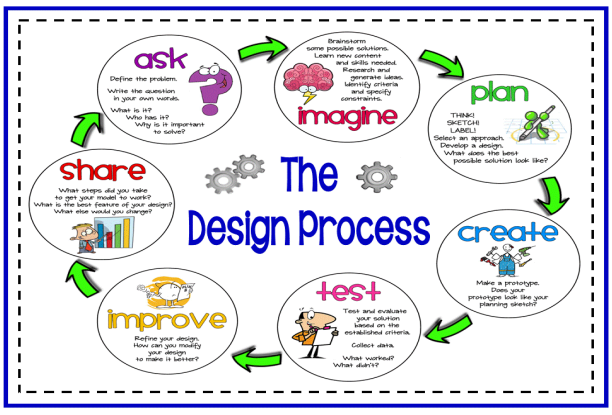
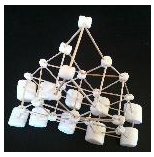
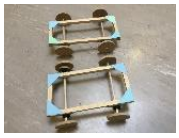
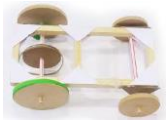
Swindon Village Primary School



DT Curriculum

Swindon Village Primary School DT Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Food Technology 	Winter Fair DT 	Mechanisms 		Food Technology 	Structures 
Year 2	Wheels & Axles 	Winter Fair DT 	Food Technology 		Textiles 	
Year 3		Winter Fair DT 		Mechanisms 	Food Technology 	Textiles 
Year 4		Winter Fair DT 	Structures 	Electrical and Mechanical Components 	Food Technology 	
Year 5	Electrical and Mechanical Components 	Winter Fair DT 		Food Technology 		Pulleys, axles and wheels 
Year 6	Structures 	Winter Fair DT 	Mechanisms 			Food Technology 

Year 1

Design	Make	Evaluate	Technical Knowledge
Understanding context, users and purposes. Generating, developing, modelling and communicating ideas.	Practical skills and techniques. 	Consider and assess a product. 	Making a product work. 
Use knowledge of existing products to support plans for a similar product. Describe, explore and investigate products that have been disassembled. Use construction kits, pictures, templates, mock-ups and captions to plan and design. Talk about and describe the tools and materials needed in order to complete the key tasks within a plan.	Explore and talk about the characteristics of an increasing range of materials. Select and use simple tools to cut and join a range of materials. Use a straight edge to mark lines for cutting. Join edge to edge using glue. Curl paper. Use a hole punch and stapler. Select from a range, a finish to improve the appearance of a product. Follow procedures for safety.	Talk about and describe key features of a range of products. Explore and evaluate a range of existing products. Begin to evaluate the success of the product in terms of function and aesthetic criteria.	Recognise that a simple range of technology is used in places such as homes and schools. Select and use technology for particular purposes. Show an interest in toys with buttons and mechanisms. Begin to know about the simple working characteristics of materials and components. Begin to understand the movement of simple mechanisms such as levers and sliders.

Year 1

	Autumn	Spring	Summer
Overview	Food Technology (1) Winter Fair Product (2)	Mechanisms (1)	Food Technology (1) Structures (2)
Final Outcome	Bread (1) Wooden hanging/standing decorations. (2)	Diorama	Traditional foods from around the UK. (1) Photo Frame (2)
Key skills	Begin to understand that all food comes from plants and animals. (1) Sort and classify food into food groups – e.g. vegetables, pulses, cereals, dairy etc. (1) Talk about what happens when food is heated and cooled. (1) Measure and weigh accurately using cups and spoons. (1) Work safely and hygienically. (1)	Deconstruct a range of simple sliders and levers. Construct sliders independently. Make a lever by joining card strips with paper fasteners. Join simple levers to make linkages to create moving parts.	Construct a range of simple structures using simple construction kits. (2) Deconstruct and assemble the net of basic 3D shapes. (2) Make a structure more stable by strengthening the base. (2) Make square and rectangular frames from strip wood using triangular card joints. (2) Strengthen 2D frames by adding diagonal bracing struts. (2) Make a simple card hinge. (2) Use materials to make simple joints – glue, tape and paperclips. (2)
Key vocabulary	Vegetables, cereals, pulses, dairy, measure, weigh, hygiene. (1)	Slider, lever, join, fasteners	Structure, net, joints, bracing struts, hinge. (2)
Required resources	Flour, Yeast, Salt (1)	Card, Paper, Fasteners	Card, Wood strips. Glue (2)
Curriculum Links	History – Great Fire of London. (1)	Science – animal habitats.	Geography – learning about the UK. (1)
Trips/Extra activities	Winter Fair		

