

Design and Technology

	Reception	Year 1	Year 2
NC Objectives and ELGs	<ul style="list-style-type: none"> Safely use and explore a variety of materials (paper, card, foil, cellophane, glue, tape), tools (scissors, tweezers, cutlery) and techniques, experimenting with colour, design, texture, form and function Share their creations, explaining the process they have used. Listen attentively and respond to what they hear with relevant questions, comments and actions during whole class discussions and small group interactions. Make comments about what they have seen or heard and ask questions to clarify their understanding. Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher. 	<ul style="list-style-type: none"> Design simple products that work and look appealing. Discuss and draw ideas and use ICT to communicate. Use a range of tools and equipment to perform practical tasks safely e.g. cutting, punching holes and decorating. Use a range of materials and components, construction materials, card and ingredients, according to their characteristics e.g. scissors and children's knives. Explore existing products eg home, school. Discuss own ideas and designs. Start to build structures (GFoL), exploring ways to stiffen, stable and strengthen. Explore simple mechanisms (moving pictures). 	<ul style="list-style-type: none"> Design products for others and themselves that are purposeful, functional and appealing. Generate, develop, model and communicate ideas through talking, drawing, templates and ICT. Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, sticking and decorating. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics e.g. saws, needles and kitchen utensils. Explore and evaluate a range of existing products eg home, school. Evaluate own ideas and designs against given design criteria. Build structures (vehicle chassis), exploring ways to stiffen, stabilise and strengthen. Explore and use mechanisms eg levers, wheels and axles. Develop and practise sewing skills for joining (puppets).
Vocabulary	scissors, tweezers, knife, fork, spoon, paintbrush, tape, glue. Idea, shape, colour. Soft, hard, sweet, juicy, crunchy, smooth, bumpy, healthy, pizza, dough base, cheese, spread, sprinkle	plan, investigate, design, evaluate, make, assemble, build, join, split pin, flat, house, bungalow, dethatched, attached, roof, drawing, tape sticky, sour, hard, skin, seed, pip, core, slicing, peeling/peeler, hygiene cutting, healthy diet, ingredient, taste, texture. knife, chopping board, apples, bananas, pineapple, mango, oranges, blueberries, strawberries, grapes, melon	purpose, ideas, product, textiles, measure, score, sewing, stich, running stitch, needle, weave, wheels, axis, chassis, vehicle, label, chopping board, margarita, ham, pineapple, pepper, onion, mushroom, mozzarella, pepperoni, sweetcorn, spinach, butter, knife, baking tray

Skills	<ul style="list-style-type: none"> • Use a range of small tools, including scissors, paintbrushes, cutlery (knife, fork, spoon) and tweezers. 	<ul style="list-style-type: none"> • With support, learn to use hand tools (scissors) and kitchen equipment (knives) safely and appropriately and learn to follow hygiene procedures; • Use a range of materials and components, including textiles and food ingredients. • Cut materials with accuracy using scissors. • Assemble, join and combine materials (split pins / glue), components or ingredients (fruits). • Use peelers to peel and cut ingredients using knives. • Begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations. 	<ul style="list-style-type: none"> • With increasing independence, learn to use hand tools (scissors) and kitchen equipment (knives) safely and appropriately and learn to follow hygiene procedures; • Use a range of materials and components, including textiles and food ingredients; • With help, measure and mark out; cut, shape and score materials with some accuracy • Assemble, join and combine materials, components or ingredients using glue and stitches • Demonstrate how to cut, shape and join fabric to make a simple product • Use a basic running stitch • Cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups • Begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations
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Food - fruit and pizzas

1. Can you name the different fruits in Handa's Surprise?
2. Can you describe the size, shape, colour, taste and texture of the fruits from Handa's Surprise?
3. Can you explain what your favourite fruit from Handa's Surprise is and why?
4. Can you design your own pizza?
5. Can you spread tomato puree/sprinkle cheese, herbs, toppings?

