



Design and Technology

Year 1



Year 1 – Pop up Cards (Sliders and Levers)

What I know and can explain

- I can generate ideas based on simple design criteria, explaining what I could make
- I can develop, model and communicate my ideas through drawings
- I can select and use tools to cut, shape and join paper and card
- I can use simple finishing techniques
- I can explore a range of everyday products that use simple sliders and levers
- I can evaluate my product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria
- I can explore and use sliders and levers
- I understand that different mechanisms produce different types of movement.

Useful Vocabulary

Slider

Lever

Slot

bridge/guide

join

design

evaluate

user

purpose

design criteria

product

Year 1 – Puppets (Textiles)

What I know and can explain

- I can design a functional and appealing product for a chosen user and purpose
- I can generate and communicate my ideas e.g. through talking, drawing, templates
- I can select from and use a range of tools and equipment to perform practical tasks e.g. marking out, cutting
- I can explore and evaluate a range of existing textile products
- I can evaluate my ideas and final products against original design criteria
- I understand how simple 3-D textile products are made, using a template to create two identical shapes
- I understand how to join fabrics using different techniques e.g. running stitch
- I can explore different finishing techniques e.g. painting, stitching

Useful Vocabulary

embroider
glove puppet
mock-up
seam
sew
template
pattern
design
evaluate
purpose



Design and Technology

Year 2



Year 2 – Lolly Making (Preparing Fruit)

What I know and can explain

- I can design appealing products for a particular user based on simple design criteria
- I can generate initial ideas and design criteria through investigating a variety of fruits
- I can communicate my ideas through talk and drawings
- I can use simple utensils and equipment to e.g. cut, slice and chop safely
- I can select from a range of fruits according to their characteristics e.g. colour, texture and taste to create a chosen product
- I can taste and evaluate a range of fruits to determine the intended user's preferences
- I can evaluate ideas and finished products against design criteria
- I know where a range of fruit and vegetables come from
- I understand the basic principles of a healthy and varied diet

Useful Vocabulary

fruit

vegetable

juicy

crunchy

sweet

sharp

flesh

slicing

cutting

healthy

diet

ingredients

Year 2 – Vehicles (Wheels and Axles)

What I know and can explain

- I can generate initial ideas and simple design criteria
- I can develop and communicate ideas through drawings
- I can select from and use a range of tools and equipment to perform practical tasks such as cutting and joining
- I can select from and use a range of materials such as paper, card and wood
- I can explore and evaluate a range of products with wheels and axles
- I can evaluate my ideas and products against original criteria
- I can explore and use wheels, axles and axle holders

Useful Vocabulary

Vehicle
Wheel
axle
axle holder
chassis
cutting
joining
mechanism
design
evaluate
purpose
criteria



Design and Technology

Year 3

Year 3 – Moving Book (Levers and Linkages)

What I know and can explain

- I can generate realistic ideas and my own design criteria through discussion, focusing on the needs of the user
- I can use annotated sketches to develop, model and communicate ideas
- I can order the main stages of making
- I can select from and use appropriate tools with some accuracy to cut, shape and join paper and card
- I can select from and use finishing techniques
- I can investigate products with lever and linkage mechanisms
- I can evaluate my products and ideas against criteria and user needs
- I understand and use lever and linkage mechanisms
- I can distinguish between fixed and loose pivots

Useful Vocabulary

Mechanism

lever

linkage

pivot

bridge

guide

user

purpose

function

prototype

design brief

criteria

Year 3 – Moving Creatures (Pneumatics)

What I know and can explain

- I can generate my own design criteria through discussion, focusing on the needs of the user
- I can use annotated sketches and prototypes to develop, model and communicate ideas
- I can order the main stages of making
- I can select from and use appropriate tools with some accuracy to cut and join materials and components e.g. tubing and syringes
- I can select from and use finishing techniques for my product
- I can investigate and analyse products with pneumatic mechanisms
- I can evaluate my product and ideas against criteria and user needs
- I understand and use pneumatic mechanisms

Useful Vocabulary

components
attaching
tubing
syringe
plunger
split pin
pneumatic
input
output
pressure
inflate
deflate
purpose
function
prototype
design criteria



Design and Technology

Year 4

Year 4 – Nightlights (electricity – simple circuits and switches)

