

DT Process
Investigate and Evaluate
Design
Make
Evaluate

DT
At Rush Green school, we have developed our curriculum to develop meaningful experiences of different strands of DT including textiles, cooking and nutrition, strengthening structures, electrical products and mechanical systems. Children will develop their understanding of the designing process. These skills of evaluating, making and designing are key skills. While technology may change over time, these stages of production will remain relevant. As children progress their skills and knowledge, they will be encouraged to be resilient, independent and to take risks with innovation and design decisions. By year 6, the curriculum will have provided the chance for all children to have a broad understanding of DT and the impact technology has on society. They will have started to develop life skills that they will continue to build on in the next stage of their life.

Key Vocabulary		
General Terms:		
Function	Purpose	Innovation
Design specification	Design decisions	Annotated sketch
Authenticity	Evaluate	Properties
Prototype	User	Research
Design brief	Investigate	Investigate
Materials	Tools	Diagram
Celebrating food choices and adapting recipes		
Flavour	Balanced diet	Healthy
Hygienic	Appearance	Substitute
Recipe	Spice, herbs	Ingredients
Quantity	Slice, Grate, Peel, chop	Reared, Cattle
Simmer	Mix, pour, stir, combine	Nutritional values
Weighting scales		
Mechanical Systems		
Drive belt	Pulley	Spindle
Carousel	Gear, Axle	Annotated sketches
Rotation	Driver	Follower
Electrical systems		
Fault	Microcontroller	Switch name
Crocodile clips	Battery holder	Program System
Debug	Connection	Input/output
Motor	USB cable	Wire stripper
General Terms:		
Function	Purpose	Innovation
Design specification	Design decisions	Annotated sketch
Authenticity	Evaluate	Properties
Prototype	User	Research
Design brief	Investigate	Investigate
Materials	Tools	Diagram
Celebrating culture and adapting recipes		
Traffic lights	Balanced diet	Nutritional values
Hygienic	Appearance	Substitute
Recipe	Flavour	Ingredients
Fibre	Slice, Grate, Peel, chop, Stir	Healthy Adapt
Salt	Mix, knead, stir, combine	Spice herbs
Weighting scales		
Frame structures		
Join	Frame structure	Temporary
Shape	Triangulation	Permanent
Stiffen	Stability	Reinforce
Wood glue	Square-sectioned wood	Hacksaws G-clamp
Bench hooks	Masking tape	Joints
Textiles		
Seam	Seam allowance	stitches
Zip	Right/wrong side	Fastenings
Pins	Pattern pieces	Needles
Thread	Appliqué	
General Terms:		
Function	Purpose	Innovation
Design criteria	Annotated sketch	Appeal User
Investigates	Evaluate	Properties
Materials	Tools	Diagram
Seasonality and a healthy diet: Tarts		
Healthy	Food groups	Seasonality
Hygienic	Appearance	Preference
Recipe	Flavour	Ingredients
Taste, Texture	Slice, Cut, Grate, Peel	Balanced diet
Seasonality	Importing	Climate
Shell structures		
Shell	Tabs	Scoring
3D	Net	Stiff
CAD	Vertex	Strengthen
Marking out	Prototype	Packaging
Electrical systems		
Fault	Series circuit	Switch name
Crocodile clip	Micro-controller	Program, System
Debug	Connection	Input/output
Control	Device	Crumble
General Terms		
Function	Purpose	Innovation
Design criteria	Annotated sketch	Appeal User
Investigate	Evaluate	Properties
Materials	Tools	Diagram
Healthy and varied diets: Sandwich wraps		
Healthy	Food groups	Processed
Hygienic	Appearance	Preference
Recipe	Flavour	Ingredients
Texture, Five tastes	Chopping board	Balanced diet
Harvested	Slice, Cut	Frozen
Fresh	Grate, Peel	Tinned
Textiles		
Needle	Pattern pieces	Aesthetics
Seam	Stitch types	Fastening
Thread	Template	Appliqué
Fabric	Cross stitch	Seam, face
Finish	Strength	Back stitch
Mechanical Systems		
Pneumatic	Input	output
System	Syringe	Compressed
Pressure	Lever	Pivot
Prototype	System	Assemble
General Terms:		
Functional Design brief	Purposeful User	Designing Appealing
Design criteria	Investigate	Evaluating
Preparing Fruit and Vegetables:		
Sugar	Name of fruit/veg	Utensils
Taste, Safety	Healthy eating	Smoothie
Blend	Peel, Chop, Grate	Texture, Ingredients
Popular	Under, above ground	
Textiles		
Fabrics	Decorate	Sequins
Puppet faces	Needle	Finish
Running stitch	Sew	Thread
Pattern pieces	Mark out	Template
Mechanisms		
Vehicle	Wheel	Axle, Body
Assembling	Joining	Movement
Axle holder	Turning	Fixed, Free
General Terms:		
Functional Design brief	Purposeful User	Designing Appealing
Design criteria	Investigate	Evaluating
Preparing fruit: Fruit kebabs		
Name of fruit	Skin, Hard	Texture
Cut, Peel, Grate	Soft, Juicy	Crunchy
Choosing	Utensils	Taste
Mechanical Systems		
Cut	Lever, Slider	Movement
Slot	Paper fastener	Pull/Push
Bridge	Shape	Forwards
Guide	Masking tape	Backwards
Freestanding Structures		
Structure	Join, Cut, Fold	Shape
Straight	Tape names	Corner
Equipment	Freestanding	Stiff
Prepositions	Weak/Strong	Curved
Thinner	Thicker	Edge
General Terms:		
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DT Strand: Cooking and Nutrition | **DT Strand: Electrical Systems** | **DT Strand: Mechanisms** | **DT Strand: Structures** | **DT Strand: Textiles**

