



Digital Learners



Engineers



Global Enquirers



Designers

ASHINGTON
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Healthy Citizens



Sustainability Ambassadors



Cultural Explorers



Careers



Designers

Year 3 - Medium Term Plan – Technology

How to survive a natural disaster.



Designers

Aspect of Study

Design

Make

Evaluate

Technical Knowledge

Transferable Knowledge:

History - a study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066

History – Romans

Geography – Natural Disasters

National Curriculum Overview of Programme of Study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

During this area of study students should be taught to:

Design:

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make:

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing],
- accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate:

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key

Real World Links:

Children will have the opportunity to explore life beyond living memory, using their research skills become historians through building.



Being safe - understanding how to safely use the equipment needed.

Problem Solving - Using skills to answer the enquiry question.

Useful Websites

<https://www.imaginationstationtoledo.org/educator/activities/can-you-build-an-earthquake-proof-building>

OPAL links

Curriculum Coverage

(Previous, expected and what follows on)

Prior National Curriculum Coverage	National Curriculum Coverage	Subsequent National Curriculum Coverage
<p><u>Year 1:</u></p> <ul style="list-style-type: none"> • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology • Select from and use a range of tools and equipment to perform practical tasks • Explore and evaluate a range of existing products • build structures, exploring how they can be made stronger, stiffer and more stable <p><u>Year 2:</u></p> <ul style="list-style-type: none"> • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria 	<p><u>NC OBJ Covered:</u></p> <ul style="list-style-type: none"> • Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics • build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 	<p><u>Year 3:</u></p> <ul style="list-style-type: none"> • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], • accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Key vocabulary	Concepts	Language skills
Natural Disaster Durability Structure Recycle Prototype Investigate Structure Strength Tools Materials Function Resistant Shear	Durability Resistance	ORACY FRAMEWORK



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Sequence of Teaching and Learning

	National Curriculum LO/EQ?	Lesson ideas/differentiation
1	<p>NC OBJ:</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>E.Q: How do objects survive a natural disaster?</p>	<p>Introduce the enquiry question for this unit of work and show pupils pictures of items that survived the eruption of mount Vesuvius.</p> <p>Children predict why these items survived.</p>
2	<p>NC OBJ:</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>L.O: To research key features of Roman pottery.</p>	<p>Pupils look at photos of Roman pots. Research what pots were used for, materials used to make them, why they were important from Roman life, etc.</p> <p>Pupils should be aware of why pots were made from clay.</p> <p>HA: Could begin to hypothesise why clay pots survived.</p>



Sequence of Teaching and Learning

	National Curriculum LO/EQ?	Lesson ideas/differentiation
3	<p>NC OBJ:</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>L.O: To design a clay pot for a specific use.</p>	<p>Introduce the idea that Year 3 have been asked to produce a clay pot that should be able to survive a natural disaster. Introduce design criteria that they will be assessed on.</p> <p>Ask pupils to create a design based upon their research of Roman pots. Annotate their design with key features and materials used.</p>
4	<p>NC OBJ:</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p>L.O: To create a prototype.</p>	<p>Explain that a prototype is a chance to test their design before making their real pot from clay.</p> <p>Demonstrate using the pinch pot method.</p> <p>Allow time for the children to practise working with modelling clay and use clay tools.</p> <p>Time should be given to annotate designs following this with things they need to change or things that worked well.</p> <p>Pupils should add to their designs a list of tools and materials required.</p> <p>HA: Articulate why they have selected these tools.</p>



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Sequence of Teaching and Learning

	National Curriculum LO/EQ?	Lesson ideas/differentiation
5	<p>NC OBJ:</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p>L.O: To make a clay Roman pot.</p>	<p>Recap the process of making a roman pot.</p> <p>Demonstrate the process of making a pot using pinch pot method.</p> <p>Pupils use clay to replicate their design.</p>
6	<p>NC OBJ:</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world <p>L.O: To evaluate and analyse their own work.</p>	<p>Identify the strengths and areas for development in their product.</p> <p>Opportunity should be given to peer assess and view the work of others.</p> <p>Use their design criteria to evaluate their completed products.</p> <p>Could test to see if pots can be filled with water without leaking?</p>



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7	<p>NC OBJ:</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>EQ: How do buildings survive natural disasters?</p>	<p>Recap natural disasters.</p> <p>Show pupils examples of homes from areas that frequently have natural disasters.</p> <p>Work in groups to label these images with important features.</p>
8	<p>NC OBJ:</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>EQ: How do buildings survive natural disasters?</p>	<p>Explain that groups have been tasked with designing an earthquake-proof structure.</p> <p>Recap features that homes which survived natural disasters have.</p> <p>Recap what happens during an earthquake.</p> <p>Pupils to work in small groups to design a home that would survive. This should be annotated with key features.</p>



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	National Curriculum LO/EQ?	Lesson ideas/differentiation
9	<p>NC OBJ:</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p>EQ: How do buildings survive natural disasters?</p>	<p>Have a selection of recycled materials to show pupils and allow them time to edit designs to suit the materials available.</p> <p>Pupils should be articulating why they have selected a material.</p> <p>Pupils are given the opportunity to build their structure.</p>
10	<p>NC OBJ:</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world <p>EQ: How do buildings survive natural disasters?</p>	<p>Test/Evaluate structures.</p> <p>If possible, could structures be left outside for a period to test their durability?</p> <p>Pupils should evaluate how well their structure survived. What would they change about their design in future?</p>