

# Year 1 Scheme of Learning: Design and Technology

## Year 1 – Mechanisms

Lesson 1	
Learning Objective	<b>To be able to create a sliding mechanism.</b>
Declarative Knowledge	<ul style="list-style-type: none"><li>• Know that sliders are around us in the environment and their purpose (eg, moving cards).</li><li>• Know that a guide or bridge is a short card strip used to keep sliders in place and control movement.</li><li>• Know that a mechanism is a device used to create movement in a product.</li><li>• Know that a slider is a rigid bar which moves backwards and forwards along a straight line. Unlike a lever, a slider does not have a pivot point.</li><li>• Know that a slot is the hole through which a lever or slider is placed to enable part of a picture to move.</li></ul>
Procedural Knowledge	Investigate and make – explore and use mechanisms.
Key Vocabulary	Mechanism, Slider, Movement, slide, scissors, design, make, evaluate.

Lesson 2	
Learning Objective	<b>To be able to use levers to create a moving mechanism.</b>
Declarative Knowledge	<ul style="list-style-type: none"><li>• Know that a mechanism is a device used to create movement in a product.</li><li>• Know that a lever is a rigid bar which moves around a pivot. Levers are used in many everyday products. In this project children will use card strips for levers and paper fasteners for pivots.</li></ul>
Procedural Knowledge	Investigate and make – explore and use mechanisms.
Key Vocabulary	Mechanism, Lever, Pivot, Movement, scissors, split pin, design, make, evaluate.

Lesson 3	
Learning Objective	<b>To investigate and create wheel mechanisms.</b>
Declarative Knowledge	<ul style="list-style-type: none"><li>• Know that wheels are around us in the environment.</li><li>• Know that wheels are round and need to be to turn.</li><li>• Know that wheels are attached to an axle.</li><li>• Know that wheels can move independently and with an axle when attached.</li><li>• Know how to connect a wheel and axle.</li></ul>
Procedural Knowledge	Investigate and make – explore and use mechanisms.
Key Vocabulary	Mechanism, wheel, axle, dowel, movement, round, turn, roll.

<b>Lesson 4</b>	
Learning Objective	<b>To be able to design a picture with a moving mechanism.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know what a moving mechanism is.</li> <li>• Know how to use different mechanisms in our designs.</li> <li>• Know how to pick appropriate designs, materials and designs.</li> </ul>
Procedural Knowledge	Design – Design purposeful, functional, appealing products for themselves and other users based on design criteria
Key Vocabulary	Lever, slider, pivot, wheel, mechanism, movement, design, make, evaluate.

<b>Lesson 5</b>	
Learning Objective	<b>To be able to make a moving picture based on a design.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know what a design is and know to include information about the material, movement and purpose of the design.</li> <li>• Know that products are made for a certain audience.</li> <li>• Know how to use mechanisms in a moving picture.</li> </ul>
Procedural Knowledge	Make - Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing.
Key Vocabulary	Design, audience, moving picture, make, evaluate.

<b>Lesson 6</b>	
Learning Objective	<b>To be able to evaluate a moving picture.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that a product is designed, made and evaluated.</li> <li>• Know that evaluation is checking a design meets the criteria needed.</li> <li>• Know that a product can be improved or changed.</li> </ul>
Procedural Knowledge	Evaluate - Evaluate their ideas and products against design criteria.
Key Vocabulary	Criteria, evaluate, purpose, audience, check, design.

## Year 1 – Preparing fruit and vegetables

Lesson 1	
Learning Objective	<b>To find out the favourite fruits and vegetables in the class and present the data in a pictogram.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that fruit and vegetables are plants and we can eat them.</li> <li>• Know that a favourite means the one you like the most.</li> <li>• Know that a pictogram can show popularity for different items.</li> <li>• Know what a pictogram is.</li> </ul>
Procedural Knowledge	Research – understand where food comes from.
Key Vocabulary	Fruit, vegetable, favourite, pictogram, gather, data, fruit names, vegetable names.

Lesson 2	
Learning Objective	<b>To examine, taste and describe a variety of fruits and vegetables.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that pith – the soft white lining inside fruit such as oranges.</li> <li>• Know that sensory evaluation is subjective testing of foods where senses are used to evaluate qualities such as appearance, smell, taste, texture (mouth feel).</li> <li>• Know that nutrients are all the things in food that the body needs to remain healthy.</li> </ul>
Procedural Knowledge	Investigate – basic principles of varied and healthy diet.
Key Vocabulary	Examine, taste, adjective, smell, texture, sweet, sour, bumpy, smooth, skin.

Lesson 3	
Learning Objective	<b>To find out how to handle and prepare a variety of fruits and vegetables.</b>
Declarative Knowledge	<p>Know that there are different ways of preparing food, including:</p> <ul style="list-style-type: none"> <li>• Peeling</li> <li>• Cutting</li> <li>• Slicing</li> <li>• Grating</li> <li>• Squeezing</li> </ul> <p>Know that hygiene is important when preparing food, including:</p> <ul style="list-style-type: none"> <li>• Jewellery is removed</li> <li>• Hair is tied back</li> <li>• Sleeves are rolled up</li> <li>• Aprons are on</li> <li>• Hands are washed</li> <li>• Cuts are covered with blue waterproof dressing</li> </ul>
Procedural Knowledge	Investigate – basic principles of varied and healthy diet.
Key Vocabulary	Knife, grater, squeeze, cut, slice, chop, prepare, hygiene, safety, peeling.

