



D&T Curriculum
KS2 Knowledge Organisers

Knowledge Organiser

D&T Unit: Viking Bread

Year: B2

Term: Autumn

Learning Objectives - Knowledge	
C3 – Year 3/4	Key Driver
To know simple recipe steps to produce a bread similar to the bread that historians believe was made by the Vikings.	K
To know how to evaluate our bread, compare it with other modern commercially available breads and consider the impact of ingredient choice and the role of bread in the diet.	HL
To know basic food hygiene precautions.	HL
To know how to design an adjusted recipe for a Viking Bread which will be available in a supermarket's 'Historical Foods' aisle.	C
To know how to make our version of Viking Bread using our adjusted recipes which will be available in kit form in a supermarket's 'Historical Foods' aisle.	C
To know how to evaluate our products and consider how their good points would be used in marketing and package design.	C

Key Vocabulary	
Word	Meaning
Knead	To prepare (dough) by pressing a mixture of flour, water, etc., with your hands
Texture	The feel and appearance of a product
Taste	The flavour of a food product
Food Hygiene	What to consider when handling, cooking or storing food, to make sure that it is safe for other people to eat.
Ingredients	The foods needed to make a certain product or to follow a recipe.
Recipe	The process needed for making a food product, normally written as a list of instructions.

Equipment Required
Cleaning equipment (cloths, spray), mixing bowls, spoons, measuring devices, oven.

Useful Websites or Resources
https://www.bbc.co.uk/bitesize/clips/z4pnvcw

Knowledge Organiser

D&T Unit: Making Viking Bread

Year: B2

Term: Autumn

Learning Objectives - Knowledge	
C4 – Year 4/5	Key Driver
To know different bread products according to their characteristics	NW
To know how bread products are an important part of a balanced diet and can be eaten in different ways	NW, HL
To know which ingredients are needed to make bread and how ingredients can be altered and mixed to create different effects - link to Vikings local environment and what ingredients they could add	NW, C, HL
To know how to design a new bread product for a particular person or event - Viking bread	C, NW
To know how to make bread based on a plan and design	C
To know how to evaluate a finished product	C

Key Vocabulary	
Word	Meaning
bread products	Different types of bread originating from different cultures e.g pitta, naan, chapatti, granary, soda
origin	The point or place where something begins, arises, or is derived
texture	The feel, appearance, or consistency of a surface or a substance
knead	To prepare (dough) by pressing a mixture of flour, water, etc. with your hands
appearance	The way that someone or something looks
evaluate	Form an idea of the amount, number, or value of; assess
hygiene	Conditions or practices to maintaining health and preventing disease, especially through cleanliness
survey	Investigate the opinions or experience of (a group of people) by asking them questions
consume	Eat, drink, or ingest(take) - food or drink
carbohydrates	Are found in most foods, and get broken down to provide a person with energy to get through the day. Bread, rice and pasta are complex carbohydrates
yeast	A commercial product containing living yeast cells that is used in baking to make dough rise
commercial	Meant to be bought and sold
complement	Something that makes whole or better

Equipment Required
250g (9oz) plain wholemeal flour, 1 egg, beaten, salt, 185g butter; mixing bowl, knife, measuring scales, tea towel, rolling pin, baking sheet, oven gloves, oven
Other ingredients to alter effects of taste e.g honey, rosemary, seeds

Useful Websites or Resources
https://www.bbc.co.uk/bitesize/clips/z4pnvcw

Knowledge Organiser

D&T Unit: Testing and making Viking bread and stew

Year: B2

Term: Autumn

Learning Objectives - Knowledge	
C5 – Year 5/6	Key Driver
To know seasonality, know where and how a variety of ingredients are grown and processed.	NW, C
To know about and give reasons for the need to work safely and hygienically and know and understand the practice needed.	HL
To know about the impact of changing proportions within a recipe and use knowledge of food and cooking to generate and cook own recipes.	C
To know in scientific terms about the physical and chemical changes that take place when food is cooked, e.g. heated and cooled.	NW, C
To know about how the properties of certain foods can affect the final product.	NW, C
To know the appropriate methods and equipment for measuring and cooking.	C
To know the difference between commercial and domestic processes for producing food, e.g. bread.	NW, C

