Design and Technology

Unit Overviews

EYFS

Autumn	Spring	Summer
Expressive Arts and Design: • First day of school photo • Self Portraits • Nursery thymes • Colour monsters • Firework pictures	**Expressive Arts and Design:** • Chinese New Year crafts • Making cards • Pancake day • Dragons	**Expressive Arts and Design:** • Fairy tales • Junk modelling • Caterpillar art • Symmetrical butterflies • Transport

Key Stage 1

(Years 1 and 2)

Big Question Link: Do you remember?

Unit grid: DT: Split pin thaumatrope

Year A/Year B

Autumn/Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Toys through the years
Colour and image</td><td rowspan="4">• design purposeful, functional, appealing products for themselves and other users
• based on design criteria
• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
• explore and evaluate a range of existing products
• evaluate their ideas and products against design criteria
• 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</td><td>1</td><td>What is a thaumatrope? Look at examples.</td><td rowspan="6">Make an effective thaumatrope</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Look at different mechanisms for a thaumatrope including string, split pin, rubber bands etc. Explore these ideas.</td></tr>
<tr><td rowspan="3">Thaumatrope
Split pin
Mechanism
Combine
Victoria
Equipment
Evaluate</td><td>3</td><td>Design a thaumatrope considering what should be on each side of it</td></tr>
<tr><td>4</td><td>Make thaumatropes</td></tr>
<tr><td>5</td><td>Evaluate the thaumatrope against the design criteria set.</td></tr>
<tr><td colspan="3">Big Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="3">Do you remember what toys you played with when you were younger?</td><td colspan="2">Endurance: keep trying when making is difficult</td></tr>
</table>

Big Question Link: Where shall we go?

Unit grid: DT

Year A/Year B

Autumn/Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives
• 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
• explore and evaluate a range of existing products
• evaluate their ideas and products against design criteria
• 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</td><td colspan="2" rowspan="4">Session overviews</td><td rowspan="4">Unit Outcomes
To learn about Tudor houses.

To replicate a Tudor house with key labels.

To understand why Tudor builders used certain materials to build the houses.</td></tr>
<tr><td>Key Vocabulary</td></tr>
<tr><td>Tudor Wooden beams
House Tiles
Wood Bricks
Thatch Jetty
Wattle Tall Roof
Daub Panes of glass</td></tr>
<tr><td></td></tr>
<tr><td></td><td></td><td>1</td><td>How do we know what houses looked like in 1666?
Draw and Label a 1666 Tudor house</td><td></td></tr>
<tr><td></td><td></td><td>2</td><td>Why did Tudor builders use materials like wood, thatch, wattle and daub in many buildings?
Design a 1666 house.</td><td></td></tr>
<tr><td></td><td></td><td>3</td><td>Create and design a 1666 house.</td><td></td></tr>
<tr><td></td><td></td><td>4</td><td>Evaluation of designs</td><td></td></tr>
<tr><td></td><td></td><td>5</td><td>Estate Agents!
Create a Tudor house for Samuel Pepys, based on a specification.</td><td></td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Where shall we go?

Children will be learning about Tudor houses and why buildings were so close together. Where else could they go?</td><td colspan="3">Promote dignity and acceptance to enable our respectful children to live a life giving back to our community.</td></tr>
</table>

Big Question Link: What is home?

Unit grid: DT: Moving animals

Year A/Year B

Autumn/Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td colspan="2">Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Henri Rousseau Art
David Attenborough
Colour and texture</td><td colspan="2" rowspan="8">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
explore and evaluate a range of existing products
evaluate their ideas and products against design criteria
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</td><td>1</td><td>Recap learning about simple shapes and forms used to draw animals.</td><td rowspan="8">Create an image with moving parts using different types of mechanisms</td></tr>
<tr><td rowspan="2">Key Vocabulary</td><td>2</td><td>Consider different ways to make moving animal parts in a picture e.g. levers, pivots, sliders</td></tr>
<tr><td>3</td><td>Create a background for a moving animal</td></tr>
<tr><td>4</td><td>Create the moving parts of the picture</td></tr>
<tr><td>Mechanism
Lever
Slider
Picot
Parts
Moving
Simple
shapes</td><td>5</td><td>Combine and complete the picture</td></tr>
<tr><td>6</td><td>Evaluate completed designs</td></tr>
<tr><td colspan="3">Biq Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="3">How can I make the background look like the home of the animal?</td><td colspan="2">Acceptance – accept that there are different habitats and cultures</td></tr>
</table>

Big Question Link: How has life changed?

