<u>D.T</u>

Progression of Knowledge and Skills



Nursery	Reception
Self-confidence and Self-awareness	Self-confidence and Self-awareness
22-36	40-60+
Expresses own preferences and interests.	Confident to speak to others about own needs, wants, interests and
30-50	opinions.
Can select and use activities and resources with help.	Can describe self in positive terms and talk about abilities.
Shows confidence in asking adults for help	Early Learning Goal
Understanding the World: The World	Children are confident to try new activities and say why they like some
22-36	activities more than others. They are confident to speak in a familiar
Notices detailed features of objects in their environment.	group, will talk about their ideas, and will choose the resources they
30-50	need for their chosen activities. They say when they do or don't need
Can talk about some of the things they have observed such as plants,	help.
animals, natural and found objects.	Understanding the World: The World
Talks about why things happen and how things work	40-60+
Understanding the World: Technology	Looks closely at similarities, differences, patterns and change.
22-36	Early Learning Goal
Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls	Children know about similarities and differences in relation to places,
back on a friction car.	objects, materials and living things. They talk about the features of their
30-50	own immediate environment and how environments might vary from
Knows how to operate simple equipment	one another
Shows an interest in technological toys with knobs or pulleys, or real	Understanding the World: Technology
objects such as cameras or mobile phones.	40-60+
Shows skill in making toys work by pressing parts or lifting flaps to	Completes a simple program on a computer.
achieve effects such as sound, movements or new images.	 Uses ICT hardware to interact with age-appropriate computer software.
Expressive arts and design: Exploring using media and materials	Early Learning Goal
22-36	Children recognise that a range of technology is used in places such as
Experiments with blocks, colours and marks.	homes and schools. They select and use technology for particular
30-50	purposes.
Uses various construction materials.	Expressive arts and design: Exploring using media and materials
Beginning to construct, stacking blocks vertically and horizontally,	40-60+
making enclosures and creating spaces.	Manipulates materials to achieve a planned effect.
Joins construction pieces together to build and balance.	• Constructs with a purpose in mind, using a variety of resources.
Realises tools can be used for a purpose.	 Uses simple tools and techniques competently and appropriately.
Expressive arts and design: Being Imaginative	• Selects appropriate resources and adapts work where necessary.
22-36	• Selects tools and techniques needed to shape, assemble and join
Beginning to use representation to communicate, e.g. drawing a line	materials they are using.

and saying 'That's me.'

• Beginning to make-believe by pretending

30-50

- Builds stories around toys, e.g. farm animals needing rescue from an armchair 'cliff'.
- Uses available resources to create props to support role-play.
- Captures experiences and responses with a range of media,

Early Learning Goal

• They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Expressive arts and design: Being Imaginative 40-60+

- Chooses particular colours to use for a purpose.
- Plays cooperatively as part of a group to develop and act out a narrative.

Early Learning Goal

• Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.

Exploring Context		
Year 1 and 2	Year 3 and 4	Year 5 and 6
Objectives Y1 Understand what a product is and who it is for. Understand how a product works and how it is used. Identify where you might find this product. Y2 Understand what a product is and who it is for. Understand how a product works and how it is used. Identify where you might find this product. Identify the materials used to make the product Express an opinion about the product	Objectives Y3 Identify who made the product, when it was made and what its purpose is. Identify what the product has been made from. Evaluate the product on design and use. Research facts about famous inventors/chefs/designers linked to the product. Y4 Identify who made the product, when it was made and what its purpose is. Identify what the product has been made from. Evaluate the product on design and use. Research facts about famous inventors/chefs/designers linked to the product.	Objectives Y5 Identify who made the product, when it was made and what its purpose is. Identify what the product has been made from and how environmentally friendly the materials are. Evaluate the product on design, appearance and use. Identify the cost to make the product. Research facts about famous inventors/chefs/designers linked to the product. Y6 Identify who made the product, when it was made and what its purpose is. Identify what the product has been made from and how environmentally friendly the materials are. Evaluate the product on design, appearance and use. Identify the cost to make the product and whether it has any other purposes e.g. leading innovation of the time, trend setting. Research facts about famous inventors/chefs/designers linked to the product.