Key Vocabulary	
Word	Meaning
Seasonality	The time fruit and vegetables ripen naturally (rather than with human intervention)
Processed	Changed in some way in order to be eaten e.g. skin removed, boiled, chopped, preserved etc
Hygiene	Cleanliness
Bacteria	Micro-organisms- some helpful, some which can cause illness
Texture	How something feels (e.g. when it is in your mouth)
Appearance	How something looks
Proportion	The amount of one ingredient in relation to another
Commercial	Meant to be bought and sold
Domestic	For home -use only

Equipment Required
Variety of ingredients for stew (child- generated from research); knife, chopping board, large saucepan, hotplate or open fire Viking flatbread per group : 250g (9oz) plain wholemeal flour, 1 egg, beaten, salt, 185g butter; mixing bowl, knife, measuring scales, tea towel, rolling pin, baking sheet, oven gloves, oven Other flours to experiment with changes

Useful Websites or Resources
https://www.yac-uk.org/activity/bake-viking-flatbread (Viking flatbread) http://www.primaryhomeworkhelp.co.uk/viking/food.html (foods available to Vikings) http://www.bbc.co.uk/history/ancient/vikings/food_01.shtml (foods available to Vikings)

Knowledge Organiser

D&T Unit: Electrical Components: a building alarm system

Year: B2

Term: Spring

Learning Objectives - Knowledge	
C3 – Year 3/4	Key Driver
To know a variety of uses for an electrical alarm system e.g. intruder/theft alarms, safety alarms (fire, CO2) etc.	K
To know some examples of commercial products that use switches which work in different ways e.g. <i>slide, reed, tilt, push-to-make, push-to-break</i>	C
To know how to produce a design plan to meet a set of design criteria.	C
To know how to construct a prototype of the design using electrical components and housing materials, including the safe use of electricity and tools.	C/HL
To know how to evaluate our own product design against the design criteria.	C

Key Vocabulary	
Word	Meaning
components	a part of an electrical circuit e.g. battery, bulb, buzzer etc .
switches	a mechanism that connects an electrical circuit - in this case, to activate an alarm
alarm	a warning of danger, usually a loud noise or flashing light
alarm system	the whole system that allows an alarm to be sounded, involving electronic components
activate	to start working, or, in this case, to set off (the alarm).
prototype	a model of a design, usually made on a smaller, cheaper scale, to test whether it will meet the design criteria.
deterrent	something that makes someone decide not to do something e.g the alarm is a deterrent against theft
sensor	a device that detects changes e.g. movement or temperature.

Equipment Required
Full range of electrical components including bulbs and buzzers. Copper tape and wires for circuits. Equipment for producing housing for alarm eg hole punches, cardboard snips etc. Housing options: cardboard boxes, plastic trays (recycled materials).

Useful Websites or Resources
https://www.stem.org.uk/resources/community/resource/457960/burglar-alarm-made-clothes-peg

Knowledge Organiser

D&T Unit: Alarms **Year:** B2 **Term:** Spring

Learning Objectives - Knowledge	
C4 – Year 4/5	Key Driver
To know what alarm systems are used for and how different types of switches are activated	C
To know how electrical circuits can be created and controlled	C
To know how to design an alarm system for a particular purpose - a 'burglar alarm' for a house (linked to Topic - buildings in Shrewsbury Since 1066)	C
To know how to create an alarm system based on a simple design	C
To know how to improve an alarm system	C
To know how to evaluate the design of an alarm system	C

Key Vocabulary	
Word	Meaning
components	a basic electronic element e.g. bulbs, batteries, clips, wires, buzzers etc which can be connected together to make circuits
switches	is something that changes the flow of an electrical current
alarm	a warning of danger, usually a loud noise or flashing light
closed circuit	a complete electrical connection around which current flows or circulates
open circuit	an electrical circuit in which the continuity is broken so that current does not flow
inactive	not working
activate	to start working
detect	to discover or observe
deterrent	something that makes someone decide not to do something e.g the alarm is a deterrent against theft

Equipment Required
Electrical components: bulbs, batteries, buzzers, wires, paper clips, pegs, tape, cardboard, cardboard box (preferably shoe boxes)

Useful Websites or Resources
https://www.schoolsofkingedwardvi.co.uk/ks2-science-year-6-5-electricity-circuit-diagrams/