Unit grid: Design Technology –Castles

Year A/Year B

Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives
- Design purposeful, functional products f based on design criteria
- Generate, develop, model and communicate ideas through talking, drawing, templates, mock-ups
- Select from and use a range of tools and equipment to perform practical tasks
- Select from and use a wide range of materials and components, according to their characteristics
- Evaluate their ideas and products against design criteria
- Build structures, exploring how they can be made stronger, stiffer and more stable
Explore and use mechanisms in their products.</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.</td><td>1</td><td>Castles
Recap castles. Create basic castle shape.</td><td rowspan="8">Make a model castle with relevant components, strengthening towers and moving parts</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Towers.
Add towers to the castle to strengthen it.</td></tr>
<tr><td>Strengthen
Construct
Strong
Mechanism
Raise
Lower
Bar</td><td>3</td><td>Walkways
Add walkways to the castle</td></tr>
<tr><td></td><td>4</td><td>Entrances and exits
Add a strengthened and door with a bar to the castle
Also add arrow slits</td></tr>
<tr><td></td><td>5</td><td>Gatehouse
Build a gatehouse to go with the castle</td></tr>
<tr><td></td><td>6</td><td>Secret and special doors
Add a secret door and a drawbridge to the castle</td></tr>
<tr><td></td><td>7</td><td>Finishing
Paint and evaluate the castle that has been built</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How has life in castles changed since medieval times?</td><td colspan="3">Wisdom – understand the importance of shelter and protection</td></tr>
</table>

Big Question Link: Who can help me?

Unit grid: DT- Cooking, Ingredients from around the world.

Year A/Year B

Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Managing Self ELG
-understanding the importance of healthy food choices.</td><td rowspan="6">Use the basic principles of a healthy and varied diet to prepare dishes.

Understand where food comes from.</td><td>1</td><td>Fruit tasting- Fruits from around the world.</td><td rowspan="6">Produce a two-course meal</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>What is a healthy diet? Where does food come from? What is a balanced Diet</td></tr>
<tr><td rowspan="3">Prepare
Explore
Diet
Varied
Healthy</td><td>3</td><td>Design a menu featuring foods from around the world.
How can we make sure we are including the eat-well plate?</td></tr>
<tr><td>4</td><td>Service! Prepare a two-course meal featuring ingredients from around the world.
- Reception (Separate)
- Y1-2 (Starter and Main in each group).

4 groups (5 per group)
Laura to support with Main cooking.
1 or 2 parent helpers.</td></tr>
<tr><td>5</td><td>Evaluation</td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How can people around the world help me to have a healthy and balanced diet?</td><td colspan="3">Promote dignity- support children to learn how to cook and look after their bodies to keep them healthy.
Giving back to the community- offering to support</td></tr>
</table>

Big Question Link: Are we there yet?

Unit grid: DT- Textiles: Boats
Year A/Year B
Autumn/ Spring/ Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td rowspan="3">Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Share their creations, explaining the process they have used.</td><td rowspan="8">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
Explore and evaluate a range of existing products
Evaluate their ideas and products against design criteria Technical knowledge
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.</td><td>1</td><td>Exploring Boats and Fabric
Children to investigate boats and different types of fabric.
Children to test which fabric they like/ dislike to use</td><td rowspan="8">Fabric boat using a range of joining techniques</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Practising Joining Techniques
Children practice joining two pieces of fabric together
Glue, staples, sewing stations</td></tr>
<tr><td>Fabric
Textile
Waterproof
Design
Join
Stitch
Sew
Running stitch
Template
Decorate
Evaluate</td><td>3</td><td>Designing a boat
Children to design and draw their boat, adding labels and colours to ensure they know what they are creating</td></tr>
<tr><td></td><td>4</td><td>Making the boat Part 1
Children to cut all the shapes required using templates accurately</td></tr>
<tr><td></td><td>5</td><td>Making the boat Part 2
Children to decorate and join their boats together.
Using a range of joining techniques</td></tr>
<tr><td></td><td>6</td><td>Evaluating their boats
Children to evaluate their work, what went well and what they would like to improve if they were to do this again.</td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">What types of boats can help us to get there?</td><td colspan="3">Endurance – keeping going when a task is difficult</td></tr>
</table>

Lower Key Stage 2 (Years 3 and 4)

Big Question: What does it mean to be human?