Year 2 Skills Overview

Design	Make	Evaluate	Technical Knowledge
Understanding context, users and purposes. Generating, developing, modelling and communicating ideas.	Practical skills and techniques. 	Consider and assess a product. 	Making a product work. 
Use knowledge of a range of products to support plans and designs. Talk about and disassemble products and describe their function. Use simple prototypes, labelled sketches and detailed instructions in plans and design. Talk in depth about ideas, plans and reasons for choices.	Select materials and components according to known characteristics and functions. Select and use an increasing range of tools to cut, shape and join materials and components. Use a ruler to measure and mark lines for cutting. Make and use gluing tabs. Make simple paper models mock-ups and templates. Select an appropriate way to improve the appearance of a product. Follow procedures for safety.	Investigate and compare a range of similar existing products. Compare and contrast the similarities and differences of products with the same function. Evaluate ideas and products against design criteria, and suggest ways in which products can be improved.	Begin to understand how freestanding structures can be made stronger, stiffer and more stable. Explore and use mechanisms such as levers, sliders, wheels and axles in products. Use the correct technical vocabulary for projects.

Year 2 Curriculum Content

	Autumn	Spring	Summer
Overview	Wheels, axles and pulleys (1) Winter Fair Product (2)	Food Technology (1)	Textiles (1)
Final Outcome	Edwardian toy car (1)	Party tarts	Seaside textile collage picture
Key skills	Construct cuboids of different sizes from a net. (1) Attach wheels to a chassis using an axle –e.g. cotton reels and dowel. (1) Attach a fixed axle to a chassis and add wheels ensuring that they can move freely. (1) Construct a simple pulley using rope over a horizontal bar to raise an object off the ground. (1) Construct a pulley that allows a load to travel horizontally along a rope. (1) Use construction kits with gears to construct a line of gears that turn. (1) Use construction kits with gears to mesh gears at right angles. (1)	Sort and classify an increasing range of food according to specific food groups e.g. proteins, carbohydrates, fats etc. Begin to identify where food groups come from – animals or plants. Know that everyone should eat at least 5 portions of fruit or vegetables every day. Measure and weigh using standard units and scales. Use techniques such as cutting, peeling and grating safely. Work safely and hygienically.	Talk about the similarities and differences between textiles based on the characteristics of an increasing range of materials. Use a simple template. Use a simple pattern with increasing accuracy. Join fabrics using glue, staples and thread. Cut and join fabrics using running stitch, buttons and bond web. Decorate fabric by applying beads and sequins.
Key vocabulary	Cuboid, axle, chassis, pulley, gears. (1)	Protein, carbohydrate, fats, standard units, cut, peel, grate, hygiene.	Running stitch, buttons, bond web, template, pattern.
Required resources	Dowel, wooden wheels, tech card, axle supports, hot glue sticks and gun, hacksaws, card elastic bands. (1)	Flour, fat … children to choose own fillings.	Felt, cotton, thread, needles, fabric glue, sequins, beads, netting, ribbon, aida.
Curriculum links	History – Titanic topic.		Geography – comparison of geographical areas.
Trips/Extra activities	Winter Fair		Science Festival (2)

Year 3 Skills Overview

Design	Make	Evaluate	Technical Knowledge
Understanding context, users and purposes. Generating, developing, modelling and communicating ideas.	Practical skills and techniques. 	Consider and assess a product. 	Making a product work. 
Use research to develop design criteria that are fit for purpose. Disassemble products and describe in detail their functions. Use annotated sketches, cross-sectional, exploded diagrams and increasingly complex prototypes. Support discussions about ideas, plans and designs with relevant information.	Select from and use a wide range of materials and components according to both functional and aesthetic qualities. Select and use tools and equipment to measure, mark out and shape materials and components. Insert paper fasteners for card linkages. Make increasingly complex paper models, mock-ups and templates. Select the most effective finish to enhance the appearance of a product. Follow procedures for safety.	Investigate and begin to analyse a range of existing products. Use knowledge of similarities and differences between products with the same function to support identification of most effective product. Evaluate ideas and products against own design criteria, taking into account the views of others.	Begin to know how to use learning from science and mathematics to help design and make products that work. Begin to understand that materials have functional and aesthetic qualities. Recognise that materials can be combined and mixed to create more useful characteristics. Begin to know how mechanical systems such as levers and linkages create movement.