Homes - The Three Pigs and Minibeasts

1. Can you describe what the Three Little Pigs made their houses from?
2. Can you design and build a house for the pigs?
3. Did your house blow over? Why/why not?
4. Can you describe features of an old house (cottage) and a new house?
5. Can you describe where minibeasts live? Why do they live there?
6. Can you build a bug hotel? What will you need and why?

A chair for Baby Bear

1. Can you describe what happened to Baby Bear's

Food - fruit salads

1. Can you sort the different foods into different groups by describing their taste, colour and shape. Can you identify different fruits (apples, bananas, pineapple, mango, oranges, blueberries, strawberries, grapes and melon) and explain your preferences?
2. Can you design a fruit based on your taste preferences and identify what ingredients and tools you will use (chopping board and butter knife)?
3. Can you identify and follow the rules for safety and hygiene? (Tie hair back and wash hands)
4. Can you make a fruit salad by correctly chopping a variety of selected fruits?
5. Can you evaluate your fruit salad based on taste?

Homes

1. Can you identify and name a range of houses (flat, house, bungalow, detached, attached)?
2. Can you investigate and explore different old and new houses and explain how we know that these are different?
3. Can you design a Tudor house (white walls on the front with wood work on the front and a pointed roof)?
4. Can you make a Tudor house following a plan?
5. Can you use several types of equipment safely (scissors / tape) to create your own Tudor style house?
6. Can you evaluate your house relating it to likeness of a Tudor house and why it is stable?

Moving pictures

1. Can you identify and name a range of mechanisms (sliding, pivot and lever)?
2. Can you investigate and explore different mechanisms (sliding, pivot and lever) and how they work?
3. Can you design a moving picture with a previously taught mechanism and justify why you have chosen that mechanism?

Food

1. Can you design, make and evaluate a pizza?
2. Can you identify and follow rules for food safety and hygiene? (Tie hair back, wash hands and clean surfaces)
3. Can you children say different types of pizza (margarita, veg, ham and pineapple and pepperoni) and their preferences they like?
4. Can you identify what ingredients they will use (pepperoni, pineapple, ham, mozzarella, cheddar, mushroom, tomato, sweetcorn, peppers, spinach) and the tools they will use? (butter knife, baking tray)

Puppets

1. Can you identify and name a range of Puppets? (finger, hand and shadow puppets)
2. Can you investigate and explore different ways we join fabrics together? (Glue, sew)
3. Can you design a puppet?
4. Can you use different types of equipment safely? (needles and thread)
5. Can you make a Puppet using the running stitch and add decoration by following a plan?
6. Can you evaluate your finished puppet by working out what went well and what could be improved?

Vehicles

1. Can you define the terms and investigate the different ways we use wheels, axis and chassis and recognise them on vehicles?
2. Can you design a vehicle with wheels, axles and chassis, as well as a body?
3. Can you use different types of equipment safely? (scissors, glue, card and wood)
4. Can you make a vehicle following a plan using the words above and including a base?
5. Can evaluate your finished vehicle by writing what went well and what could be improved?

	<p>chair? Why did this happen?</p> <p>2 Can you design and build a chair for Baby Bear? What will you build it out of and why?</p>	<p>4. Can you use different types of equipment safely (split pins and scissors)?</p> <p>5. Can you make a moving picture following a plan and using equipment?</p> <p>6. Can you evaluate your finished mechanism and suggest what worked well and what could be improved?</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Food and Nutrition</p>	<ul style="list-style-type: none"> • Begin to understand where food comes from • Begin to identify food that is healthy and food that is unhealthy 	<ul style="list-style-type: none"> • Begin to understand where food comes from. • Prepare simple dishes using knowledge of healthy food. 	<ul style="list-style-type: none"> • Use basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Themes</p>	<p>Handa's Surprise - fruit tasting Pitta bread pizzas Build a chair/build a house - Once Upon a time Build a bug hotel - Minibeasts</p>	<p>PlanBee Homes - Great fire of London Moving Pictures - Christmas Eat fruit - salads - Space</p>	<p>PlanBee Puppets - hot and cold Vehicles - transport Perfect Pizzas - Pirates</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Enrichment</p>	<p>Use of the DT room. Helpers with cooking experience. Healthy Tuck Shop</p>	<p>Use of the DT room. Helpers with cooking experience. Healthy Tuck Shop</p>	<p>Use of the DT room. Healthy Tuck Shop</p>