Unit grid: Cooking and Ingredients

Year A/Year B

Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Children take part in cooking day in KS1 using ingredients from around the world.</td><td rowspan="2">understand and apply the principles of a healthy and varied diet
prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</td><td>1</td><td>COOKING DAY – Breakfast station
Learn about seasonal ingredients and make a breakfast smoothie.</td><td rowspan="5">A seasonal breakfast smoothie.

A healthy, balanced lunch.

A hot meal prepared from a recipe.</td></tr>
<tr><td rowspan="4"><u>Key Vocabulary</u>
Seasonal ingredients
Healthy balanced diet
Nutrition
Hygiene
Portion
Carbohydrates
Proteins
Dairy
Calcium
Vitamins and minerals
Fruit and vegetables
Fats and spreads
Eatwell guide
Boil / bake / fry / roast
Cutting techniques (bridge, claw, fork secure)
Grown / reared / caught / processed</td><td>2</td><td>COOKING DAY – Lunch station
Learn about the Eatwell guide and design, make and evaluate a healthy, balanced lunch.</td></tr>
<tr><td>3</td><td>COOKING DAY – Dinner station
Learn about kitchen equipment and methods of cooking. Follow a recipe to make a hot meal.</td></tr>
<tr><td>Extra</td><td>Use the videos and activities from https://www.foodafactoflife.org.uk/7-11-years/where-food-comes-from-7-11-years/where-food-comes-from-videos-7-11-years/ to find out more about where food comes from.</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">What do humans need to survive?</td><td colspan="3">How can our diet help us to live life in all its fullness?</td></tr>
</table>

Big Question: How do we use...?

Unit grid: Cams

Year A/Year B

Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives
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 and cross-sectional diagrams
Make
• select from and use a wider range of materials and components, according to their functional properties and aesthetic qualities
Evaluate
• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
Technical knowledge
• understand and use mechanical systems in their products (cams)</td><td colspan="2">Session overviews</td><td rowspan="4">Unit Outcomes
An automated animal toy with a cam.</td></tr>
<tr><td>Children have created moving animals in KS1.
Children have created an interactive book about living things during science lessons.</td><td>1</td><td>Find out about cams, what they are and how they work. Explore how different shaped cams create different movements.</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Introduce the design brief: to make an automated animal toy to go with their interactive science book about living things (made in science lessons). Set criteria to meet the design brief. Give a list of materials they can use.</td></tr>
<tr><td><u>Key Vocabulary</u>
Cam
Follower
Slider
Handle
Component
Mechanism
Automated
Design brief
Design criteria
Linear motion
Rotary motion</td><td>3
4-5
6</td><td>Draw and label designs for the toys, showing it from different perspectives, including inside (the mechanism) and outside (the decoration).
Make the toys. The majority of the class can work on decorating the outside of their toy, while a few at a time work with the teacher to create the mechanism.
Evaluate toys against the criteria.</td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How do we use... cams?</td><td colspan="3">To demonstrate endurance when learning a new skill.</td></tr>
</table>

Big Question: What's so important about water?
Unit grid: Viking boats
Year A/Year B
Autumn 1/Autumn 2/Spring 1/Spring 2/Summer 1/Summer 2

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Children have experience of construction from making castles and Tudor houses in KS1.</td><td rowspan="3">Design
• use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose
• generate, develop, model and communicate their ideas through discussion and annotated sketches
Make
• select from and use a wider range of tools and equipment to perform practical tasks
• select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities
Evaluate
• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
Technical knowledge
• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</td><td>1</td><td>RESEARCH
Introduce the design brief – they need to make a functional model of a Viking longship. Research and set criteria to meet the design brief.</td><td rowspan="4">A labelled design of a model Viking longship.