Progression in the Curriculum:
Design and Technology

Year 1: Preparing fruit: Fruit Kebab

Chn will explore a range of fruit according to their colour and taste. They will understand that fruit are grown.

Chn will use discussion of experiences and drawings to generate ideas

Chn will cut or peel ingredients safely and hygienically using simple utensils and equipment.

Chn will evaluate their dislikes and likes about their product in regards to the design criteria.

Year 2: Preparing fruit and vegetables Smoothies

Chn will explore a range of fruit and vegetables and recognise their differences and how they grow.

Chn will develop their vocabulary according to their colour and taste of a range of fruity drinks, understanding the impact of sugar.

Chn to understand what healthy eating is and that fruits and vegetables are an important part

Chn will use discussion of experiences and drawings to generate and develop ideas.

Chn will cut, peel or grate ingredients safely and hygienically using simple utensils and equipment. They will also practise chopping using the claw technique

Chn will evaluate their dislikes and likes about their product in regards to simple design criteria.

Year 3: Healthy and varied diets: Sandwich wraps

Chn will understand the importance of a healthy diet, considering where food comes from in further detail and knowing what food belongs in different food groups.

Chn will carry out sensory evaluations of a variety of ingredients and combinations.

Chn will generate ideas through annotated sketches after deciding on the more important design criteria for their sandwiches.

Chn will prepare and combine ingredients hygienically using appropriate utensils where they reinforce skills of peeling, grating and chopping as well as practising slicing using the bridge technique.

Chn will evaluate their food product against their design criteria, considering function, purpose, appeal, innovation and user.

Year 4: Seasonality and a healthy diet: Fruit tart

Chn will investigate the impact of climate on growing food and how we have to import some foods which can involve processing them to make them last longer.

Chn will generate ideas through annotated sketches after deciding on the most important design criteria for their tarts.

Chn will prepare and combine ingredients hygienically using appropriate utensils where they develop their skills of chopping and slicing as well as using a heat source.

Chn will evaluate their food product against their design criteria, considering function, purpose, appeal, innovation and user.

Year 4: Simple programming and control: Nightlight

Chn will investigate and evaluate the design criteria for different types of lights.

