

Year 4 Scheme of Learning: Design and Technology

Year 4 – Food packaging

Lesson 1	
Learning Objective	To identify where chocolate is grown.
Declarative Knowledge	<ul style="list-style-type: none">• Know the origins of chocolate.• Know where to locate chocolate on a map.• Know how and why chocolate is made and distributed around the world.
Procedural Knowledge	Research.
Key Vocabulary	Harvested, plantations, ripe, nibs, mould, chocolate, South America.

Lesson 2	
Learning Objective	To undertake consumer research into chocolate and packaging.
Declarative Knowledge	<ul style="list-style-type: none">• Know what a consumer is.• Know why different types of packaging are used for different audiences.• Know and explore different types of packaging.• Know that different materials are used to keep different food types fresh.
Procedural Knowledge	Investigate.
Key Vocabulary	Packaging, research, consumer, market, cost, flavour, amount, tally.

Lesson 3	
Learning Objective	To evaluate chocolate products.
Declarative Knowledge	<ul style="list-style-type: none">• Know to evaluate chocolate they need to look at taste, texture, smell and appeal.• Know that different brands use different ingredients and amounts of cacao in their products.• Know how to evaluate chocolate bars against each other.
Procedural Knowledge	Evaluate.
Key Vocabulary	Cocoa powder, dark chocolate, milk chocolate, white chocolate, senses, taste, smell, texture, appeal.

Lesson 4	
Learning Objective	To design a chocolate package.
Declarative Knowledge	<ul style="list-style-type: none">• Know how to design a 3D model.• Know how to design a product that is appealing for a target audience.• Know what ingredients are and why a list is important to consumers.• Know what a slogan is.
Procedural Knowledge	Design.
Key Vocabulary	Name, ingredients list, instruction, slogan, brand, design, package, material, shape, size.

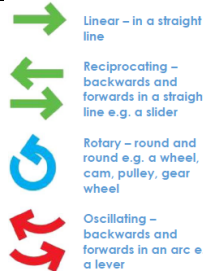
Lesson 5	
Learning Objective	To construct a chocolate package.
Declarative Knowledge	<ul style="list-style-type: none"> • Know how to follow a design. • Know how to construct a 3D model against a plan. • Know how to check a design has been followed.
Procedural Knowledge	Make.
Key Vocabulary	Construct, make, design, build, create.

Lesson 6	
Learning Objective	To evaluate a chocolate package.
Declarative Knowledge	<ul style="list-style-type: none"> • Know how to evaluate a product effectively against the design brief. • Know and discuss positives and negatives of a product within a group. • Present and evaluate customer satisfaction within the classroom.
Procedural Knowledge	Evaluate.
Key Vocabulary	Evaluate, brief, audience, appeal, taste, texture, shape, size.

Year 4 – Mechanisms – moving pictures

Lesson 1	
Learning Objective	To understand how a range of mechanisms create movement.
Declarative Knowledge	<ul style="list-style-type: none"> • Know that a mechanism is a device used to create movement. • Know that levers are used in many everyday products. • Know that a linkage is the card strips joining one or more levers to produce the type of movement required. • Know that the term 'linkage' is also used to describe the lever and linkage mechanism as a whole. • Know that a guide or bridge is a short card strip used to keep lever and linkage mechanisms in place and control movement.
Procedural Knowledge	Investigate.
Key Vocabulary	Mechanism, lever, device, movement, linkage, join, control, bridge/guide.

Lesson 2	
Learning Objective	To develop understanding of different mechanisms and how to make them.
Declarative Knowledge	<ul style="list-style-type: none"> • Know that a loose pivot is a paper fastener that joins card strips together. • Know that a fixed pivot is a paper fastener that joins card strips to the backing card. • Know that a system is a set of related parts or components used to create an outcome. • Know that systems have an input, process and an output. • Know that in a lever and linkage mechanism, the 'input movement' is where the user pushes or pulls a card strip. • Know that the 'output movement' is where one or more parts of the picture move.
Procedural Knowledge	Investigate
Key Vocabulary	Pivot, turn, fixed, loose, fasten, join, system, components, input, process, output, lever.