A model Viking longship.</td></tr>
<tr><td rowspan="3"><u>Key Vocabulary</u>
Longship
Viking
Functional
Aesthetic
Design brief
Design criteria
Float
Keel
Materials
Structure
Strengthen
Stiffen
Reinforce
Evaluate</td><td>2</td><td>DESIGN
Draw and label designs, including what materials they are going to use for each part. Consider how to make them float.</td></tr>
<tr><td>3-5</td><td>MAKE
Make Viking boats using a variety of construction techniques, according to their designs.</td></tr>
<tr><td>6</td><td>EVALUATE
Test Viking boats in water and carry out self and peer evaluations against criteria.</td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">What was so important about water for the Vikings?</td><td colspan="3">Demonstrate aspiration by setting a high goal and taking small steps to work towards it.</td></tr>
</table>

Big Question: Who's in control?

Unit grid: Egyptian Bags/Purses

Year A/Year B

Autumn/Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Children have made textile boats in KS1.
Children have learnt about Ancient Egypt in history and art.</td><td rowspan="2">I can 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.
I can generate, develop, model and communicate ideas through pattern pieces.
I can select from and use a wider range of tools and equipment to perform practical tasks accurately.
I can select from and use a wider range of textiles, according to their properties and aesthetic qualities.
I can investigate and evaluate a range of existing products.</td><td>1</td><td>RESEARCH
Introduce design brief: create an Ancient Egyptian bag/purse to be sold in a museum giftshop.
Research and set design criteria for functionality and aesthetics.</td><td rowspan="5">An Ancient Egyptian bag/purse that could be sold in a museum giftshop.</td></tr>
<tr><td><u>Key Vocabulary</u>
Design brief
Criteria
Evaluate
Pattern
Hessian
Linen
Aida
Cotton
Thread
Wool
Material
Textiles
Sewing
Running stitch</td><td>2</td><td>DESIGN
Sketch a design and create pattern pieces. Test and evaluate the shape and size by making a paper prototype. Amend the pattern pieces as necessary.</td></tr>
<tr><td></td><td></td><td>2</td><td>MAKE A PATTERN
Create a pattern using paper. Test and evaluate the shape and size and amend as necessary.</td></tr>
<tr><td></td><td></td><td>3-5</td><td>MAKE
Assemble and decorate the bag/purse using appropriate sewing techniques.</td></tr>
<tr><td></td><td></td><td>6</td><td>EVALUATE
Evaluate the bag against criteria.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How do you safely and effectively take control of the needle?</td><td colspan="3">To show endurance when there are setbacks in the project.</td></tr>
</table>

Big Question: What lights up the world?

Unit grid: History of Design (CAD)

Year A/Year B

Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td rowspan="2">• I can design a purposeful and functional product.
• I can generate, develop, model and communicate my ideas through talking, drawing, writing and ICT.</td><td rowspan="4">• I can understand how key events and individuals in design and technology have helped shape the world.
• I can generate, develop, model and communicate my ideas through computer-aided design.</td><td>1</td><td>What do inventors/designers do?
Explore the process of designing, making and evaluating a new product. Create a toolbox of skills that you need to be an inventor/designer.</td><td rowspan="5">A CAD of a potential product to solve a problem.

A prototype or model of a product to solve a problem.</td></tr>
<tr><td>2</td><td>How has design and technology shaped the world?
Consider the impact of design and technology on the world.</td></tr>
<tr><td>Key Vocabulary</td><td>3</td><td>The Designing Process
Explore methods for design in more depth, including labelled diagrams, models, prototypes and CAD. Introduce a problem that the children need to design/invent a solution to.</td></tr>
<tr><td rowspan="2">Design(er)
Invent(or)
Evaluate
Technology
Diagram
CAD
Prototype
Model
Product</td><td>4</td><td>CAD
Use labelled diagrams and CAD to develop a product that solves the problem.</td></tr>
<tr><td>5</td><td>Make and Evaluate a Prototype
From the designs created in the last session, create a prototype or model of the product and test it.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How have inventors lit up the world?</td><td colspan="3">How do our school values link to the values of an inventor or designer? How do inventors give back to their community?</td></tr>
</table>

Big Question: What is stronger – people or their environment?