Knowledge Organiser

D&T Unit: Alarms

Year: B2

Term: Spring

Learning Objectives - Knowledge	
C4 – Year 5/6	Key Driver
To know how switches can be used in a range of circuits to control components	C
To know the hazards and safety issues associated with electricity.	C/HL
To know what safety measures to implement when constructing circuits	C/HL
To know how to program a simple control device (Microbit)	C
To know how to use Microbits to sense changes in the environment (e.g. light)	C
To know how to plan, design and create an alarm system using sensors and Microbits	C

Key Vocabulary	
Word	Meaning
Component	A basic device that is often connected with others, to fulfil the requirements of a circuit
Sense	To detect changes
Sensor	A component that will detect changes
Microbit	A tiny programmable computer
Light dependent resistor (LDR)	A component whose resistance varies depending on the amount of light falling on its surface
Environment	The conditions (light, heat, movement etc) surrounding something

Equipment Required
Batteries, wire, range of push to make/push to break switches, LDRs, Microbits, cardboard boxes (shoeboxes ideally)

Useful Websites or Resources
https://microbit.org/ , https://www.youtube.com/watch?v=kaNtg1HGxbY (getting started with the micro:bit) https://www.kitronik.co.uk/blog/microbit-alarm-kitronik-university/ (Alarm tutorial) https://www.makeuseof.com/tag/bbc-microbit-beginner-projects/

Knowledge Organiser

D&T Unit: Structures - Bridges & Engineers

Year: B2

Term: Summer

Learning Objectives - Knowledge		Key Driver
C3 – Year 3/4		
To know the names and major works of some famous bridge building engineers, including Thomas Telford, Abraham Darby and Isambard Kingdom Brunel, and some of the bridge-building problems they overcame.		C
To know a variety of designs of bridges, comparing the features that make them successful e.g. arches, pillars, suspension, trusses, lifting parts.		C
To know how to use simple models to test theories about strength (e.g. the resistance of triangles to distortion compared to rectangles, and the addition of a cardboard arch under a cardboard strip)		C
To know how to measure, mark and fix together wood (1cm square in cross section), creating strong joints between pieces of wood using card triangles and PVA glue.		C
To know how to follow health and safety guidance when using tools like saws, drills and hole punches when working with wood and thick card.		C/HL
To know how to work through the design process from the planning, through the making, to the evaluation of a model bridge that meets certain criteria.		C

Key Vocabulary			
Word	Meaning	Word	Meaning
arch bridge	a bridge that has an arched shape, giving it added strength	saw	a tool used to cut wood
pillar	a supporting structure (made of stone, for example) used to hold something up.	drill	a tool used to make holes in resistant materials, for example wood or metal
truss	a design involving triangular structures that provide strength	hole punch	a tool used to make holes in less resistant materials, for example cardboard or paper
lift bridge	a bridge that is designed to lift to allow ships or boats to pass underneath	prototype	a quick model created before 'the real thing', used to test whether a whole design or part of design will work.
suspension bridge	a bridge that hangs from strong cables, giving it strength along its length.	evaluate	to look at a design, whether your own or someone else's, and decide on the features you think are successful and those that are less successful.
joint	the point at which two pieces (or wood, for example, are fixed together		

Equipment Required
Model bridges of varying designs, saws, bench hooks, drills, hole punches, pegs, weights, toy car, model ship with mast. Consumables: 1cm square wood, cardboard, card triangles, PVA glue, blue tack, paints for aesthetic

Useful Websites or Resources
http://www.historyofbridges.com/ https://www.ice.org.uk - Institute of Civil Engineers - for history on great Engineers like Telford https://www.engineeringclicks.com/famous-bridges/

Knowledge Organiser

D&T Unit: Structures - Bridges & Engineers

Year: B2

Term: Summer

Learning Objectives - Knowledge	
C4 – Year 4/5	Key Driver
To know 'Bridges and Engineers' - British, civil engineers: Isambard Brunel, Thomas Telford and Abraham Derby and be familiar with bridges they designed.	C
To know why and how, pillars and beams are used to span gaps.	C
To know why and how trusses can be used to strengthen bridges.	C
To know why and how arches are used to strengthen bridges.	C
To know how suspension bridges are able to span long distances.	C
To know and develop criteria and design a prototype bridge for a purpose & analyse and evaluate products according to design criteria.	C