Lesson 3	
Learning Objective	To look at examples of mechanical systems in books.
Declarative Knowledge	<ul style="list-style-type: none"> • Know that lever and linkage mechanisms usually produces oscillating or reciprocating movement: • Know what a mechanical systems purpose in a book is. • Know where to find mechanical systems in a variety of settings. <div style="text-align: right; margin-top: 10px;">  <p>Linear – in a straight line</p> <p>Reciprocating – backwards and forwards in a straight line e.g. a slider</p> <p>Rotary – round and round e.g. a wheel, cam, pulley, gear wheel</p> <p>Oscillating – backwards and forwards in an arc e.g. a lever</p> </div>
Procedural Knowledge	Research
Key Vocabulary	Lever, linkage, mechanism, oscillating, reciprocating, systems, research.

Lesson 4	
Learning Objective	To design a moving picture based on a section of Beowulf.
Declarative Knowledge	<ul style="list-style-type: none"> • Know that a section of a story can be one page or more. • Know that a moving picture tells the story on the page. • Know that a design is to plan the size, shape, material and purpose of the product.
Procedural Knowledge	Design.
Key Vocabulary	Beowulf, chapter, section, moving image, mechanism, size, shape, material, function, purpose.

Lesson 5	
Learning Objective	To create a moving picture based on a section of Beowulf.
Declarative Knowledge	<ul style="list-style-type: none"> • Know how to make and use a variety of mechanical systems. • Know how to apply a mechanism to a product. • Know the difference between a lever and a slider. • Know how to follow a design.
Procedural Knowledge	Make
Key Vocabulary	Make, mechanical, product, create, lever, slider.

Lesson 6	
Learning Objective	To evaluate a moving picture based on a section of Beowulf.
Declarative Knowledge	<ul style="list-style-type: none"> • Know that to evaluate is to check if a brief has been met. • Know that to evaluate is to compare the design to the final product and its intended outcome. • Know that a product has a target audience.
Procedural Knowledge	Evaluate
Key Vocabulary	Evaluate, share, brief, design, discuss, improve, audience.

Year 4 – Electrical systems: Simple circuits and switches

Lesson 1 & 2	
Learning Objective	To understand how to code using a crumble board.
Declarative Knowledge	<ul style="list-style-type: none"> • Know what a crumble board is. • Know what a fairground ride is. • Know that coding is a set of instructions. • Know what a circuit is. • Know how to apply a battery and a switch to a circuit.
Procedural Knowledge	Research – explore and experiment with a crumble board.
Key Vocabulary	Code, build, fairground ride, sparkle, switches, crocodile clips, circuit, switches, battery box, sequence.

Lesson 3 & 4	
Learning Objective	To plan and design our fairground ride.
Declarative Knowledge	<ul style="list-style-type: none"> • Know what a fairground ride should look like. • Know how to plan and design a circuit using a crumble kit. • Know the key features of a fairground ride.
Procedural Knowledge	Design - generate, develop, model and communicate ideas through discussion with computer-aided design.
Key Vocabulary	Plan, design, criteria, fairground ride, shape, size, movement, mechanisms, parts.

Lesson 5 & 6	
Learning Objective	To create our fairground ride and add out moving element using a crumble board.
Declarative Knowledge	<ul style="list-style-type: none"> • Know what a moving element is. • Know what parts move on a fairground ride and what is popular. • Know how to adapt and change a design to add a new element.
Procedural Knowledge	Make - select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.
Key Vocabulary	Moving, elements, crumble board, kit, design, criteria, mechanism.

Lesson 7	
Learning Objective	To evaluate our ride.
Declarative Knowledge	<ul style="list-style-type: none"> • Know how to evaluate against a design criteria. • Know how to consider the view of others. • Know how to give feedback to another person.
Procedural Knowledge	Evaluate - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
Key Vocabulary	Evaluate, effectiveness, appeal, fun, circuit, working.