Unit grid: Roman Catapults

Year A/Year B

Autumn/Spring/Summer

<table>
<tr>
<td>Prior Learning Links</td>
<td>Key NC Objectives</td>
<td colspan="2">Session overviews</td>
<td>Unit Outcomes</td>
</tr>
<tr>
<td>Children have used mechanisms to make moving castles and moving animals in KS1.

Key Vocabulary

Catapult
Lever
Mechanism
Saw
Clamp
Bench hook

Accurate
Precise
Measure
Length
Centimeter
Square/round dowel
Trigger
Joins
Linkage
Motion
Design
Evaluate
Criteria
Pivot</td>
<td>• I can use research and develop design criteria to inform the design of innovative and functional products that are fit for purpose.
• I can generate, develop, model and communicate ideas through discussion and annotated sketches.
• I can select from and use a wider range of tools and equipment to perform practical tasks accurately.
• I can select from and use a wider range of construction materials according to their functional properties.
• I can evaluate my ideas and products against my design criteria.
• I can apply my knowledge of how to strengthen, stiffen and reinforce more complex structures.
• I can use levers and linkages in my products.</td>
<td>1-2</td>
<td>RESEARCH / DESIGN / MEASURE & MARK
Introduce task to design and make a Roman catapult. Rotate activities in groups.
1. Research Roman catapults and create a list of criteria.
2. Look at pictures of model catapults and sketch annotated designs.
3. Find out about and make a list of materials.
4. Measure and mark the wood with supervision from teacher.</td>
<td rowspan="6">Annotated sketches to design a Roman Catapult.

List of criteria, materials and tools for a Roman catapult.

Instructions for using a saw safely.

A working model of a Roman catapult.

An evaluation of the catapult.</td>
</tr>
<tr>
<td>3</td>
<td>MAKE: CUT WOOD
Rotate activities in groups.
1. Cut wood with supervision from teacher.
2. Sand and decorate wood.
3. Find out about and make a list of tools.
4. Create instructions for using a saw safely.</td>
</tr>
<tr>
<td>4</td>
<td>MAKE: ASSEMBLE FRAME
Rotate activities in groups.
Activity 1: Assemble frame with supervision from teacher.
Activity 2: Make and decorate wheels.
Activity 3: Find out about ways to strengthen the structure.
Activity 4: Find out about levers and other mechanisms.</td>
</tr>
<tr>
<td>5</td>
<td>MAKE: ASSEMBLE LEVER AND WHEELS
Rotate activities in groups.
1. Create a model lever from card.
2. Design an alternative catapult with two levers joined by a linkage.
3. Draw and explain process so far.
4. Assemble lever with supervision from teacher.</td>
</tr>
<tr>
<td>6</td>
<td>TEST AND EVALUATE
Test the catapults and evaluate based on criteria.</td>
</tr>
<tr>
<td colspan="2">Biq Question Link</td>
<td colspan="3">Vision and Values Link</td>
</tr>
<tr>
<td colspan="2">What is stronger: the levers (muscles) in your arm or the levers in your catapult?</td>
<td colspan="3">I show aspiration by having a go at new skills. I show wisdom by using tools carefully and measuring accurately. I show endurance by seeing the project through.</td>
</tr>
</table>

Upper Key Stage 2 (Years 5 and 6)

Big Question Link: What do you believe?

Unit grid: DT: Programming

Year A/Year B

Autumn /Spring /Summer

<table>
<tr><td colspan="3">Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td colspan="3">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="2">• apply their understanding of computing to program, monitor and control their products.</td><td>1</td><td>How is all our digital data stored?
Explore how digital data is stored, including how binary works.</td><td rowspan="2">In groups/pairs, create a film using images, audio and text.