Key Vocabulary	
Word	Meaning
engineer	A person who designs and builds complex products, machines, systems, or structures e.g railways, bridges, canals etc.
engineering	A scientific field and job that involves taking our scientific understanding of the natural world and using it to invent, design, and build things to solve problems and achieve practical goals.
beam bridges	A strong, horizontal structure that rests on two end supports, and carries traffic by acting as a beam.
decks	The surface of a bridge.
span gaps	The spread (of an arch or bridge) from one support to another.
parapets	A low wall or fence at the edge of a platform, roof, or bridge.
pillars	A tall column shaped like a cylinder that is used to support a structure or to serve as a decoration or monument.
clapper bridge	A structure designed to carry a trackway across a river.
construction	To build or form something by assembling parts.
truss bridges	A bridge in which the load is supported mostly by trusses - structures composed of a series of wooden or metal triangles.
arch	An opening in a building that is curved on top.
suspension bridge	A bridge that consists of two pairs of pillars, one on either end of the span, with two or more cables slung between them. The bridge deck is suspended from vertical cables or rods attached to the main cables.
prototype	A simple model that lets you test out your idea! Try building your own prototype, and then share what you made.
design criteria	The explicit goals that a project must achieve in order to be successful.

Equipment Required
Paper, card, scissors, glue, sticky tape, sets of weights, toy cars, truss patterns, art straws, construction kits (Meccano, K'NEX), modelling material (plasticine, playdough, clay, polystyrene, sponge), selection of famous bridges.

Useful Websites or Resources
https://www.youtube.com/watch?v=4NIqsB511zY https://www.youtube.com/watch?v=GHEM69sJVX4 https://www.youtube.com/watch?v=D_goMG4kfYc https://www.youtube.com/watch?v=lhDONH6Lbwg https://www.sciencekids.co.nz/sciencefacts/engineering/bridges.html https://www.youtube.com/watch?v=oVOnRPefcno https://www.bbc.co.uk/bitesize/clips/zjvfb9g https://youtu.be/owHF9iLyxic

Knowledge Organiser

D&T Unit: Structures - Bridges & Engineers

Year: B

Term: Summer

Learning Objectives - Knowledge	
C5 – Year 5/6	Key Driver
To know about Isambard Brunel, Thomas Telford and Abraham Derby and the bridges they designed.	C
To know why and how pillars and beams are used to span gaps.	C
To know why and how trusses can be used to strengthen bridges.	C
To know why and how arches are used to strengthen bridges.	C
To know how suspension bridges are able to span long distances.	C
To develop criteria and design a prototype bridge for a purpose & analyse and evaluate products according to design criteria.	C

Key Vocabulary	
Word	Meaning
engineer	A person who designs and builds complex products, machines, systems, or structures e.g railways, bridges, canals etc.
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decks	The surface of a bridge.
span gaps	The spread (of an arch or bridge) from one support to another.
parapets	A low wall or fence at the edge of a platform, roof, or bridge.
construction	To build or form something by assembling parts.
truss bridges	A bridge in which the load is supported mostly by trusses - structures composed of a series of wooden or metal triangles.
arch	An opening that is curved on top.
suspension bridge	A bridge that consists of two pairs of pillars, one on either end of the span, with two or more cables slung between them. The bridge deck is suspended from vertical cables or rods attached to the main cables.
prototype	A simple model that lets you test out your idea! Try building your own prototype, and then share what you made.
design criteria	The explicit goals that a project must achieve in order to be successful.

Equipment Required
Paper, card, scissors, glue, sticky tape, sets of weights, toy cars, truss patterns, art straws, construction kits (Meccano, K'NEX), modelling material (plasticine, playdough, clay, polystyrene, sponge), selection of pictures and designs of famous bridges.

Useful Websites or Resources
https://www.youtube.com/watch?v=4NIqsB511zY https://www.youtube.com/watch?v=GHEM69sJVX4 https://www.youtube.com/watch?v=D_goMG4kfYc https://www.youtube.com/watch?v=IhDONH6Lbwg https://www.sciencekids.co.nz/sciencefacts/engineering/bridges.html https://www.youtube.com/watch?v=oVOnRPefcno https://www.bbc.co.uk/bitesize/clips/zjvfb9q https://youtu.be/owHF9iLyxic