	Year 3	Year 4	Year 5	Year 6
NC Objectives	<ul style="list-style-type: none"> • Communicate ideas using different strategies eg discussion, sketch. • Use research to inform design. • Take design risks to become innovative and resourceful. • Select and use a wide range of tools and techniques for making their product safely, explaining their choices. • Use a wide range of materials and components and start to join and them accurately in temporary and permanent ways. • Evaluate own ideas and designs against given design criteria and consider the views of others to improve their work. • Investigate a range of existing products that address real/relevant problems, in a range of contexts eg home, leisure, school. • Apply understanding of how to strengthen, stiffen and reinforce structures (photoframes/ monster). • Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement (moving monsters). 	<ul style="list-style-type: none"> • Communicate, generate and develop ideas using a range of strategies eg prototypes, pattern pieces. • Use research to inform design and develop design criteria. • Take design risks to become innovative and resourceful. • Using appropriate tools and equipment, know how to measure, mark out, cut and shape a range of materials. • Use a wide range of materials and components and start to join and them accurately in temporary and permanent ways. • Sew using a range of different stitches. • Evaluate own and others' work suggesting improvements and consider the views of others to improve their work. • Investigate a range of existing products in a range of relevant contexts eg culture, industry. • Apply understanding of how to strengthen, stiffen in order to reinforce more complex structures (alarms). • Use computing to program, monitor and control products (Computing links). • Use understanding of electrical systems (Alarms - series circuits, switches, bulbs and motors). • Learn how to sew using a range of different stitches in order to join two pieces of fabric e.g. running stitch, oversewing and backstitch. 	<ul style="list-style-type: none"> • Communicate, generate, develop and model ideas using a range of strategies eg computer-aided-design, cross-sectional and exploded diagrams. • Use research to inform design and generate own design criteria. • Communicate, generate and develop ideas, drawing on other disciplines eg science, maths, computing. • Confidently take calculated risks to become innovative, resourceful and enterprising. • Select appropriate materials, tools and techniques e.g. cutting, sawing, joining and decorating. • 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. • Generate own design criteria and evaluate ideas and products against these Investigate and analyse a range of existing products that address real/relevant problems, in a range of relevant contexts. • Understand how key events and individuals in D&T helped to shape the world. • Drawing on disciplines & making connections to wider subject areas, apply understanding of computing to program, monitor and control products (Computing links). • Making connections to real & relevant problems, apply understanding of wider range of 	<ul style="list-style-type: none"> • Communicate, generate and develop ideas, drawing on other disciplines eg science, maths, computing. • Use research to inform innovative design and generate own design criteria. • Confidently take calculated risks to become innovative, resourceful and enterprising. • Select from and use a wider range of tools and equipment to perform practical tasks accurately e.g. cutting, sawing, constructing and decorating. • Select from and use a wider range of materials and components, including construction materials, motors and ingredients, according to their functional properties and aesthetic qualities. • Generate own design criteria and critique ideas and products against these. • Explain and understand how key events and individuals in D&T helped to shape the world. • Construct more complex structures by applying range of strategies in order to solve real/relevant problems. • Making connections to real & relevant problems, apply understanding of wider range of mechanical systems (gears, pulleys, cams, levers and linkages). • Making connections to real & relevant problems, apply understanding of electrical

