Topic structure: Design, Make, Evaluate

DT: EYFS

Ourselves	Celebrations	Traditional Tales	Local Area/Arctic/Jungle	Plants and Growing	Seaside Minibeasts

EYFS Framework & Development Matters:

Children in Reception:
Physical Development:
- Progress towards a more fluent style of moving, with developing control and grace.
-Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
-Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
Expressive Arts and Design:
- Explore, use and refine a variety of artistic effects to express their ideas and feelings.
-Return to and build on their previous learning, refining ideas and developing their ability to represent them.
-Create collaboratively, sharing ideas, resources and skills.

ELG:
Fine Motor Skills:
Use a range of small tools, including scissors, paintbrushes and cutlery.
Creating with Materials:
- 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.

Skills Progression: objectives to be covered over the course of the year

Design-Create collaboratively, sharing ideas, resources and skills (DM-rec)
Make- -Explore, use and refine a variety of artistic effects to express their ideas and feelings (DM-rec)
-Create collaboratively, sharing ideas, resources and skills (DM-rec)
-Safely use and explore a variety of materials, tools and techniques experimenting with colour, design, texture, form and function (ELG)
Evaluate- -To return to and build on their previous learning, refining ideas and developing their ability to represent them (DM-rec)
-Share their creations, explaining the processes they have used (ELG)
Technical Knowledge- -Join different materials and explore different textures (DM-rec)
Cooking and Nutrition- -To know and talk about the different factors that support their overall health and wellbeing e.g. healthy eating (DM-rec)
-Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of making healthy food choices (ELG)

Core End Points
How can we join different materials together? Which tools did you use to construct your model? Why have you chosen those materials? Can you tell me how your model works? How could you improve your model? What is a healthy diet?
Vocabulary
DESIGNING-Plan Draw Ideas Design Fold Cut Glue Label **MAKING- Make Build Combine Join Shape Tools Safety** **EVALUATING- Change Like Dislike Next time Better Worse Different Instead** **COOKING & NUTRITION-Healthy Unhealthy Source Fruit Vegetables Clean Wash Safe Dirty Unsafe Cook Cut Chop**

DT: Year 1

DT CORE QUESTION: What is the most important aspect of your design?

Traditional Tales	Space	Paddington	Hot and Cold Places	Castles	Seaside
Skills Progression: objectives to be covered over the course of the year					
Design: -Talk about their design -Draw a simple labelled pictures to show what they have made or intend to make -Talk about how their products will work and who they are for **Make:** -Mark out and cut materials using scissors					

-Select and use appropriate tools for task including using knives with close supervision

Evaluate:

-To talk about their design/model and suggest an improvement

To evaluate their ideas against the success criteria

Technical Knowledge:

-Investigate joining using a variety of materials e.g. PVA glue, glue stick, sticky tape, treasury tags, split pins, blu tack

-To talk about the movement of simple mechanisms e.g. levers, sliders, wheels and axles

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Cooking and Nutrition:

-To name some healthy foods and begin to talk about why it is important to have a healthy diet.

-To prepare food by making a fruit salad

-To understand where food comes from

Practical Knowledge: How children will develop DT skills across a topic

Traditional Tales	Space	Paddington	Hot and Cold Places	Castles	Seaside
Traditional Tales Sock Puppets -Know how to use simple a simple stitch to join fabrics together	**Making a Space Buggy** -Know what wheels and axels are and how they function in their design.	**Picnic Food (cooking and nutrition)** -Know which foods are healthy and why it is important to have a healthy diet. -Know how to prepare foods hygenically.			**Making Pop up toys** -Know what a slider is and how it works.

Core end points

What is a slider? How do they work?

Can you name some healthy foods?

How do we attach things onto fabric?

How do wheels and axels work?

Vocabulary

<u>DESIGNING</u>- Plan, Prepare, Design, Materials, Tools, Ideas, Use, Model

<u>MAKING</u>- Fast, Slow, Faster, Slower, Up, Down, Turn, Wind up, Design, Draw, Sketch, Tools, Fix, Glue, Attach, Sew, Features, Brick, Wood, Stone, Cloth, Metal, Foam, Felt, Paper, Tissue, Newspaper, Cardboard, String, Wool, Clay, Scissors, Glue, Tape, Cut, Stick, Decorate, safety

<u>EVALUATING-</u> Change Improve Prefer Useful Unsuccessful Future Progress Modify Alter Adapt Original Evaluate

<u>TECHNICAL KNOWLEDGE-</u> Complete Product Final Materials Mix Texture Design Structures Mechanisms Product, slider

<u>COOKING & NUTRITION-</u> Healthy Unhealthy Source Fruit Vegetables Clean Wash Safe Dirty Unsafe Amount Ingredients Recipe Weight Nutrients Vegetarian Utensils Sprinkle Cut Cook Whisk Stir Mix Pour