Year 3 Curriculum Content

	Autumn	Spring 2	Summer
Overview	Winter Fair Product	Mechanisms	Food Technology (1) Textiles (2)
Final Outcome	A Christmas card with moving parts	Diorama of a scene from 'Charlotte's Web'.	Greek style bread products. (1) 'Greek' style purse – use of flap, button, strap etc.(2)
Key skills	Deconstruct and reconstruct a range of levers and sliders. Create a range of levers and sliders to produce horizontal and vertical movement. Combine sliders and levers to produce a range of movements.	Deconstruct and reconstruct a range of levers and sliders. Create a range of levers and sliders to produce horizontal and vertical movement. Combine sliders and levers to produce a range of movements.	Know that a healthy diet is made up of a variety and balance of different food and drink as depicted in the Eatwell Plate. (1) Understand that food has to be grown, farmed or caught – in Europe and the wider world. (1) Use a wider variety of ingredients and basic techniques to prepare and combine ingredients safely. (1) Prepare simple dishes – using a heat source if necessary. (1) Demonstrate hygienic food preparation and storage. (1) Convert measures and weigh using standard and imperial units. (1) Give reasons for the selection of fabrics and techniques based on knowledge of characteristics. (2) Support reasons for selections with justifiable evidence and facts. (2) Make and use a simple paper pattern that includes a seam allowance. (2) Join fabrics in a range of different ways using zips, tie clasps, toggles, press-studs and buttons. (2) Sew using a range of stitches such as running stitch and over sewing. (2)

			Use a wide range of techniques to add colour, texture and pattern to fabric. (2)
Key vocabulary	Lever, slider, mechanism, horizontal, vertical, pop-up.	Lever, slider, mechanism, horizontal, vertical.	Variety, balance, grown, reared, caught, ingredients, prepare, combine, hygiene, convert, standard, imperial (1) Fabric, seam, zips, toggles , press studs, over-sewing texture. (2)
Required resources	Card, paper, split pins, paint, felt tips, glue, double sided tape, decorative elements.	Card, paper, split pins, paint, felt tips, glue, double sided tape, decorative elements.	Flour, salt, yeast, olives, sundried tomatoes etc. (1) Fabric, selection of fastners (buttons, zips, toggles, press studs etc) thread, beads etc for decoration. (2)
Curriculum Links		English – 'Charlotte's Web' text.	Geography – Greek topic.
Trips/Extra activities	Winter Fair		

Year 4 Skills Overview

Design	Make	Evaluate	Technical Knowledge
Understanding context, users and purposes. Generating, developing, modelling and communicating ideas.	Practical skills and techniques. 	Consider and assess a product. 	Making a product work. 
Generate plans and designs based on research and ideas that take account of the users' views and the intended purpose. Produce detailed designs and plans using prototypes, commentary and diagrams that include accurate measurements. Link discussions about ideas, plans and designs to the investigation, disassembly and evaluation of a range of products describing in detail their parts and their function.	Select a range of appropriate tools to cut, shape and join materials and components effectively. Select and use tools and equipment to measure, mark out and shape materials and components accurately. Use a G clamp effectively. Use a hacksaw safely. Join and combine materials and components in permanent and temporary ways. Make a range of complex paper models, mock-ups and templates. Produce a well-finished product that fulfils the functional and aesthetic design criteria. Follow procedures for safety.	Investigate and use analysis of existing products to inform own work. Identify, from a range, the key features and functions needed to create an effective and efficient working product. Give reasons, supported by factual evidence, for the success of aspects of a product.	Use learning from science and mathematics to help design and make products that work. Understand that materials have functional and aesthetic qualities and apply this thinking to their own products. Know that mechanical systems such as levers and linkages create movement. Know that simple electrical circuits and components can be used to create functional products.