What I know and can explain

- I can gather information about needs and wants, and develop design criteria to inform designs that are fit for purpose and aimed at particular individuals or groups
- Generate, develop, model and communicate realistic ideas through e.g. annotated sketches / annotated diagrams
- I can order the main stages of making
- I can select from and use tools and equipment to cut, shape, join and finish with some accuracy
- I can select from and use materials and components according to their functional properties and aesthetic qualities
- I can investigate and analyse a range of existing battery-powered products
- I can evaluate my ideas and products against my own design criteria and identify the strengths and areas for improvement
- I understand and use electrical systems in their products e.g. series circuits incorporating switches and bulbs

Useful Vocabulary

series circuit
connection
switch
battery
battery holder
bulb
bulb holder
wire
insulator
conductor
crocodile clip
prototype
design criteria
appealing

Year 4 – Textiles: 2D shape to 3D product

What I know and can explain

- I can generate realistic ideas for an appealing, functional product fit for purpose and user/s
- I can produce annotated sketches, prototypes and final product sketches
- I can select and use a range of appropriate tools with some accuracy e.g. cutting, joining
- I can select fabrics and fastenings according to their functional characteristics
- Investigate a range of 3-D textile products relevant to the project
- I can test my product against the original design criteria
- I know how to securely join two pieces of fabric together
- I understand the need for patterns and seam allowances

Useful Vocabulary

fabric
fastening
compartment
structure
finishing technique
strength
weakness
stiffening
templates
stitch
seam
seam allowance
aesthetics
annotated sketch



Design and Technology

Year 5

Year 5 – Pizza Making (Food)

What I know and can explain

- I can develop a design brief and criteria for a design specification
- I can explore ideas and make design decisions to develop a final product linked to user and purpose
- I can use annotated sketches and ICT to develop and communicate ideas
- I can write a step-by-step recipe, including a list of ingredients, equipment and utensils
- I can select and use appropriate equipment to measure and combine ingredients
- I can make and present a pizza appropriately for the intended user and purpose
- I can carry out sensory evaluations and record the evaluations using e.g. tables / charts
- I can evaluate the final pizza with reference back to the design brief
- I know how to use utensils and equipment to prepare and cook food
- I understand about seasonality in relation to food products and the source of different food products

Useful Vocabulary

Ingredients

yeast

dough

flour

baking

carbohydrate

nutrition

savoury

utensils

knead

fold

Year 5 – Moving Toys (Mechanisms: Cams)

What I know and can explain

- I can generate innovative ideas by carrying out research
- I can develop a simple design specification
- I can develop ideas through annotated drawings / exploded drawings / drawings from different views
- I can produce detailed lists of tools, equipment and materials
- I can select from and use a range of tools and equipment to make a product that is accurately assembled and well finished
- I can compare my final product to the original design specification
- I can test products and critically evaluate the quality of the design
- I can consider the views of others to improve my work
- I understand that mechanical systems have an input, process and an output
- I understand how cams can be used to produce different types of movement

Useful Vocabulary

cam
snail cam,
off-centre cam
peg cam
pear shaped cam
follower
axle
shaft
crank
handle
housing
oscillating motion
reciprocating motion
input
output



Design and Technology

Year 6



Year 6 – Electric Cars (Mechanisms: Pulleys and Gears)

What I know and can explain

- I can generate innovative ideas by carrying out research
- I can develop a simple design specification to guide my thinking
- I can develop ideas through discussion, annotated drawings, exploded drawings and drawings from different views
- I can produce detailed lists of tools, equipment and materials
- I can select from and use a range of tools and equipment to make products that that are accurately assembled and well finished
- I can compare the final product to the original design specification
- I can test products and critically evaluate the quality of my design
- I can consider the views of others to improve their work
- I understand that mechanical and electrical systems have an input, process and an output
- I understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.

Useful Vocabulary

pulley

gear

rotation

axle

motor

circuit

switch

circuit diagram

annotated drawings

exploded diagrams

Year 6 – Bridges (Frame Structures)

What I know and can explain

- I can generate innovative ideas by carrying out research about different bridge structures
- I know there are different types of bridges (frame structures) e.g. truss / suspension and can develop a simple design specification to guide my thinking
- I can develop ideas against a design criterion through discussion, annotated drawings, exploded drawings or drawings from different views
- I can produce detailed lists of tools, equipment and materials
- I can compare the final product to the original design specification
- I can test my bridge and evaluate my ideas and products against my own design criteria and intended user
- I can identify the strengths and areas for improvement in my work
- I know how the structural properties of a bridge give it its strength

Useful Vocabulary

beams
pillars
girders
cross-sections
truss
beam
cantilever
arch
suspension
cable-stay
aesthetics
compression
anchorage
cables
tension forces