DT: Year 2

Pirates	Great Fire of London	Where I live	Africa	All Creatures Great and Small	Superheroes

Skills Progression: objectives to be covered over the course of the year

Design:
-Evaluate their design/model against simple design criteria and suggest how it could be improved
-Draw labelled pictures to show what they have made or intend to make

Make:
-Join materials effectively using glue, sticky tape, split pins, over stitch.
-Select and use appropriate tools for tasks including using needles and knives with close supervision

Evaluate:
-To evaluate their design/model against simple design criteria and suggest how it could be improved
-Evaluate and explore a range of existing products (Pirate ships Autumn 1)

Technical Knowledge:
-To evaluate their design/model against simple design criteria and suggest how it could be improved
-Evaluate and explore a range of existing products (Pirate ships Autumn 1)

Cooking and Nutrition: -To talk about what foods are needed for a healthy diet.
-To prepare foods by peeling and cutting fruits and vegetables
-To understand where foods come from.
(My healthy lifestlye Spring 1)

Practical Knowledge: How children will develop DT skills across a topic

Pirates	Great Fire of London	Where I live	Africa	All Creatures Great and Small	Superheroes
Making a pirate ship -Know how a model can be made stronger, stiffer and more stable.	**Making Great fire of London town/ houses** **-**Know which materials to use to achieve the desired outcome		**Making Pancakes** -Know that food comes from plants or animals.		**Textiles- Super hero masks** -Know how to use a simple stitch to attach things to their felt masks

-Know how a lever works and how they can be used effectively in their design - Know how the properties of different materials effect what they can be used for.	-Know how a model can be made stronger, stiffer and more stable.		-Know how to prepare simple dishes safely and hygienically.		-Know which tools to use to safely cut and enhance their mask

Core end points
What is a lever? How do they work? What foods are needed for a healthy diet? How can we make a model stronger or more stable? How do we join two pieces of fabric together?

Vocabulary
<u>DESIGNING</u>- Plan Prepare Design Materials Tools Ideas Use Model **<u>MAKING</u>- Thick, Thin, strong, sturdy, stiff, materials, Design Draw Sketch Tools Fix Glue Attach Features, sew Brick Wood Stone Cloth Metal Foam Felt Paper Tissue Newspaper Cardboard String Wool Clay Scissors Glue Tape Cut Stick Decorate Safety** **<u>EVALUATING-</u> Change Improve Prefer Useful Unsuccessful Future Progress Modify Alter Adapt Original Finished article Evaluate Graphics** **<u>TECHNICAL KNOWLEDGE-</u> Complete Product Final Materials Mix Texture Design Structures Mechanisms Product, lever** **<u>COOKING & NUTRITION</u>- Healthy Unhealthy Source Fruit Vegetables Clean Wash Safe Dirty Unsafe Amount Ingredients Recipe Weight Nutrients Vegetarian Dietary requirements Utensils Sprinkle Cut Cook Whisk Stir Mix Pour**

DT: Year 3

Who Lived in Britain? Stone Age to Iron Age	Why were the Romans so powerful?	What makes the Earth angry?

Skills Progression: objectives to be covered over the course of the year
Design: -Evaluate their design/model against design criteria including its purpose and suggest improvements -Use different information sources to help in designing -Communicate ideas in different ways e.g. discussion, annotated sketches and lists -Sketch/model alternative ideas

Make: -Mark out and with some accuracy cut materials using standard measures
-Select from and use a wider range of tools with greater accuracy and control (e.g. saws, knives etc.)

Evaluate: To evaluate their design/model against design criteria including its purpose and to suggest improvements
-Consider the views of others to improve their work

Technical Knowledge: -Investigate simple electrical circuits

Cooking and Nutrition: -To know a healthy diet is made up of a variety and balance of different foods.
-Prepare and cook a variety of foods, following a recipe

Practical Knowledge: How children will develop DT skills across a topic

Who Lived in Britain? Stone Age to Iron Age	Why were the Romans so powerful?	What makes the Earth angry?
Textiles- weaving -know how single woven fabrics can be used to create 3D textiles products -know about the developments in weaving over time.	**Making pizza's- Cooking and nutrition** -Know that food is grown/ caught/ reared in the UK, Europe and the wider world. -Know that food can be fresh, pre-cooked and processed	**Volcano with an alert panel (light or buzzer):** -Know how a lever works. -Know how to create a simple electrical circuit with a light or a buzzer.

Core end points

What is a mechanism? Which mechanism have you used in your product?
Where does food come from?
How are fabrics created?
How does an electrical circuit work?