<b>Lesson 4</b>	
Learning Objective	<b>To be able to design a recipe to include fruit and/or vegetables.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that salad is a cold dish of fresh and/or cooked vegetables or fruit.</li> <li>• Know that fruits and vegetables can be prepared in a variety of ways.</li> <li>• Know how to compliment flavours with another flavour.</li> </ul>
Procedural Knowledge	Design – Design purposeful, functional, appealing meals for themselves and others.
Key Vocabulary	Recipe, menu, food, options, fruit, vegetables, preparation, design.

<b>Lesson 5</b>	
Learning Objective	<b>To be able to make and evaluate a food product based on a design. (1)</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that a product is designed for a purpose.</li> <li>• Know how to prepare a variety of fruits and vegetables.</li> <li>• Know how to present their design to be appealing to the audience.</li> </ul>
Procedural Knowledge	Make - Select from and use a range of tools and equipment to perform practical tasks. Evaluate – evaluate their menu against a design criteria.
Key Vocabulary	Make, cut, slice, chop, decide, design, taste, dice, grate, squeeze.

<b>Lesson 6</b>	
Learning Objective	<b>To be able to make and evaluate a food product based on a design. (2)</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that to evaluate a product you need to look at its effectiveness.</li> <li>• Know how to improve a product.</li> </ul>
Procedural Knowledge	Make - Select from and use a range of tools and equipment to perform practical tasks. Evaluate – evaluate their menu against a design criteria.
Key Vocabulary	Evaluate, taste, design, audience, feelings.

## Year 1 – Freestanding Structures

Lesson 1	
Learning Objective	<b>To know what bridges are in the UK.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that a freestanding structure is a structure that stands on its own foundation or base without attachment to anything else.</li> <li>• Know what a bridge is and the purpose of a bridge.</li> <li>• Know where to find a bridge in the local area.</li> <li>• Know what material is used to make a bridge.</li> </ul>
Procedural Knowledge	Research – worldwide.
Key Vocabulary	Map, bridge, location, local, UK, England.

Lesson 2	
Learning Objective	<b>To know about local bridges and their structure.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that a freestanding structure is a structure that stands on its own foundation or base without attachment to anything else.</li> <li>• Know that a frame structure is a structure made from thin components e.g. tent frame.</li> <li>• Know that a shell structure is a hollow structure with a thin outer covering.</li> <li>• Know that brick bonding is arranging bricks in a wall to improve the performance of the structure or improve its appearance.</li> </ul>
Procedural Knowledge	Research – local.
Key Vocabulary	Bridge, UK, local, freestanding, frame, shell, brick, structure, stand, object, river, building.

Lesson 3	
Learning Objective	<b>To know the key features of a bridge.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that stability in relation to a freestanding structure is the extent to which it is likely to fall over if a force is applied.</li> <li>• Know that a buttress is a structure added to a wall, tower or framework to make it more stable and/or reinforce it.</li> <li>• Know popular materials used to make bridges in the UK.</li> <li>• Know and compare different bridges in the UK.</li> </ul>
Procedural Knowledge	Research – explore how bridges are made stronger, stiffer and more stable.
Key Vocabulary	Bridge, material, metal, brick, cement, structure, shape, size, length, river, water, crossing.

Lesson 4	
Learning Objective	<b>To experiment using different materials to make a bridge.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know that as a freestanding structure becomes taller its centre of gravity rises.</li> <li>• Know that stability in a structure can generally be increased by making the base wider, making the base heavier or adding buttresses.</li> <li>• Know what a bridge is and what materials would be a good choice.</li> <li>• Know what wood, brick, plastic, metal and stone are.</li> </ul>
Procedural Knowledge	Investigate – compare and explore a variety of materials.
Key Vocabulary	Brick, stone, cement, wood, plastic, structure, gravity, tall, height, shape, team.

Lesson 5	
Learning Objective	<b>To design a bridge.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know what a design is and know to include information about the material, movement and purpose of the design.</li> <li>• Know that products are made for a certain audience.</li> <li>• Know the purpose of the bridge and who would be using it.</li> </ul>
Procedural Knowledge	Design – Design purposeful, functional, appealing product for themselves and others.
Key Vocabulary	Bridge, material, choice, design, wood/brick/plastic/paper/straw/spaghetti, stick, cut, make, label.

Lesson 6	
Learning Objective	<b>To build a Bridge and evaluate it.</b>
Declarative Knowledge	<ul style="list-style-type: none"> <li>• Know to follow a design to create a product.</li> <li>• Know to evaluate a product you need to evaluate the effectiveness of the product.</li> <li>• Know what an audience and purpose is.</li> </ul>
Procedural Knowledge	Make - Select from and use a range of tools and equipment to perform practical tasks. Evaluate – evaluate their product against a design criteria.
Key Vocabulary	Design, build, and evaluate, material, instructions.