). Then discuss Bristol Docks (William Jessop's floating harbour).
	NC: To apply their understanding of how to strengthen, stiffen and reinforce more complex structures. NC: To understand and use mechanical systems in their products. Explain and apply principles of structural integrity to ensure stable shelters and rigid hulls. Explore gears as a mechanical system to transmit motion.

	NC Objective: To understand and apply the principles of a healthy and varied diet. NC Objective: understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.
	Identify all five food groups and describe at least one nutritional benefit of each.
	Explore how one Chinese stir fry ingredient grows, where it comes from, and when it is harvested. E.g., pak choi or beansprouts.
Key vocabulary	<p>Functional: A product that performs its intended purpose effectively.</p> <p>Cuisine: A style of cooking associated with a specific culture or region.</p> <p>Hygiene: Practices to maintain health and prevent illness, especially in food preparation.</p> <p>Flotation: The ability of an object to float in water.</p> <p>Stability: The ability of a structure to resist tipping or falling over.</p> <p>Gears: Toothed wheels that transmit motion.</p> <p>Transmit: To transfer motion or force from one part of a mechanism to another.</p> <p>Prototype: A preliminary model of a product used for testing.</p> <p>Structure: The way a product is organized and constructed to support weight.</p> <p>Reinforce: To strengthen or support a structure.</p>

 Educate Together	Skills progression	
	YEAR 4	Design Technology

In addition to expectations from previous years, by the end of Year 4, a student at Redfield Educate Together, will be able to:

Previous learning	Unit 1 - Bug hotel / bird's house Unit 2 - Pirate ships with gears – single use plastic Unit 3 – Foods from China (e.g, stir fry)
Current learning	Unit 1 – Electrical systems Unit 2 – Pulleys and levers (shadufs linked to Ancient Egyptians) Unit 3 – Somalian food
Future learning	Unit 1 – Sewing Unit 2 – Pneumatics (rockets) Unit 3 – Religious dishes
	NC Objective: To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
	Research existing electrical products and define criteria for a new product's function, safety, and appeal (e.g., a simple alarm or light).
	Research the historical context of shadufs to understand their purpose, then develop criteria for their own lifting system's efficiency and stability.
	Research traditional Somalian savoury dishes, ingredients, and cultural significance to develop criteria for taste, appearance, and authenticity, aiming to create appealing dishes for a particular audience
	NC Objective: To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
	Utilise online circuit simulation tools to design and test electrical systems before physically building them.

	Produce detailed, annotated drawings that include measurements and material specifications.
	<p>NC Objective: To select from and use a wider range of tools and equipment to perform practical tasks accurately.</p> <p>NC Objective: To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p> <p>NC Objective: prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p>
	Select electrical components (wires, batteries, bulbs, switches) based on their functional properties.
	Select from a range of Somalian ingredients according to their functional properties (e.g., texture, flavour) and aesthetic qualities.
	Select materials for their pulley and lever systems based on strength, rigidity, and ease of manipulation
	Progress to more precise cutting techniques, such as dicing and slicing, using appropriate tools.
	<p>NC Objective: To investigate and analyse a range of existing products.</p> <p>NC Objective: To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p>
	Investigate existing products, analysing them against their own success criteria, discussing how they meet the needs of the end user.
	Document improvements made to their designs based on self-evaluation and peer feedback.
	<p>NC Objective: To understand how key events and individuals in design and technology have helped shape the world.</p>
	Discuss inventors like Michael Faraday and Lewis Howard Latimer, who were instrumental in shaping electrical technology.
	<p>NC: To apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</p> <p>NC: To understand and use mechanical systems in their products.</p> <p>NC: To understand and use electrical systems in their products.</p>
	Applying knowledge to ensure the frame for the pulley/lever system is strong and stable under load.
	Build simple series circuits with switches, bulbs, buzzers, and/or motors.
	<p>NC Objective: To apply their understanding of computing to program, monitor and control their products.</p>
	Opportunity for GDs - use simple block-based coding (e.g., Scratch) to program a switch to control a light or buzzer, monitoring its output. This could link to creating a simple "Viking longhouse alarm".
	<p>NC Objective: To understand and apply the principles of a healthy and varied diet.</p> <p>NC Objective: understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</p>
	Explore the recommended portioning for the 5 food groups.
	Name 4 different vitamins / minerals and rich sources of these.
	Explore how two Somalian ingredient grows, where they come from, and when they are harvested.