Year 4 Curriculum Content

	Autumn	Spring	Summer
Overview	Winter Fair Product (2a) Structures (2b)	Structures (cont) (1) Electrical and Mechanical Components (2)	Food Technology (1 & 2)
Final Outcome	Christmas stockings (2a) Greek Temples (2b)	Table top fan	Summer fruits crumble Summer fruits sorbet
Key skills	Deconstruct and assemble the net of a range of basic 3D shapes. (2b) Create nets of increasingly complex 3D shapes which include the addition of gluing tabs. (2b) Join 2D frames to create 3D structures. (2b) Reinforce and strengthen 3D frameworks using the concept of 'triangulation'. (2b) Make rectangular frames of different sizes using strip wood, reinforcing with cross braces. (2b) Use a range of materials to make joints e.g. card strips, elastic bands, thread, ties and plastic tubing. (2b) Explain in detail why some structures fail. (2b) Shape and stitch materials.(2a) Use basic cross- stitch and back stitch.(2a) Colour fabric. (2a)	Identify key features of electrical safety and discuss in depth these hazards and safety issues associated with electricity. Create and explore circuits incorporating a battery, bulb, switch, buzzer, motor and wires. Describe how circuits can be created and controlled. Explore and explain how the direction and speed of an electrical motor can be controlled.	Understand that to be active and healthy, food and drink are needed to provide energy for the body. Understand seasonality and the advantages of eating seasonal and locally produced food. Read and follow recipes that involve several processes, skills and techniques. Talk about the impact of changing proportions within a recipe and use knowledge of food and recipes to adapt or create new recipes. Talk in scientific terms about the physical and chemical changes that take place when food is cooked e.g. heated and cooled.
Key vocabulary	Net, 3D shapes, tabs, triangulation, reinforce, cross braces, joints. (2b)	Circuit, battery/cell, bulb, switch, buzzer, motor, wires, hazards.	Active, healthy, energy, seasonal, locally produced, proportions, physical and chemical changes, hygiene.

Required resources	Balsa wood, hot glue gun, glue sticks, wood glue, paper, card, craft knives, hacksaw, 1cmx1cm wood strips. (2b)	Batteries. wires, bulbs, motors, buzzers, bulb holders, battery holders.	Oats, brown sugar, flour, cinnamon, seasonal fruit, caster sugar.
Curriculum links	History – Ancient Greeks unit.	Science – Electricity unit.	Science – States of Matter unit.
Trips/Extra activities			Science Festival (2)

Year 5 Skills Overview

Design	Make	Evaluate	Technical Knowledge
Understanding context, users and purposes. Generating, developing, modelling and communicating ideas.	Practical skills and techniques. 	Consider and assess a product. 	Making a product work. 
Clarify and justify plans, designs and ideas by drawing upon and using a range of relevant sources of information. Produce detailed designs and plans drawn to scale from a range of viewpoints, using pattern pieces and computer aided design packages effectively. Discuss ways in which ideas, plans and designs are formed and modified to ensure that the design criteria are met effectively.	Select a range of appropriate tools to cut, shape and join materials with accuracy and precision. Use an increasing range of tools and equipment to measure, mark out and shape materials and components accurately. Use a drill to make an off-centre hole. Join and combine a range of materials and components using the most effective permanent and temporary way. Make (and adapt, where necessary) complex mock-ups and templates. Identify and apply an appropriate finishing technique to ensure a high quality end product which meets the design criteria. Follow safety procedures.	Use analysis of existing products supported by accurate, factual information to inform own work. Test and evaluate products to identify the variants, which may affect the function of a product. Give reasons, supported by factual evidence for the success of aspects of a product and provide considered solutions to resolve those parts that could be improved.	Use learning from science, mathematics and other subjects to help design and make products that work. Understand that materials have functional and aesthetic qualities and apply this thinking successfully to their own products. Know that mechanical and electrical systems have an input process and output. Program a computer to control their products. Make strong, stiff shell structures for a purpose.

Year 5 Curriculum Content

Overview	Electrical & Mechanical Components (1) Winter Fair Product (2)	Food Technology	Wheels, axles and pulleys. (2)
Final Outcome	Electric space buggy. (1) Christmas tea-light lanterns. (2)	Themed buttery biscuits.	Creating a machine to lift and carry materials for a den. (2)
Key skills	Explore and describe how switches can be used in a range of circuits to control components. (lights in a lighthouse, a movement sensor in a burglar alarm) (1) Explore and discuss ways in which electricity can be used to control movement. (1) Explore and use an increasing range of complex control systems e.g. (a light sensor) (1)	Know and understand the practice needed in terms of food hygiene and kitchen safety. Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable/tasty to eat. Know how to prepare and cook a range of predominately savoury dishes - where appropriate, use a heat source. Compare commercial and domestic processes for producing food e.g. bread. Use a range of techniques such as peeling and chopping. Weigh and measure dry ingredients and liquids accurately.	Describe in detail the way in which an axle and chassis help a vehicle to move. (2) Use a range of different ways to attach an axle to a chassis (card triangles, drilled holes, cable clips, pegs) (2) Design and build a working model where the direction of movement can be controlled. (2) Identify, describe and evaluate products that contain pulleys and drive belts. (2) Construct a pulley that allows a load to travel horizontally along a rope. (2) Use construction kits with gears to mesh gears at right angles. Explain how the number of teeth of a gear affects the speed of rotation. (2)
Key vocabulary	Components, control, circuit, sensor.	Processes, processed, palatable, savoury, commercial, domestic.	Axle, chassis, pulley, drive belt, gears, rotation. (2)
Required resources	Motors, wires, batteries, hot glue sticks, buzzers, bulbs, 1cm x 1cm wood strips, wooden wheels, axle supports, lynx jointers. (1)	Flour, sugar, butter, vanilla essence, eggs, decorations.	1cm x 1cm wood strips, dowel, wooden wheels, elastic bands, hot glue sticks, axle supports, lynx jointers. (2)
Curriculum Links	Science – Earth and Space unit.		Geography – Rainforest? (2)
Trips/Extra activities	K'Nex Challenge	K'Nex Challenge final.	