Their design must be an innovative, functional product that is purposeful and has a clear user that they have created. They will generate realistic ideas through discussion and annotated sketches, focusing on the needs of the user.

Chn will have the experience of writing and modifying a program to make a light turn on or flash on or off.

Chn will select from a wide range of materials to create an innovative and purposeful product for their intended user.

Chn will evaluate the purpose, functionality, appeal, innovation and the user of their product.

Year 3: Pneumatics: Moving Monster toy

Chn will evaluate products that use pneumatics (air), considering the input, output and purpose.

Chn will design an innovative, functional product that is purposeful and has a clear user. They will generate realistic ideas through discussion and annotated sketches, focusing on the needs of the user.

Chn will select from and use appropriate tools with some accuracy to cut, shape and join paper and card.

Chn will create prototypes to develop help develop their final idea

Chn will evaluate the purpose, functionality, appeal, innovation and the user of their product.

Year 2: Wheels and axles: A toy vehicle

Chn will explore and evaluate a range of wheeled products. They will consider the user and purpose of vehicles. Chn will investigate the shapes of wheels and how it impacts movement.

Chn will use discussion and drawings to generate ideas that are in line with the design criteria

Chn will create a vehicle with wheels and axles considering their design and selecting a range of tools to allow movement and materials such as paper, card, plastic and wood.

Chn will evaluate their dislikes and likes about their product in regards to functionality, purpose and appeal and in regards to the design criteria.

Year 1: Sliders and Levers: Mr Men/Little Miss moving picture

Chn will explore a range of pop up books that use simple sliders and levers and to understand that different mechanisms produce different types of movement.

To use discussion and drawings to generate ideas from an imaginary, story-based context.

Chn to develop their skills by replicating the slider and lever teaching aids. Chn will select tools and materials chosen by their teacher.

Chn will evaluate their dislikes and likes about their product in regards to its functionality, purpose and appeal.

Year 1: Free-standing structures: Playground equipment

Chn will explore a range of playground equipment using photos and construction kit to help them to develop their ideas.

To use discussion and drawings to generate ideas

The design must use their own experiences to be functional and fit-to purpose in line with design criteria

Chn will select tools and materials chosen by their teacher to cut, shape and join paper and card.

Chn will use discussion strategies using resources such as tape, glue and staples.

Chn will evaluate their dislikes and likes about their product in regards to its functionality, purpose and appeal.

Year 2: Templates and Joining: Puppets

Chn will explore and use a range of puppets and discuss their purpose.

Chn will use discussion and drawings to generate and develop ideas of a design that must be functional, appealing and fit-to purpose in line with design criteria

Chn to select from and use a range of equipment and materials to join fabrics using running stitch, glue, over-stitch and/or stapling.

Chn use different finishing techniques such as using paint, fabric crayons, stitching, sequins, buttons and ribbons.

Chn will evaluate their dislikes and likes about their product in regards to functionality, purpose and appeal and in regards to the design criteria.

Year 3: 3D products: Cushions

Chn will evaluate a range of existing cushions, considering aesthetics, fastenings and purpose.

Chn will create design criteria to help them design an innovative, functional product that is purposeful and has a clear user. Chn will generate ideas through discussion, annotated sketches and pattern pieces

Chn will select and use a range of appropriate tools with some accuracy for cutting, joining and finishing

Chn will strengthen, stiffen and reinforce existing techniques as well as using cross stitch and back stitch and appliqué to securely join two pieces of fabric together.

Chn will evaluate the purpose, user, functionality and innovation of their product against their design brief.

Year 4: Shell structures: Fruit packaging

To evaluate a range of existing products, exploring packaging and how these products are strengthened.

Chn will create design criteria to help them design an innovative, functional product that is purposeful and has a clear user by generating ideas through discussion and annotated sketches

Chn will select and use a range of appropriate tools safely with some accuracy for cutting, joining and finishing.

Chn will use CAD to make their product.