Design		
Year 1 and 2	Year 3 and 4	Year 5 and 6
 Objectives Y1 Develop purposeful products based on criteria, explaining who it will be for. Develop ideas through talking. Model and communicate ideas through drawing and making models. Y2 Develop purposeful products based on criteria, explaining who it will be used by. Develop ideas through talking and own experiences and existing products. Model and communicate ideas through drawing and making models. Use technology to communicate ideas. 	Objectives Y3 • Use given research tool to develop designs, showing an understanding of what people want from a product. • Develop innovative, functional and appealing products that are designed for a particular purpose, describing how it will work. • Generate, develop and communicate ideas through discussion with others. • Use annotated sketches and technology to generate, develop and communicate ideas. Y4 • Use given research tool to develop designs, showing an understanding of what people want from a product. • Generate realistic ideas that meets the needs of the user and considers availability of resources. • Develop innovative, functional and appealing products that are designed for a particular purpose, describing how it will work. • Generate, develop and communicate ideas through discussion with others. • Use prototypes, pattern pieces and technology to generate, develop and communicate ideas. • Order the main stages of making	• Use research and develop criteria to inform design. Develop innovative, functional and appealing products that are aimed at individuals or groups. • Describe the purpose of their product. • Generate, develop, and communicate ideas through discussion, actively seeking the views of others. • Use annotated sketches, prototypes, pattern pieces and technology to generate, develop, model and communicate ideas. • Record a step-by-step plan for making and produce lists for the tools, equipment and materials they will be using. • Choose materials to use based on suitability of their properties and aesthetic qualities. Y6 • Use research and develop criteria to inform design. • Develop innovative, functional and appealing products aimed at individuals or groups. • Generate, develop, and communicate ideas through discussion, actively seeking the views of others. • Use annotated sketches, cross- sectional and exploded diagrams, prototypes, pattern pieces and technology to generate, develop, model and communicate ideas. • Record a step-by-step plan for making and produce lists for the tools, equipment and materials they will be using. • Choose materials to use based on suitability of their properties and aesthetic qualities.

Make		
Year 1 and 2	Year 3 and 4	Year 5 and 6
Year 1 and 2 Objectives Y1 Fold, tear and cut paper and card. Cut along lines, straight and curved. Use a hole punch. Investigate temporary joining - fixed and moving. Join appropriately for different materials and situations e.g. glue, tape etc. Explore and use a wide range of different materials according to their characteristics. Y2 Mark out materials to be cut using a template. Curl paper. Insert paper fasteners for card linkages. Create hinges. Use simple pop ups. Explore different ways of finishing their product. Choose materials to use based on suitability of their properties. Choose suitable tools for making whilst explaining why they should be used.	Objectives Y3 Cut slots. Use lolly sticks/card to make levers and linkages. Measure, mark, cut and shape materials with some accuracy. Join, assemble and combine materials and components with some accuracy. Create pattern pieces and prototypes. Choose suitable tools for making whilst explaining why they should be used. Y4 Cut internal shapes. Use linkages and sliders to make movements larger or more varied. Use and explore complex pop-ups. Create nets to support the design process. Measure, mark, cut and shape materials with some accuracy. Join, assemble and combine materials and components with some accuracy.	Year 5 and 6 Objectives Y5 Cut slots. Join and combine materials with temporary, fixed or moving joinings. Use a glue gun with close supervision. Use nets and models to build prototypes. Select from a wide range of materials based on functional and aesthetic properties. Explore and use different finishes considering the aesthetics of their product. Create pattern pieces and prototypes. Choose suitable tools for making whilst explaining why they should be used. Y6 Cut slots. Join and combine materials with temporary, fixed or moving joinings. Use a glue gun with close supervision. Use nets and models to build prototypes. Select from a wide range of materials based on functional and aesthetic properties.
	 Explore and evaluate different ways of joining materials. Explore different finishes for their product using a range of materials. 	 Explore and use different finishes considering the aesthetics of their product. Create pattern pieces and prototypes. Choose suitable tools for making whilst explaining why they should be used. Demonstrate problem solving skills when encountering a mistake or practical problem.

Evaluate		
Year 1 and 2	Year 3 and 4	Year 5 and 6
 Objectives	Objectives Y3 • Evaluate their ideas and products against design criteria and seek the views of others to improve their work. • Understand how key events and individuals in design technology have helped to shape the world. Y4 • Investigate and evaluate a range of existing products, for a variety of purposes. • Evaluate their ideas and products against design criteria and seek the views of others to improve their work. • Understand how key events and individuals in design technology have helped to shape the world.	Objectives Y5 Investigate and analyse a range of existing products based on functional qualities. Evaluate their ideas and products against their own design criteria. Actively seek and consider the views of others to improve their work. Understand how key events and individuals in design technology have helped to shape the world. Y6 Investigate and analyse a range of existing products based on functional and aesthetic qualities. Evaluate their ideas and products against their own design criteria. Actively seek and consider the views of others to improve their work. Understand how key events and individuals in design technology have helped to shape the world.