			<p>mechanical systems (gears, pulleys, cams, levers and linkages).</p> <ul style="list-style-type: none"> Learn how to sew using a range of different stitches in order to create a drawstring e.g. running stitch, oversewing and backstitch. 	<p>systems (series circuits, switches, bulbs and motors).</p>
Vocabulary	<p>model, annotated sketch, functional, innovative, design criteria, appealing, utensils, texture, sour, appearance, smell, preference, savoury, edible, processed, varied diet, pneumatic system, tubing, syringe,</p>	<p>equipment, hot, spicy, greasy, moist, fresh, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, back stitch, oversewing, thread, right side, wrong side, hem, circuit, series, parallel, switch, crocodile clip</p>	<p>design decisions, design specification, research, mock-up, yeast, dough, flour, wholemeal, unleavened, sugar, carbohydrate, protein, nutrition, varied, gluten, dairy, allergy, intolerance, source, combine, fold, knead, proving, stir, pour, rubbing in, roll out, shape, whip stitch, blanket stitch, embroider, applique, channel, seam, cam, follower, doweling, saw, clamps, glue gun</p>	<p>user, design brief, authentic, vitamins, nutrients, whisk, beat, sprinkle, crumble, mince, beef, turkey, chicken, fish, plant-based, burger, patty, spatula, frying pan, beams, span, pillars, lattice, warren, pratt,</p>
Skills	<ul style="list-style-type: none"> Learn to use a range of tools and equipment safely and appropriately (scissors). Use a wider range of materials and components, including construction materials and kits. With growing independence, measure and mark out to the nearest cm. Cut and shape materials with some degree of accuracy. Join materials with some degree of accuracy Demonstrate how to measure and cut with some accuracy to make a simple product 	<ul style="list-style-type: none"> Learn to use a range of tools and equipment safely and appropriately (needles, scissors, electrical components) Use a wider range of materials and components, including construction materials and kits, textiles and electrical components With growing independence, measure and mark out to the nearest cm Cut and measure materials with some degree of accuracy Demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product Join textiles with an appropriate sewing technique Begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming and digital graphics. 	<ul style="list-style-type: none"> Learn to use a range of tools and equipment safely and appropriately (oven, scales, measuring spoons, needles, saws, g clamps, scissors, glue guns) Learn to follow hygiene procedures when cooking. Independently take exact measurements (wood) and mark out, to within 1 millimetre. Cut a range of materials with precision and accuracy. Assemble, join and combine materials, kits, textiles and components with accuracy. Demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product. Join textiles using backstitch and oversewing stitches. Refine the finish using techniques to improve the appearance of their 	<ul style="list-style-type: none"> Learn to use a range of tools and equipment safely and appropriately (saws, glue guns, g clamps, scissors). Learn to follow hygiene procedures. Independently take exact measurements (wood) and mark out, to within 1 millimetre. Cut a range of materials with precision and accuracy. Assemble, join and combine materials and components with accuracy. Refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.