Chn will evaluate the purpose, user, functionality and innovation of their product against the design brief.

Year 5: Celebrating culture and adapting recipes: pizza

Chn will revise the importance of a varied diet, considering how world diets are similar as everyone needs the same food groups to be healthy. They will look beyond the eatwell plate, considering the nutritional values of food labels.

Chn will make clear design decisions for adapting a recipe, creating a design specification to help inform the requirements of their recipe against the design brief.

Chn will know how to use utensils and equipment including heat sources to prepare and cook food. Chn will be able to follow a recipe, adapting it to meet the needs of their user where they consider presentation as well as ingredients. They will practise their kneading, rubbing in, sieving and measuring skills as well as previous skills

Chn will evaluate their design decisions for their meal as well as considering the views of others when identifying improvements.

Year 6: Pulleys or Gears: A playground ride

Children will investigate vehicles and identify the various components used. They will explore the uses of gears and pulleys and consider how gears and pulleys can be used to speed up, slow down or change direction of movement using construction kits.

Chn will use research and use their own experiences to create a design specification where they understand how the purpose differs depending on the user. They will make clear design decisions for an innovative, functional product that has a clear purpose and an intended user.

Children will use tools and equipment accurately to create a working mechanical system

Chn will evaluate their design decisions, purpose, user, functionality, authenticity and innovation of their product and consider how to develop and innovate against their user and design criteria throughout the creating process.

Year 5: Combining different fabric shapes: A pencil case

Children will use research to explore the aesthetic styles and functions of pencil cases. They will consider the design decisions of these products

Children will use research and their own experiences to make design decisions and create a design specification where they understand how the purpose differs depending on the user.

Chn will generate, develop and model their ideas through discussion, annotated sketches and cross-sectional diagrams

Chn will create 3D products from a combination of accurately made fabric shapes and with different fabrics. Children will reinforce their sewing skills to improve the appearance and consistency of a range of stitches. They will also practise the blanket stitch

Chn will evaluate their design decisions, purpose, user, functionality, authenticity and innovation of their product.

Year 6: Monitoring and Control: A playground ride

Children will investigate Playground rides and identify the various components used as well as how they have changed overtime.

Chn will use research and use their own experiences to create a design specification where they understand how the purpose differs depending on the user. They will make clear design decisions for an innovative, functional product that has a clear purpose and an intended user.

Chn will apply their understanding of computing to program, monitor and control multiple components for their products. They will make a working circuit that incorporates a battery, motor, lights and a sensor.

Chn will select from a wide range of materials to create an authentic product for their intended user, refining and developing throughout the making stage.

Chn will continually evaluate their product as they develop it, including diagnosing and debugging faults in their software and circuit.

Chn will evaluate their design decisions, purpose, user, functionality, authenticity and innovation of their product.

Year Group	Wider Opportunities and Experiences
6	Enterprise Maths week Science day: marshmallow tallest structures with parents World Earth day Show and tell Crafts club Harry Potter world design workshop
5	Enterprise Maths week Science day: marshmallow tallest structures with parents Taster day at Royal Liberty World Earth day Show and tell Crafts club
4	Enterprise Maths week Science day: marshmallow tallest structures with parents World Earth day Show and tell Cooking workshop – Royal academy of Culinary Arts with a chef Science – creating a sound studio
3	Enterprise Maths week Science day: marshmallow tallest structures with parents World Earth day Show and tell Trip to supermarket – farm to fork workshop
2	Enterprise Maths week Science day: marshmallow tallest structures with parents World Earth day Show and tell Pancake day
1	Enterprise Maths week Science day: marshmallow tallest structures with parents World Earth day Show and tell Trip to farm
EYFS	Enterprise Maths week Large scale Construction projects (e.g. bottle igloo) World Earth day Show and tell Topic cooking

Early Learning Goals

- Physical development: Fine motor skills
- Expressive Arts and Design: Creating with materials
- Personal, Social and Emotional development: Managing self and Self-Regulation
- Communication and language: Speaking