

Swindon Village Primary School





DT Curriculum

	Swindon Vill	age Primary School	DT Overview
	Autumn	Spring	Summer
EYFS	Create a rolling toy	Food Technology	Junk modelling
Year 1	Structures and Mechanism	Mechanisms	Food Technology
Year 2	Structures	Food Technology	Textiles
Year 3	Pneumatics	Mechanisms - Cams	Food Technology
Year 4	Textiles	Electrical and Mechanical Components	Food Technology
Year 5	Structures and Mechanics	Computing Microbits	Food Technology
Year 6	Structures	Mechanisms Gears	Food Technology

EYFS

We recognise that foundations for becoming designer makers are laid in the Early Years Foundation Stage through all seven strands of the Early Years Framework.

Design and technology				
Physical development	To use a range of tools	Painting, make making		
		and cutting with scissors.		
Physical development	To develop fine motor	Threading, pegs, peg		
	skills to use tools more	boards, tweezers, play-		
	accurately	dough and lego.		
Expressive arts and	To return to and build on	Junk modelling, being		
design	previous learning	able to talk about what		
	refining ideas and	they have made and the		
	developing their ability	materials they have		
	to represent them	chosen.		
Expressive arts and	Create collaboratively	Working with friends to		
design	sharing ideas, resources	purposefully create using		
	and skills	our imagination.		

Year 1 - 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 existing products to support plans for a similar product. Describe, explore and investigate products that have been disassembled. Use simple prototypes and labelled pictures 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. Join edge to edge using glue. 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. Show an interest in toys with mechanisms. Begin to know about the simple working characteristics of materials and components. Use the correct technical vocabulary for projects.

Year 1 - Curriculum Content

	Autumn	Spring	Summer
Overview	Structures	Mechanisms (levers, sliders, flaps, pulleys)	Food Technology
Final Outcome	Design and make a picture frame	Design and make a habitat diorama	Design and make a smoothie
Key skills	Construct a range of simple structures using simple construction kits. Investigate and evaluate	Identify and investigate a range of simple levers, sliders, flaps and pulleys using picture books. Make a lever by joining card string	Understand that food comes from plants and animals. Sort a variety of foods into healthy and unhealthy foods
	different ways to join materials - glue, tape and blutac. Construct simple frames from ready cut wood. Strengthen frame using triangular card (jinx corners).	 with paper fasteners. Join simple levers to make linkages to create moving parts. Construct a simple slider independently. Make simple flaps. Construct a simple pulley system with a vertical movement. 	Know that everyone should eat at least 5 portions of fruit or vegetables every day. Taste and describe the differences between foods. Measure and weigh accurately using cups and spoons. Use techniques such as chopping, peeling and grating safely. Begin to understand how to work safely and hygienically (wash hands and clean surfaces).
Key	Structure, join, jinx corner, strenothen	Diorama, lever, slider, flap, pulley, join	Healthy, unhealthy, measure, chop peel grate weigh hygienic
Required	Wood, glue, jinx corners	Shoeboxes, card, paper, paint, fasteners, Plasticene	Variety of fruits, knives, chopping boards, measuring cups/spoons
Curriculum Links		Science – animal habitats.	
Trips/Extra activities			

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 and labelled sketches to plan 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. Make and use gluing tabs. 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 structures can be made stronger, stiffer and more stable. Know about the simple working characteristics of materials and components. Use the correct technical vocabulary for projects.