			product, such as sanding or a more precise scissor cut after roughly cutting out a shape.	
Key Questions	<p>Food - Sandwich snacks</p> <ol style="list-style-type: none"> 1.Can you design a sandwich with a sandwich filler? 2.Can you identify and follow rules for food safety and hygiene - where to store food in a fridge. 3.Can the you sort foods into different food groups - fruits and vegetables, carbohydrates, protein, dairy, fats? 4.Can the you categorise food into healthy and unhealthy and suggest for a balanced diet? 5.Can you recognise different types of bread (white, wholemeal, rye, granary, bagel, baguette, naan bread) sandwich fillings (cheese, ham, tomato, lettuce, tuna mayonnaise, cucumber, egg mayonnaise) and their preferences they like? 6.Can you identify what ingredients and tools they will use? (sharp knife, butter knife, plate). 7. Can you make a sandwich with a sandwich filling? 8. Can you evaluate their sandwich and identify what you liked and what you would improve? <p>Moving monsters</p> <ol style="list-style-type: none"> 1.Can you identify and name a range of objects that use air? (a bicycle pump, pneumatic drill and pipe organ) 	<p>Food - Seasonal food</p> <ol style="list-style-type: none"> 1.Can you design, identifying tools and ingredients needed, a stuffed pepper using seasonal food (autumn)? 2.Can you identify and follow rules for food safety and hygiene - basic understanding of cross contamination. 3.Can you sort foods into the food groups and relate this to a balanced diet? 4.Can you recognise different types of seasonal (autumn) food (potato, pepper, onion, pumpkin, carrot) and explain their preferences? 5. Can you make a stuffed pepper by cutting ingredients and adding it to a pepper? 6. Can you evaluate their stuffed pepper and identify what they liked/disliked and what they would improve? <p>Money containers (Greeks)</p> <ol style="list-style-type: none"> 1.Can you identify and name a range of money containers (purse, wallet, bumbag)? 2. Can you investigate and explore a range of different stitches (running, back, over)? 3. Can you design a money container following a brief? 4. Can you use different types of equipment safely? (needle, scissors) 5. Can you make a money container following a plan using an over sewing stitch and textiles (felt)? 	<p>Food - Bread</p> <ol style="list-style-type: none"> 1.Can you design a bread roll considering which flavours complement each other? 2.Can you identify and follow rules for food safety and hygiene - correct use of oven and oven gloves. 3.Can you recognise different types of bread (flat bread, loaved bread, rolls, ciabatta) and explain their preferences they like? 4.Can you identify what ingredients (flour, yeast, salt, water, honey, raisins, tomato, olives, cheese) and tools (oven, scales, measuring spoons) they will use? 5.Can you make a bread roll by mixing the ingredients and kneading them, then shaping their bread roll after proving? 6.Can you evaluate their bread, deciding which flavours worked well together and what they would change? <p>Fashion and Textiles</p> <ol style="list-style-type: none"> 1.Can you identify and name a range of different textiles and materials (cotton, nylon, polyester, wool, fabric)? 2. Can you investigate and explore different ways of joining materials (fabric glue, back stitch, oversewing)? 3. Can you design a drawstring bag for a purpose? 	<p>Food - Burgers</p> <ol style="list-style-type: none"> 1.Can children design a burger based on flavours that complement each other and dietary requirement. 2.Can children identify and follow rules for food safety and hygiene? - an understanding of the importance of safety around dietary requirements. 3.Can the children sort foods into different food groups and understand where calories come from and the impact this has on nutritional value. 4. Can the children recognise different types of burger (beef, chicken, fish, plant based) ingredients and explain their preferences. 5.Can children identify what ingredients and tools they will use? (chosen filling, eggs, bread crumbs, spatula, bowl, frying pan). 6. Can children make a burger by mixing the ingredients, binding and shaping them? 7. Can children evaluate their burger deciding which flavours worked well, what they would change and how it met dietary requirements. <p>Building Bridges</p> <ol style="list-style-type: none"> 1.Can you identify ways in which pillars and beams are used to span gaps? Can you investigate which shapes make the