Key vocabulary	Research and development (R&D): The process of investigating and experimenting to create new products.
	Technique: A specific method or skill used to perform a task.
	Pulleys: Simple machines using wheels and ropes to lift heavy objects.
	Levers: (See Year 1 definition.)
	Circuit: A complete path for electricity to flow.
	Portion: A specific amount of food.
	Function: The specific task or purpose a product is designed to perform.
	Efficiency: The ability to perform a task with minimal waste.
	Authenticity: The quality of being genuine or true to its origin (e.g., in food).

 Educate Together	Skills progression	
	YEAR 5	Design Technology

In addition to expectations from previous years, by the end of Year 5, a student at Redfield Educate Together, will be able to:

Previous learning	Unit 1 – Electrical systems Unit 2 – Pulleys and levers (shadufs linked to Ancient Egyptians) Unit 3 – Somalian food
Current learning	Unit 1 – Sewing Unit 2 – Pneumatics (rockets) Unit 3 – Religious dishes
Future learning	Unit 1 – cam mechanisms Unit 2 – 3D modelling Unit 3 – local and home grown food
	NC Objective: To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Research sustainable practices and material properties to develop design criteria for a textile product, focusing on environmental impact and durability. Research rocket design principles (e.g., aerodynamics, stability) to inform criteria for their pneumatic rocket, considering factors like launch height and trajectory. Research specific religious guidelines and example recipes.
	NC Objective: To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Create mood boards involving iterations of sketches (for textiles unit). Produce detailed, annotated drawings that include measurements and material specifications.
	NC Objective: To select from and use a wider range of tools and equipment to perform practical tasks accurately. NC Objective: To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. NC Objective: prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

	Use range of sewing tools (needles, pins, scissors) and learn various stitching and finishing techniques accurately.
	Explore how to look after knives to keep them sharp.
	Refine their cutting skills, exploring techniques like julienning or chiffonade for specific ingredients.
	Select from a wider range of textiles, considering properties like weave, stretch, and sustainability, as well as aesthetic qualities.
	NC Objective: To investigate and analyse a range of existing products. NC Objective: To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
	Investigate existing products, analysing them against their own success criteria, discussing how they meet the needs of the end user.
	NC Objective: To understand how key events and individuals in design and technology have helped shape the world.
	To explore how key individuals and events in the history of flight and rocket design — such as the Wright brothers, Wernher von Braun, or the Apollo missions — have influenced modern technologies like pneumatics and space exploration.
	NC: To apply their understanding of how to strengthen, stiffen and reinforce more complex structures. NC: To understand and use mechanical systems in their products.
	Investigate pneumatics as a system for transmitting and amplifying force, understanding how pressurised air is used in products.
	NC Objective: To apply their understanding of computing to program, monitor and control their products.
	GDs - Use simple sensors (e.g., light, sound) and microcontrollers (e.g., Micro:bit) to monitor conditions (e.g., launch detection) or control a simple launch sequence (e.g., a timed-release mechanism, or a light indicator that changes when pressure is reached). https://makecode.microbit.org/courses/ucp-science/rocket-acceleration https://makecode.microbit.org/ https://makecode.microbit.org/
	NC Objective: To understand and apply the principles of a healthy and varied diet. NC Objective: understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.
	Investigate how religious dietary requirements (e.g., Halal) influence food choices and the preparation of balanced meals.
	Explore Halal rules for meat and the process which it goes through.
Key vocabulary	<p>Textiles: Fabrics or materials made by weaving, knitting, or sewing.</p> <p>Mood board: A collection of images used to inspire and communicate a design concept.</p> <p>Julienning / chiffonade: Cutting techniques for food (Julienning: thin strips; Chiffonade: thin ribbons).</p> <p>Aesthetic quality: The visual attractiveness of a product.</p> <p>Pneumatics: A system that uses compressed air or gas to transmit force.</p> <p>Force transmission: Transferring force from one part of a mechanism to another.</p> <p>Halal: Food prepared according to Islamic law.</p> <p>Kosher: Food prepared according to Jewish dietary laws.</p>