Year 2 Curriculum Content

	Autumn	Spring	Summer
Overview	Structures and Mechanisms (wheels and axles)	Food Technology	Textiles
Final Outcome	Design and make a simple moving toy	Design and make party tarts with a pastry base	Design and make a seaside collage
Key skills	Deconstruct and assemble the net of basic 3D shapes. Construct cuboids of different sizes from given nets. Investigate how wheels and axles work (tech card, ready cut axles).	Begin to identify where food groups come from – animals or plants (above ground or underground). Describe how food is farmed, caught, home grown.	Talk about the similarities and differences between textiles based on the characteristics of an increasing range of materials. Use a simple pattern with increasing accuracy.
	Construct simple frames from ready cut wood. Strengthen frame using triangular card (jinx corners). Attach wheels to a chassis using an axle and axle hangers.	 Begin to sort and classify foods according to specific food groups in the Eatwell Plate e.g. proteins, carbohydrates, fats etc. Know that everyone should eat at least 5 portions of fruit or vegetables every day. Talk about what happens when food is heated and cooled. Measure and weigh accurately using cups and spoons. Use techniques such as chopping, peeling and grating safely and with increasing confidence. Describe and demonstrate how to work safely and hygienically. 	Cut and join fabrics using running stitch and bond web. Decorate fabric by applying beads or sequins.
Key vocabulary	Structure, join, jinx corner, strengthen, wheels, axles, axle hanger, net, 3D cuboid	Healthy, unhealthy, Eatwell plate, measure, chop, peel, grate, weigh, hygienic	Fabric, textile, similarity, difference, running stitch, needle, thread
Required resources	Wood (square and round dowel), glue, jinx corners, axle hangers, tech card	Variety of fillings, butter, flour, knives, chopping boards, measuring cups/spoons	Variety of fabrics, thread, needles, bond web, beads, sequins
Curriculum links			Geography - comparison of geographical areas.
Trips/Extra activities			

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	Select from and use a wide range of materials and components according to both functional and aesthetic qualities.	Investigate and begin to analyse a range of existing products. Use knowledge of similarities and	Begin to know how to use learning from science and mathematics to help design and make products that work.	
functions. Use annotated sketches and cross-sectional	Select and use tools and equipment to measure, mark out and shape materials and	differences between products with the same function to support identification of most	Begin to understand that materials have functional and aesthetic qualities.	
diagrams in plans and design.	components. Use a ruler to measure	effective product. Evaluate ideas and	Use the correct technical vocabulary for projects.	
Make increasingly complex prototypes.	and mark lines for cutting.	products against own design criteria, taking into account the views of others		
ideas, plans and designs with relevant information.	Select the most effective finish to	others.		
Know about some famous inventors/engineers/ designers/chefs of	enhance the appearance of a product.			
groundbreaking products.	Follow procedures for safety.			

Year 3 Curriculum Content

	Autumn	Spring 2	Summon
	Aurunin	Spring 2	Junimer
Overview	Pneumatics	Structures and Mechanisms (cams)	Food Technology
Final Outcome	Design and make a moving toy	Design and make a moving toy	Design and make own bread
Key skills	Explore how pneumatics work using pneumatics kits. Explore the component parts of simple pneumatic systems. Understand the use of pressurised air to create movement. Create a simple mechanical toy etc using pneumatics.	Investigate the variety of cams and their different movements. Identify and explore the component parts of a cam mechanism - cam, sliders and followers. Begin to cut wood to construct simple frames. Strengthen frame using triangular card (jinx corners). Attach wheels to a chassis using an axle and axle hangers. Investigate how to create vertical movement using a cam and simple wooden frame.	Understand that food has to be grown, farmed or caught - in Europe and the wider world. Sort and classify foods an increasing variety of foods according to specific food groups in the Eatwell Plate. Know that a healthy diet is made up of a variety and balance of different food and drink. Talk about what happens when food is heated and cooled. Measure and weigh using standard units and scales. Use techniques such as chopping, peeling, grating and kneading to prepare and combine ingredients safely. Demonstrate hygienic food preparation and storage.
Key vocabulary	Pneumatics, pressurised air, force, syringe, tubing	Structure, saw, cutting block, G clamp, safety, join, jinx corner, strengthen, wheels, axles, axle hanger, net, 3D cuboid, cam, slider, follower, vertical movement	Healthy, unhealthy, Eatwell plate, blanaced diet, measure, chop, peel, grate, knead, weigh, scales, units, hygienic, heat, cool, change
Required resources	Variety of syringes, tubing, connectors, balloons, boxes,	Wood (square and round dowel), glue, saw, cutting block, G clamp, jinx corners, axle hangers, tech card	Flour, salt, yeast, variety of flavourings, knives, chopping boards, bowls, scales
Curriculum Links			Geography – Greek topic.
Trips/Extra activities			

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. Use annotated sketches, cross-sectional diagrams in plans and design. Make increasingly complex prototypes. 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. Know about some famous inventors/engineers/ designers/chefs of groundbreaking products.	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 effectively. Produce a well-finished product that fulfils the functional and aesthetic design criteria. Follow procedures for	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. Use the correct technical vocabulary for projects.
	safety.		