Technical Knowledge		
Year 1 and 2	Year 3 and 4	Year 5 and 6
Objectives Y1 To be able to build simple structures Explore ways of making their structure stronger, stiffer and more stable. Understand that food comes from plants and animals. Understand that food has to be farmed, caught or grown. Y2 Make vehicles with construction kits Use a range of materials to create models with wheels and axles. Explore and use sliders and levers in their products. Understand that food comes from plants and animals. Understand that food has to be farmed, caught or grown.	Objectives Y3 Use mechanical systems in their products (Eg: levers, linkages). Create shell or frame structures. Understand which foods are reared, caught or grown and that this happens in the UK and across the globe. Understand that the seasons can affect produce. Y4 Incorporate a circuit with a bulb or buzzer into a model. Use mechanical systems in their products (Eg: levers and linkages) Create shell or frame structures - strengthen frames with diagonal struts. Make structures more stable by giving them a wide base. Prototype frame and shell structures. Understand which foods are reared, caught or grown and that this happens in the UK and across the globe. Understand that the seasons can affect produce.	Objectives Y5 • Understand and use mechanical systems in their products (Eg: gears, pulleys and cams). • Apply their understanding of how to reinforce and strengthen increasingly complex structures using a range of materials. • Understand which foods are reared, caught or grown and that this happens in the UK and across the globe. • Understand that the seasons can affect produce. • Understand that sometimes raw ingredients need to be processed before they can be used in cooking e.g. defeathering a chicken Y6 • Incorporate motor and a switch into a model. • Control and monitor a product using a computer/tablet/data-logging equipment. • Understand which foods are reared, caught or grown and that this happens in the UK and across the globe. • Understand that the seasons can affect produce. • Understand that sometimes raw ingredients need to be processed before they can be used in cooking e.g. defeathering a chicken

Cooking and Nutrition	
Voor 1 and 2	

Year 1 and 2

Obiectives

Y1

- Develop a food vocabulary using taste, smell, texture and feel.
- Group familiar food products (eg: fruit and vegetables) and use The Eatwell Plate.
- Cut, peel, grate and chop a range of ingredients, making simple dishes without a heat source.
- Work safely and hygienically.
- Identify that people should eat at least 5 portions of fruit and vegetables a day.

Y2

- Develop a food vocabulary using taste, smell, texture and feel.
- Group familiar food products (eg: fruit and vegetables) and use The Eatwell Plate.
- Cut, peel, grate and chop a range of ingredients, making simple dishes without a heat source.
- Work safely and hygienically.
- Measure and weigh food items using non-statutory measures e.g. spoons, cups.

Year 3 and 4

Objectives

- Develop sensory vocabulary/knowledge using smell, taste, texture and feel.
- Analyse the taste, texture, smell and appearance of a range of foods.
- Follow instructions.
- Sort foods into the 5 groups using the Eatwell Plate and identify that this makes up a 'balanced diet'.
- Identify that people should eat at least 5 portions of fruit and vegetables a day.
- Join and combine a range of ingredients understanding how this changes a recipe.
- Work safely and hygienically to prepare simple dishes, where needed with a heat source.
- Measure and weigh ingredients appropriately.
- Use cooking techniques such as chopping, peeling, grating, slicing, mixing, spreading, kneading and baking

<u>Y4</u>

- Develop sensory vocabulary/knowledge using smell, taste, texture and feel.
- Analyse the taste, texture, smell and appearance of a range of foods.
- Follow instructions.
- Sort foods into the 5 groups using the Eatwell Plate and identify that this makes up a 'balanced diet'.
- Identify that people should eat at least 5 portions of fruit and vegetables a day.
- Join and combine a range of ingredients understanding how this changes a recipe.
- Work safely and hygienically to prepare simple dishes, where needed with a heat source.
- Measure and weigh ingredients appropriately.
- Use cooking techniques such as chopping, peeling, grating, slicing, mixing, spreading, kneading and baking.

Year 5 and 6 Objectives

- Analyse food products taking into account the properties of ingredients and sensory characteristics.
- Select and prepare foods for a particular purpose.
- Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing.
- Weigh and measure using scales.
- Cut and shape ingredients using appropriate tools and equipment.
- Join and combine food ingredients appropriately (Eg: beating, rubbing-in).
- Work safely and hygienically to prepare simple dishes, where needed with a heat source.
- Sort foods into the five groups using the Eatwell Plate and identify that this makes up a healthy diet.
- Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle.
- Identify that people should eat at least 5 potions of fruit and vegetables a day.
- Understand that recipes can be adapted to change the appearance, taste and aroma of a dish.

<u>Y6</u>

- Analyse food products taking into account the properties of ingredients and sensory characteristics.
- Select and prepare foods for a particular purpose.
- Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing.
- Weigh and measure using scales.
- Cut and shape ingredients using appropriate tools and equipment.
- Join and combine food ingredients appropriately (Eg: beating, rubbing-in).
- Work safely and hygienically to prepare simple dishes, where needed with a heat source.
- Sort foods into the five groups using the Eatwell Plate and identify that this makes up a healthy diet.