Individually, design and make a computer game.</td></tr>
<tr><td>Key Vocabulary
Software applications
Drivers
Files
Folders
Memory
Binary
Switches
Base 2
Bits
Byte
Kilobytes (KB)
Megabytes (MB)
Gigabytes (GB)
Terabytes (TB)
Volatile
Non-volatile
RAM
Hard drives
The cloud
Export / import
Compress
Memory card</td><td>Digital images
Digitised
Pixels
Formats (JPEG, TIFF, PNG, GIF, BMP, HEIC)
Bitmap
Raster graphics
Vector graphics
Creative
Digital video files
Production team
Camera operator
Sound operator
Director
Editor / edit
Audio
Microphone
Record
Soundtrack
Titles
Credits
Transition</td><td>Storyboard
Blooper reel
Timeline
Clips
Footage
Cut
Special effects
Game designers
Digital artists
Graphic designers
Gameplay
Game mechanics
Code
Program
Location / setting
Background
Characters
Sprites
Theme
Aim / goal
Controls
Playability
Evaluation</td><td>2</td><td>How do digital images work?
Find out about pixels and how images are displayed and stored, including bitmap images and vector images. Do mystery pixel art on Busy Things. Create bitmap challenges for each other.</td></tr>
<tr><td colspan="3"></td><td></td><td>3</td><td>Getting creative with computers
Consider how computers can be used creatively in many different ways. Introduce the idea of making a film and begin to consider the different types of media within it.</td><td></td></tr>
<tr><td colspan="3"></td><td></td><td>4</td><td>Creating digital video and audio
Find out about file sizes. Work as a team to plan, shoot and edit the content for the film.</td><td></td></tr>
<tr><td colspan="3"></td><td></td><td>5</td><td>DT/Computing: Design a Computer Game
Introduce the task to design and make a computer game for children in Sapling class. Evaluate existing games and begin to design their own game, considering theme, characters, aim, instructions, controls etc. They can choose between a catching game, a jumping game, a maze game or a pong game.</td><td></td></tr>
<tr><td colspan="3"></td><td></td><td>6-7</td><td>DT/Computing: Make a Computer Game
Create the games they planned in the previous session.</td><td></td></tr>
<tr><td colspan="3"></td><td></td><td>8</td><td>DT/Computing: Evaluate a Computer Game
Invite Sapling class to play their games and give feedback. Use this to evaluate the games.</td><td></td></tr>
<tr><td colspan="4">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="4">How do you live in an increasingly digital world?</td><td colspan="3">To give back to the community by creating games for younger pupils.</td></tr>
</table>

Big Question Link: What do you believe?

Unit grid: DT: Construction: use Islamic pattern from art to create a clay tile

Year A/Year B

Autumn /Spring /Summer

<table>
<tr><td colspan="2">Prior Learning Links</td><td colspan="2">Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td colspan="2">Understanding the effect of artistic choices on the receiver</td><td colspan="2" rowspan="8">• 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
• select from and use a wider range of tools and equipment</td><td>1</td><td>Recap learning from the art unit lnked to Ancient Islamic Art</td><td rowspan="8">use Islamic patterns from art to create a clay tile</td></tr>
<tr><td colspan="2">Key Vocabulary</td><td>2</td><td>Slip, Score, and Blend (Basic Clay Techniques)</td></tr>
<tr><td>Clay
Slip
Score
Blend
evaluate</td><td></td><td>3</td><td>Make a clay tile with Islamic pattern</td></tr>
<tr><td></td><td></td><td>4</td><td>Paint the tile</td></tr>
<tr><td></td><td></td><td>5</td><td>Evaluate the work</td></tr>
<tr><td></td><td></td><td>6</td><td></td></tr>
<tr><td colspan="4">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="4">Do you believe?</td><td colspan="3">Be respectful to other people’s beliefs</td></tr>
</table>

Big Question Link: ¿Qué hizo que los mayas fueran increíbles?

Unit grid: DT: Earthquake safe buildings

Year A/Year B

Autumn /Spring / Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives
Evaluate
• 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 and prototypes
Make
• Select from and use a wider range of tools and equipment to perform practical tasks 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
• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
Technical knowledge
• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Construction: Viking boats
Mechanics and construction: Roman catapults</td><td>1</td><td>Earthquake simulation
Investigate what an earthquake is and simulate an earthquake to support knowledge and understanding.</td><td rowspan="6">Spaghetti and marshmallow structures
Prototypes of earthquake proof buildings</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Marshmallow builders
Work in groups to build structures out of marshmallows and spaghetti. How earthquake proof are they?
Research what makes buildings earthquake proof.</td></tr>
<tr><td>Earthquake
Fault line
Tectonic plate</td><td>3</td><td>Earthquake proof buildings
Design an earthquake proof building, Include labelled exploding diagrams etc.</td></tr>
<tr><td></td><td>4</td><td>Prototype
Build a prototype using school based resources e.g. card, glue, tape, staples etc.</td></tr>
<tr><td></td><td>5 & 6</td><td>Test and evaluate
Use a tray with sand in the base to test prototypes and evaluate the buildings against the success criteria.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="2">The legacy of the Mayans and the impact up on Mexico</td><td colspan="2">How are natural resources used to support living life in all its fullness?</td></tr>
</table>

Big Question Link: Evacuee or Refugee?