Year 4 Curriculum Content

	Autumn	Spring	Summer
Overview	Textiles (link to Art Curriculum for progression)	Structures and Electrical	Food Technology
Final Outcome	Design and make a money holder	Design and make a desktop fan	Design and make a fruit crumble
Key skills	Give reasons for the selection of fabrics and techniques based on knowledge of characteristics. Make and use a simple paper pattern that includes a seam allowance. Sew using a range of stitches such as running stitch, backstitch and cross stitch. Use a range of techniques to add colour, texture and pattern to fabric.	Identify key features of electrical safety and discuss these hazards and safety issues associated with electricity. Create and explore circuits incorporating a battery, switch, motor and wires. Describe how circuits can be created and controlled. Cut wood to construct simple frames. Strengthen frame using triangular card (jinx corners) and vertical bracing.	Understand seasonality and the advantages of eating seasonal and locally produced food. Understand that to be active and healthy, food and drink are needed to provide energy for the body. Talk in scientific terms about the physical and chemical changes that take place when food is cooked e.g. heated and cooled. Measure and weigh using standard units and know that imperial units are also used in recipes. Read and follow recipes that involve several processes, skills and techniques. Use techniques such as chopping, peeling, grating, rubbing, destoning to prepare and combine ingredients safely. Talk about the impact of changing proportions within a recipe and use knowledge of food and recipes to adapt or create new recipes. Demonstrate hygienic food
Key vocabulary	Fabric, textile, similarity, difference, paper pattern, seam allowance, running stitch, back stitch, cross stitch, needle, thread, texture, pattern	Electrical safety, hazard, circuit, motor, wire, swtich, battery, structure, saw, cutting block, G clamp, safety, join, jinx corner, strengthen, vertical bracing	Seasonality, Eatwell plate, balanced diet, energy, change in state, physical and chemical change, weigh, scales, standard unit, imperial unit, chop, peel, grate, rub in, destone, recipe, adapt, hygienic

Required resources	Variety of fabrics, thread, needles, bond web, beads, sequins	Wood, glue, jinx corners, saw, cutting block, G clamp, wires, batteries, motors, switch	Flour, sugar, butter, oats, variety of fillings, knives, chopping boards, bowls, scales, cooking dishes
Curriculum links	History - Ancient Greeks	Science - Electricity	Science - States of Matter
Trips/Extra activities			Science Festival

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.	Select a range of appropriate tools to cut, shape and join materials with accuracy and precision.	Use analysis of existing products supported by accurate, factual information to inform own work.	Use learning from science, mathematics and other subjects to help design and make products that work.
Produce detailed designs and plans drawn to scale from a range of viewpoints. Make and adapt, where necessary, complex prototypes. Discuss ways in which ideas, plans and designs are formed and modify to ensure that the design criteria are met effectively. Know about some famous inventors/engineers/ designers/chefs of groundbreaking products.	Use an increasing range of tools and equipment to measure, mark out and shape materials and components accurately. Join and combine a range of materials and components using the most effective method. Identify and apply an appropriate finishing technique to ensure a high quality end product which meets the design criteria. Follow safety procedures.	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.	Understand that materials have functional and aesthetic qualities and apply this thinking successfully to their own products. Use the correct technical vocabulary for projects.