 Educate Together	Skills progression	
	YEAR 6	Design Technology

In addition to expectations from previous years, by the end of Year 6, a student at Redfield Educate Together, will be able to:

Previous learning	Unit 1 – Sewing Unit 2 – Pneumatics (rockets) Unit 3 – Religious dishes
Current learning	Unit 1 – cam mechanisms Unit 2 – 3D modelling Unit 3 – local and home grown food (inc dough making)
	NC Objective: To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Research existing cam-driven products and use this to inform design criteria for a new product that utilizes a cam mechanism for specific movement. Develop comprehensive design criteria for a product to be digitally modelled, considering its function, aesthetics, and the constraints of 3D printing. Research food grown locally and consider which ingredients are challenging to source.
	NC Objective: To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. use annotated sketches and cross-sectional/exploded diagrams to clearly communicate the design and function of their cam mechanism. Use TinkerCad to generate, develop, model and communicate their ideas.
	NC Objective: To select from and use a wider range of tools and equipment to perform practical tasks accurately. NC Objective: To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. NC Objective: prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. use more precise tools for cutting, shaping, and joining components to create intricate cam mechanisms. Use CAD resources and potentially a 3D printer (City Academy links) or 3D pens. Use dough making tools and techniques (e.g., kneading, proving, shaping).
	NC Objective: To investigate and analyse a range of existing products. NC Objective: To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Investigate existing products, analysing them against their own success criteria with an ethical perspective (an awareness of sustainability and carbon footprint).
	NC Objective: To understand how key events and individuals in design and technology have helped shape the world. Explore rationing in WW2 and the impact it had (inc. Dig for Victory campaign).
	NC: To apply their understanding of how to strengthen, stiffen and reinforce more complex structures. NC: To understand and use mechanical systems in their products. Ensure the housing and supports for the cam mechanism are robust and prevent flexing. Design structures digitally with an understanding of how to add strength and rigidity for real-world realisation.
	NC Objective: To apply their understanding of computing to program, monitor and control their products. Use computer-aided design software and potential control (e.g., sending to a 3D printer).
	NC Objective: To understand and apply the principles of a healthy and varied diet. NC Objective: understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Name the five food groups and give examples of foods from each, along with their main nutritional benefits. Design and prepare a balanced two-dish meal, justifying ingredient choices based on nutritional benefits and local sourcing. Discuss seasonality of plant-based foods in relation to rationing in WW2.

Key vocabulary	<p>Cam mechanisms: A rotating piece in a mechanical linkage that transmits motion.</p> <p>3D modelling: Creating a three-dimensional digital representation of an object using software.</p> <p>Robust: Strong, durable, and resistant to wear and tear.</p> <p>Flexing: Bending or stretching, indicating a lack of rigidity.</p> <p>CAD (Computer-Aided Design): Using computer systems to assist in design.</p> <p>Locally sourced: Ingredients or materials obtained from a nearby area.</p> <p>Kneading: Working dough with hands to develop texture.</p> <p>Proving: The final rising stage of dough before baking.</p> <p>Ethical perspective: A viewpoint that considers moral principles, such as sustainability.</p>
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