Unit grid: DT: Electronics: Design and make a Morse code device

Year A/Year B

Autumn /Spring / Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives
Evaluate
• 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 and prototypes
Make
• Select from and use a wider range of tools and equipment to perform practical tasks 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
• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
Technical knowledge
• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</td><td colspan="2">Session overviews</td><td rowspan="4">Unit Outcomes
A device able to send Morse code</td></tr>
<tr><td>Electricity</td><td>1</td><td>The history of the Morse code</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Design a Morse code device</td></tr>
<tr><td>Morse code
Distress signal
Batteries, paper clips, tin foil, paper, light bulb, buzzer, wires and switch.
Labelled drawing
SOS</td><td>3
4</td><td>Make the device</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="2">How did the Morse code help with evacuation during WW2</td><td colspan="2">How did the Morse code device keep people safe?</td></tr>
</table>

Big Question Link: How far can you go

Unit grid: DT: Mechanics: Design and make a space buggy

Year A/Year B

Autumn /Spring / Summer

<table>
<tr><td>Prior Learning Links</td><td rowspan="4">Key NC Objectives
Evaluate
• 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 and prototypes
Make
• Select from and use a wider range of tools and equipment to perform practical tasks 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
• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
Technical knowledge
• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</td><td colspan="2">Session overviews</td><td rowspan="4">Unit Outcomes
A space buggy that can travel</td></tr>
<tr><td>Electricity</td><td>1</td><td>The history space buggies.</td></tr>
<tr><td>Key Vocabulary</td><td>2</td><td>Look at what is already there</td></tr>
<tr><td>Lunar Rover
Prototype</td><td>3
4
5
6</td><td>Design a space buggy
Make prototype and test it
Make improvements
Evaluate the work</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How far did your space buggy travel?</td><td colspan="3">To aspire to go to the moon</td></tr>
</table>

Big Question Link: What would you vote for?
Unit grid: Science: Food technology: Greek Food
Year A/Year B
Autumn /Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td rowspan="4">• Use the basic principles of a healthy and varied diet to prepare dishes
• Understand where food comes from.</td><td rowspan="7">• Understand and apply the principles of a healthy and varied diet
• Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
• Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</td><td>1</td><td>Greek Food
Try some different Greek foods. Think about texture, taste, appearance and smell. What are common ingredients and why?</td><td rowspan="7">Greek salad
Tzatziki
Ancient Greek Recipe
Recipe Book</td></tr>
<tr><td>2</td><td>What is in a Greek Salad?
Identify essential and optional ingredients for a Greek Salad.
Create a recipe for a Greek Salad.</td></tr>
<tr><td>3</td><td>Make a Greek Salad
Children make a Greek salad, and a Tzatziki dip.
Evaluate</td></tr>
<tr><td>Key Vocabulary</td><td>4</td><td>Ancient Greek Food
Explore some Ancient Greek recipes. How do this differ from modern recipes? What do the ingredients tell us about Ancient Greece?
Vote for one to make. (Link to Ancient Greek legacy: democracy)</td></tr>
<tr><td>Dolmades
Olives
Tzatziki
Hummus
Ingredients
Seasonality
Modern

Cut
Slice
Grate
Cook
Seasonal
Ancient
Recipe</td><td>5</td><td>Recreate an Ancient Greek dish
Make the chosen recipe. Share with key adults in the school. Evaluate the recipe. How does it compare to the modern Greek food that has been tried?</td></tr>
<tr><td>6</td><td>Recipe Book
Create a class Greek Recipe book, using both modern recipes and Ancient Greek recipes. Give one to Laura to use in the school kitchen!
These can be copied and sold to the school community!</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Vote for a recipe to make.</td><td colspan="3">Giving back to the community – create a cook book.</td></tr>
</table>