Year 5 Curriculum Content

Overview	Food Technology	Computing Microbit	Structures and Mechanisms
Final Outcome	Design and make a moving vehicle	Make and control a pedometer	(pulleys) Design and make a sayoury quiche
	with a pulley system		
Key skills	Construct a range of pulley systems using construction kits. Use ICT to identify, describe and evaluate products that contain pulleys.	Draw and design a code and attachment. Create a variable. Evaluate as an ongoing process.	Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable/tasty to eat. Understand that to be active and
	which an axle and chassis help a vehicle to move.	L	needed to provide energy.
	Investigate the effectiveness of a range of different ways to attach an axle to a chassis (card triangles, drilled holes, cable clips, pegs) Measure and cut wood to construct simple frames. Strengthen frame using triangular card (jinx corners) and diagonal bracing. Construct a pulley that allows a load to travel vertically or horizontally.		Talk in scientific terms about the physical and chemical changes that take place when food is cooked e.g. heated and cooled. Weigh and measure dry ingredients and liquids accurately. Read and follow recipes that involve several processes, skills and techniques. Use a range of techniques such as peeling, chopping, slicing, mixing and rubbing in. Understand the importance of pre-cooking (sautéing). Know and understand the practice needed in terms of food hygiene and kitchen safety.
Key vocabulary	Structure, saw, cutting block, G clamp, safety, join, jinx corner, strengthen, diagonal bracing, pulley, vertical, horizontal, axle, chassis, wheels	Algorithm, program, accelerometer, Micro:bit, USB, Make:code, processor, variable, loop, LED display, block coding	Seasonality, food origins, balanced diet, energy, change in state, physical and chemical change, weigh, scales, standard unit, imperial unit, chop, peel, slice, rub in, pre-cook (sauté), recipe, adapt, hygienic
Required resources	Ipads, pulley construction kits, wood, glue, jinx corners, wheels, pulleys, saw, cutting block, G clamp		Flour, butter, salt, cheese, eggs, milk, variety of fillings, knives, chopping boards, bowls, scales, quiche dishes
Curriculum Links	Geography - Rainforest	Computing	
Trips/Extra activities		K'Nex Challenge and 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.	Select a range of appropriate tools to cut, shape and join materials with accuracy and precision.	Use analysis of existing products supported by accurate, factual information to inform own work.	Use learning from science, mathematics and other subjects to help design and make products that work.				
Produce detailed designs and plans drawn to scale from a range of viewpoints. Make and adapt, where necessary, complex prototypes. Discuss ways in which ideas, plans and designs are formed and modify to ensure that the design criteria are met effectively. Know about some famous inventors/engineers/ designers/chefs of groundbreaking products.	Use an increasing range of tools and equipment to measure, mark out and shape materials and components accurately. Join and combine a range of materials and components using the most effective method. Identify and apply an appropriate finishing technique to ensure a high quality end product which meets the design criteria. Follow safety procedures.	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.	Understand that materials have functional and aesthetic qualities and apply this thinking successfully to their own products. Use the correct technical vocabulary for projects.				

Year 6 Curriculum Content

	Autumn	Summer	Summer
Quantian	Structures	Machanisma (Chanas)	Food Toology
Overview	Structures	Mechanishis (cranes)	rood rechnology
Final Outcome	Design, make and test the load tolerance of an Anderson/Morrison shelter	Making cranes	Design and make a fakeaway
Key skills	Use ICT and previous learning to identify the key features of an Anderson or Morrison shelter.	Use ICT to identify, describe and evaluate cranes.	Know that seasons may affect the food available.
	Create templates accurately in a range of sizes.	Explore end explain how cranes work (using Lego and K'nex). Design and make a crane with	Know that food is processed into ingredients that can be eaten or used in cooking.
	Select the most appropriate method to strengthen 3D structures and frames	wood.	Understand that different food and drink contain different substances - nutrients, water and
	Investigate, measure and record the load tolerance of different structures and find ways of	Evaluate process and end product.	fibre - that are needed for health - including the implications of excess and deficiency.
	improving a structures load- bearing capacity.		Talk in scientific terms about the physical and chemical changes that take place when food is
	a wide range of effective materials taking into account their respective properties.		Weigh and measure dry ingredients and liquids accurately.
	Apply a range of finishing techniques including those from art and design, to a broad range of materials.		Read and follow recipes that involve several processes, skills and techniques.
			Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading and kneading.
			Know and understand the practice needed in terms of food hygiene and kitchen safety.
			Understand the principles of cleaning to prevent cross contamination, chilling foods thoroughly and reheating food until steaming hot.
Key vocabulary	Structure, saw, cutting block, G clamp, safety, join, jinx corner, strengthen, diagonal bracing, load bearing capacity	Pulleys, levers, boom	Seasonality, food origins, balanced diet, energy, change in state, physical and chemical change, weigh, scales, standard unit, imperial unit, chop, peel, slice, grate, knead, pre-cook

Required resources	Wood, glue, jinx corners, saw, cutting block, G clamp, paper/paint for decoration/camouflage	Ipads, Lego, K'nex, wood, saws, glue, string.	(sauté), recipe, adapt, hygienic, cross contamination Variety of ingredients, knives, chopping boards, bowls, scales
Curriculum	History - WWII topic.		
links			
Trips/Extra			
activities			