Vocabulary

DESIGNING- Plan Organise Initial ideas Criteria Diagrams Labels Annotate Brief Product Appearance Consumer Customer Target Audience Purpose Application Assemble Illustrate Sketch
MAKING- Materials Mould Liquid Solid Form Shape Adhesive Lattice, weave, woven, loom, Mass-produce Hand-made Packaging Presentation Machine made Durable Assemble Measure Equipment Material Seam Tension Structure Mechanism Pulley Lever Gear Safety, fabric
EVALUATING- Assess Edit Improve Alter Outcome Develop Test Analyse Advantage Disadvantage Efficiency Challenge Specification Sustainability
TECHNICAL KNOWLEDGE- Textile Texture System Scale Design brief Mass Weight Design Structures Mechanisms Product Reinforce strengthen Technique, weave, pulley
COOKING & NUTRITION- Healthy Unhealthy Balanced Vitamins Disease Nutrition Healthy eating Hygiene Diet Grams Storage Presentation Taste Texture Flavour Sift Weigh Pour Slice Blend Melt Heat Grate, Knead Sprinkle Crumble

DT: Year 4

Anglo Saxons and Vikings	Mountains	Ancient Egyptians

Skills Progression: objectives to be covered over the course of the year

Design: -Evaluate their design/model against design criteria including its purpose, appeal to the user, appearance and to suggest improvements based upon their evaluation
-Use different information sources to help in designing (packaging examples)
-Communicate ideas in different ways e.g. discussion, annotated sketches, lists
-Sketch/model alternative ideas -Plan a sequence of actions

Make: -Use simple cutting, joining, shaping and finishing techniques
-Select from and use a wide range of tools
with greater accuracy and control (e.g. needles, knives etc.)

Evaluate: -To evaluate their design/model against design criteria including its purpose, appeal to the user, appearance and to suggest improvements based upon their evaluation
-Evaluate, disassemble (where appropriate) and analyse a range of existing products (boxes) -To learn about great designers and inventors and they have changed the world

Technical Knowledge: Investigate and use electrical circuits incorporating switches, bulbs and buzzers

Cooking and Nutrition: -To know the food journey of a product (chocolate)
- Prepare and cook a variety of foods, following a recipe

Anglo Saxons and Vikings	Mountains	Ancient Egyptians
The Bayeaux tapestry (Textiles) -know when to use a running stitch and when to use back stitch. -know how to thread a needle, knot on and knot off	**A snack for a mountaineer –flapjack (Cooking and nutrition)** -know how to follow a recipe -know the journey of a food product (chocolate) **Junior stem- lego kits?** -know how to program a computer to control their products	**Design and make a Pneumatic Sarcophagus (Woodwork)** **(see Hepp DT-** Pneumatic Sarcophagus - KS2 - HEPP DT**)** -know how pneumatics systems create movements and where they are used in everyday life. -know how to make strong stiff shell structures

Core end points

What different stitches have you used? When do you use the different stitches?
Can you tell me about food journey of chocolate?
How can you use an ipad to control your model?
How do pneumatics work? Which everyday objects use pneumatics?

Vocabulary

DESIGNING- **Plan Organise Initial ideas Criteria Diagrams Labels Annotate Brief Product Appearance Consumer Customer Target Audience Purpose Application Assemble Illustrate Sketch**
MAKING- **Materials Mould Liquid Solid Form Shape Adhesive Lattice Mass-produce Hand-made Packaging Presentation Machine made Durable Assemble Measure Equipment Material Running stitch Blanket stitch cross stitch Seam Tension Structure Mechanism Pulley Lever Gear Safety Pneumatics**
EVALUATING- **Assess Edit Improve Alter Outcome Develop Test Analyse Advantage Disadvantage Efficiency Challenge Specification Sustainability**
TECHNICAL KNOWLEDGE- **Textile Texture System Scale Design brief Mass Weight Design Structures Mechanisms Product Reinforce strengthen Technique**
COOKING & NUTRITION- **Healthy Unhealthy Balanced Vitamins Disease Nutrition Healthy eating Hygiene Diet Grams Storage Presentation Taste Texture Flavour Sift Weigh Pour Slice Blend Melt Heat Grate, Knead Sprinkle Crumble Food miles**

DT: Year 5

Mayans: North America	Rivers and the Water Cycle	Ancient Greece

Skills Progression: objectives to be covered over the course of the year

Design: -Evaluate their design/model against design criteria including its purpose, appeal to the user, appearance, cost and to suggest improvements based upon their evaluation
-Collect information from different sources to help with design ideas
-Communicate ideas in different ways e.g. discussion and pattern pieces
-Sketch/model alternative ideas giving detailed reasons for their chosen idea
-Develop plans and modify them as appropriate through discussion or drawing or modelling

Make: Mark out and accurately cut materials using standard measures
-Select from and use a wide range of tools with accuracy and control (e.g. needles, knives etc.)