Year 6 Skills Overview

Design	Make	Evaluate	Technical Knowledge
Understanding context, users and purposes. Generating, developing, modelling and communicating ideas.	Practical skills and techniques. 	Consider and assess a product. 	Making a product work. 
Clarify and justify plans, designs and ideas by drawing upon and using a range of relevant sources of information. Produce detailed designs and plans drawn to scale from a range of viewpoints, using pattern pieces and computer aided design packages effectively. Discuss ways in which ideas. Plans and designs are formed and modify to ensure that the design criteria are met effectively.	Select a range of appropriate tools to cut, shape and join materials with accuracy and precision. Use an increasing range of tools and equipment to measure, mark out and shape materials and components accurately. Use a drill to make an off-centre hole. Join and combine a range of materials and components using the most effective permanent and temporary way. Make(and adapt where necessary) complex mock-ups and templates. Identify and apply an appropriate finishing technique to ensure a high quality end product which meets the design criteria. Follow safety procedures.	Use analysis of existing products supported by accurate, factual information to inform own work. Test and evaluate products to identify the variants, which may affect the function of a product. Give reasons, supported by factual evidence for the success of aspects of a product and provide considered solutions to resolve those parts that could be improved.	Use learning from science, mathematics and other subjects to help design and make products that work. Understand that materials have functional and aesthetic qualities and apply this thinking successfully to their own products. Know that mechanical and electrical systems have an input process and output. Program a computer to control their products. Make strong, stiff shell structures for a purpose.

Year 6 Curriculum Content

	Autumn 1	Spring	Summer
Overview	Structures	Mechanisms (pneumatics and cams)	Food Technology
Final Outcome	Scale model of a WWII air raid shelter (Anderson or Morrison style shelter).	Creating a moving model/toy of an animal suitable for a Y6 child to display.	Children to design and make their own 'fakeaway' (home cooked takeaway) –burger, kebeb, pizza, wrap etc.
Key skills	Create nets and templates accurately in a range of sizes. Select the most appropriate method to strengthen 3D structures and frames. Investigate, measure and record the load tolerance of different structures and find ways of improving a structures load-bearing capacity. Build a range of structures using a wide range of effective materials taking into account their respective properties. Apply a range of finishing techniques including those from art and design, to a broad range of materials.	Use a range of technical vocabulary to describe the properties and functions of mechanisms. Construct a pneumatic toy model with two moving parts. Generate questions to investigate and compare and analyse the efficiency of pneumatic systems. Describe the way in which a cam changes rotary motion into linear motion. Discuss the relationship between a cam and follower, an off-centre cam, a peg cam, a pear-shaped cam and a snail cam.	Understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health – including the implications of excess and deficiency. Know that seasons may affect the food available. Know that food is processed into ingredients that can be eaten or used in cooking. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading and kneading. Understand the principles of cleaning to prevent cross contamination, chilling foods thoroughly and reheating food until steaming hot. Know and understand the practice needed in terms of food hygiene and kitchen safety.
Key vocabulary	Properties, load tolerance.	Pneumatic, rotary motion, linear motion, cam, off-centre cam, peg cam, pear-shaped cam, snail cam.	Nutrients, fibre, deficiency, contamination, chilling, reheating.
Required resources	Card, tape, glue, paint, materials chosen at the time … eg netting, fabric etc.	Card, syringes, plastic tubing	Dependent on food choices made by children.
Curriculum links	History – WWII topic.	Science – Evolution and Adaptation unit – animals must have over exaggerated features based on evolution and adaptation.	Science – Autumn 1 – Living things and their habitats unit.
Trips/Extra activities	Winter Fair		