	 Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle. Identify that people should eat at least 5 potions of fruit and vegetables a day. Understand that recipes can be adapted to change the appearance, taste and aroma of a dish.
--	---

PROGRESSIVE VOCABULARY

Year 1&2 Aspect of D&T

Mechanisms

Focus

Sliders and Leavers

slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function

Year 3 &4 Aspect of D&T

Mechanical systems

Focus

Levers and linkages

mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating user, purpose, function prototype, design criteria, innovative, appealing, design brief

Year 5&6 Aspect of D&T

Mechanical systems

Focus

Cams

cam, snail cam, off-centre cam, peg cam, pear shaped cam follower, axle, shaft, crank, handle, housing, framework rotation, rotary motion, oscillating motion, reciprocating motion annotated sketches, exploded diagrams mechanical system, input movement, process, output movement design decisions, functionality, innovation, authentic, user, purpose, design specification,

Year 1&2 Aspect of D&T Mechanisms

Focus

Wheels and axles

components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight linear, rotary, oscillating, reciprocating user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate

Year 3 &4 Aspect of D&T Mechanical systems

Focus

Pneumatics

components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight linear, rotary, oscillating, reciprocating user, purpose, function, prototype, design criteria, innovative,

appealing, design brief, research, evaluate, ideas, constraints, investigate

Year 5 &6 Aspect of D&T

Mechanical systems

Focus

Pulleys or Gears

pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch, circuit diagram annotated drawings, exploded diagrams mechanical system, electrical system, input, process, output design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief

Year 1 & 2 Aspect of D&T

Structures

Focus

Freestanding structures

cut, fold, join, fix

structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder design, make, evaluate, user, purpose, ideas, design criteria, product, function

Year 3 & 4 Aspect of D&T

Structures

Focus

Shell structures

shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype

Year 5 & 6 Aspect of D&T

Structures

Focus

Frame structures

frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional

Year 3 &4 Aspect of D&T

Structures

Focus

Shell structures using computeraided design (CAD)

shell structure, three-dimensional (3-D) shape, net,

cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype

Year 1&2 fruit and vegetable names, names of equipment and utensils Aspect of D&T

Food

Focus

Preparing fruit and vegetables

sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria

Year 3&4 Aspect of D&T

Food

Focus

Healthy and varied

diet

name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell,

preference, greasy, moist, cook, fresh, savoury hygienic, edible, grown, reared, caught, frozen, tinned,

processed, seasonal, harvested healthy/varied diet planning, design criteria, purpose, user, annotated sketch, sensory evaluations

Year 5&6 Aspect of D&T

Food

Focus

Celebrating culture and seasonality

ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble design specification, innovative, research, evaluate, design brief

Year 1&2 Aspect of D&T

Textiles

Focus

Templates and joining techniques

names of existing products, joining and finishing techniques, tools, fabrics and components template, pattern pieces, mark out, join, decorate, finish features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function

Year 3&4 Aspect of D&T

Textiles

Focus

2-D shape to 3-D

product

fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance

user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces

Year 5&6 seam, seam allowance, wadding, reinforce, right side, wrong Aspect of D&T

Textiles

Focus

Combining different

fabric shapes

side, hem, template, pattern pieces name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype

Year3 &4
Aspect of D&T
Textiles

Focus

Using computeraided

design (CAD)

in textiles

computer aided design (CAD), computer aided manufacture (CAM)

font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip

design brief, design criteria, design decisions, innovative, prototype

seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces

names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper annotate, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype

Year 5&6 Aspect of D&T

Textiles

Focus

Using computeraided design (CAD) in textiles

computer aided design (CAD), computer aided manufacture (CAM)

font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip

design brief, design criteria, design decisions, innovative, prototype

seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces

names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper

annotate, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype

Year 3 & 4

Aspect of D&T

Electrical systems

Focus

Simple circuits and

switches

series circuit, fault, connection, toggle switch, push-tomake switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip control, program, system, input device, output device user, purpose, function, prototype, design criteria, innovative, appealing, design brief

Year 5 & 6

Aspect of D&T

Electrical systems

Focus

Monitoring and

control

reed switch, toggle switch, push-to-make switch, push-tobreak switch, light dependent resistor (LDR), tilt switch light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit function, innovative, design specification, design brief, user, purpose

Year 3 &4 series circuit, fault, connection, toggle switch, push-toAspect of D&T

Electrical systems

Focus

Simple

programming and

control

make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, process

user, purpose, function, prototype, design criteria, innovative, appealing, design brief

Year 5&6

Aspect of D&T

Electrical systems

Focus

More complex switches and circuits

series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart function, innovative, design specification, design brief, user, purpose