	<p>2. Can you investigate and explore different pneumatic systems to control movement? 3. Can you design a pneumatic system? 4. Can you use different types of equipment safely? (scissors) 5. Can you make a pneumatic system following a plan? 6. Can you evaluate your finished product of a pneumatic system and identify what you liked and what you would improve?</p> <p>Photo frames 1.Can you identify and name a range of free-standing objects that are stable? (musical stand, necklace stand and clothes drier) 2. Can you investigate and explore different stable and sturdy free-standing structures? (table, chair and pyramid) 3. Can you design a stable strong structure of a photo frame? 4. Can you use different types of equipment safely? (scissors) 5. Can you make a stable photo frame following a plan? 6. Can you evaluate your finished product of a stable photo frame and identify what you liked and what you would improve?</p>	<p>6. Can you evaluate your finished product of a money container and identify what you liked/disliked and what they would improve?</p> <p>Light (Victorians) 1.Can you identify and name a range of circuits? (series, parallel) 2. Can you design a working circuit with a light controlled by a switch? 3. Can you use different types of equipment safely? (crocodile clips, switches, bulbs, cells) 4. Can you make working circuit with a light controlled by a switch following a plan? 5. Can you evaluate your finished product of a circuit and identify what you liked/disliked and what they would improve?</p>	<p>4. Can you use different types of equipment safely (scissors, needles, needle threader)? 5. Can you make a drawstring bag following a plan using felt sewn with backstitch for the seams and creating a channel for the cord? 6. Can you evaluate your finished product of a drawstring bag based on how well the bag holds its contents and can be opened and closed?</p> <p>Moving Toys 1.Can you identify and name a range of different toys with cam mechanisms (https://www.youtube.com/playlist?list=PLvCYdoiwf1_DMjYFVnIREMymcbh4JbUd)? 2. Can you investigate and explore different ways of creating a cam mechanism (oval cam, snail drop cam, off-centre axle in circle)? 3. Can you design a moving toy with a cam mechanism? 4. Can you use different types of equipment safely (saws, g clamps, scissors, glue gun)? 5. Can you make a toy with a cam mechanism following a plan? 6. Can you evaluate your finished product of a moving toy?</p>	<p>strongest pillars? 2. Can you explore way that arches are used to strengthen bridges? 3. Can you explore ways in which trusses can be used to strengthen bridges (lattice, warren and pratt) 4. Can you design a bridge to go over the Amazon river? 4. Can you use different types of equipment safely? (scissors) 5. Can you make a bridge following a plan? 6. Can you evaluate your finished product of a bridge stating what worked well, what you would improve and whether the bridge was able to stand freely.</p> <p>Fairground Toys 1.Can you identify and name a range of existing fairground rides that use rotation - big wheel, waltzers, tea cups, carousel, chair swing. 2. Can you investigate and explore electrical motors to create rotating parts using a pulley system? 3. Can you design a fairground ride with a rotating part? 4. Can you use different types of equipment safely? (saw, g-clamps, craft knife, scissors, glue guns) 5. Can you make a fairground ride following a plan? 6. Can you evaluate your finished product of a fairground ride?</p>
<p>Food and Nutrition</p>	<p>Apply principles of a healthy, varied diet when preparing savoury dishes.</p>	<p>Understand and apply the principles of a healthy and varied diet. Apply understanding of seasonality and its link to ingredients.</p>	<p>Understand and apply the principles of a healthy and varied diet.</p>	<p>Understand and apply the principles of a healthy and varied diet.</p>

	Consider how to use ingredients which complement each other.	Know where and how a variety of ingredients is grown, reared, caught and processed.	Prepare and cook a savoury dish using a range of cooking techniques e.g. kneading, mixing, rolling and shaping.	Prepare and cook a savoury dish using a range of cooking techniques e.g. cutting, chopping, mixing and shaping.
Themes	PlanBee Moving Monster - Vikings Photo Frames - Egyptians Sandwich Snacks - UK Anglo Saxons	PlanBee Money Containers - Greeks Lights (discrete) - Victorians Seasonal Foods - Romans	PlanBee Bread - Tudors Fashion and Textiles - Americas Moving Toys - Natural World	PlanBee Building Bridges - South and Central America Burgers - WW2 (also WW2 rationing food) Fairground - Swindon throughout the ages
Enrichment	Look at designers and inventors. Use of the DT room. Helpers with cooking experience. Healthy Tuck Shop	Look at designers and inventors. Use of the DT room. Helpers with cooking experience. Healthy Tuck Shop	Look at designers and inventors. Use of the DT room. Helpers with cooking experience. Healthy Tuck Shop	Look at designers and inventors. Use of the DT room. Helpers with cooking experience. Healthy Tuck Shop