Evaluate: To evaluate their design/model against design criteria including its purpose, appeal to the user, appearance, cost and to suggest improvements based upon their evaluation
-Test and evaluate their work as it develops, making adjustments when necessary
-Consider the views of others to improve their work

Technical Knowledge: -Investigate appropriate ways to join materials e.g. glue, stitches
-Investigate ways to strengthen different materials/ shapes that are stronger

Cooking and Nutrition: -To describe how seasonality can affect food availability.
-Prepare and cook a variety of foods, following a recipe.
-Test, evaluate and modify the product where necessary

Skills Progression	Skills Progression	Skills Progression
Mayan Headdress (Textiles) - know which stitches to use when sewing fabrics together and also adding decorative items.	**Bridges (woodwork)** -know how to accurately measure, mark out, cut and shape materials and components -know how to reinforce and strengthen a 3D framework -know how pulleys create movement	**Biscuits? Cooking and nutrition** -know that seasons may affect the food available -know recipes can be adapted to change the appearance, taste, texture and aroma
Core end points		
Which stitches did you use to create your Mayan headdress? Why did you choose those stitches? What is a pulley? How do they work? What methods can you use to strengthen a wooden frame? What factors effects food availability in the UK?		
Vocabulary		
<u>DESIGNING-</u> Plan Organise Prototype Initial ideas Criteria Diagrams Labels Annotate Brief Product Appearance Consumer Customer Target Audience Purpose Application Constraints Client Assemble Illustrate Annotated sketch Innovation **<u>MAKING-</u> Materials Mould Liquid Solid Form Shape Adhesive Lattice Mass-produce Hand-made Packaging Presentation Machine made Dimensions Durable Assemble Measure Equipment Material Running stitch Blanket stitch Cross stitch Seam Tension Structure Mechanism Pulley Lever Gear Safety Recipe Appearance** **<u>EVALUATING-</u> Effective Fit for purpose Design criteria Alternatives Models Quality Function Functionality Challenge Specification Sustainability** **<u>TECHICAL KNOWLEDGE-</u> Durable Transparent Translucent Stiff Rigid Malleable Padding Hinge Pivot Textile Texture System Scale Design brief Mass Weight Load Tension** **<u>COOKING & NUTRITION-</u> Healthy Unhealthy Balanced and Unbalanced diets Vitamins Disease Nutrition Disinfect Bacteria Cross contamination Healthy eating Hygiene Diet Grams Storage Presentation Taste Texture Flavour Sift Weigh Pour Slice Blend Melt Heat Grate, Knead Sprinkle Crumble Aroma**		

DT: Year 6

Worl War 1	World War 2	Victorians	South America
Skills Progression: objectives to be covered over the course of the year			
Design: -Evaluate their design/model against design criteria including its purpose, appeal to the user, appearance, cost, sustainability and to suggest improvements based upon their evaluation -Collect information from a number of different sources to help with design ideas -Communicate ideas in different ways e.g. discussion, annotated sketches -Sketch/model alternative ideas giving detailed reasons for their chosen idea			

-Develop step by step plans and modify them as appropriate through discussion or drawing or modelling

Make: -Use cutting, joining, shaping and finishing techniques accurately.

-Select from and use a wider range of tools with accuracy and control (e.g. saws, knives, glue guns, hammers etc.)

Evaluate: -To evaluate their design/model against design criteria including its purpose, appeal to the user, appearance, cost, sustainability and to suggest improvements based upon their evaluation

-Test and evaluate their work as it develops, making adjustments when necessary -Consider the views of others to improve their work

Technical Knowledge: -Investigate and use mechanisms/electrical circuits possibly incorporating switches, bulbs, buzzers and motors and use a computer programme to make their models move

Cooking and Nutrition: -To know food and drink contain different substances such as nutrients, water and fibre needed for health.

-To name some of these substances and the foods they are found in.

- Test, evaluate and modify their products where necessary

Skills Progression	Skills Progression	Skills Progression	Skills Progression	Skills Progression	Skills Progression
Design a cushion- make do and mend- (Textiles) -know how to combine different fabrics to make a 3D textile product -know which fabrics are suitable to combine	**Rationing- Scones (Cooking and nutrition)** -know that different food and drink contain different substances- nutrients, water, fibre, that are needed for health -know that recipes can be adapted by adding or substituting one or more ingredients -know why some foods were rationed during the war				**Machine-Electrical model – (Crumble kit)** - Know how to reinforce and strengthen a 3D framework - Know how to program a computer to monitor changes in the environment and control their products

Core end points

Which stitches did you use to create your cushion? Why did you choose that stitch?

Which important substances that contribute to good health are found in food and drink? Can you give some examples?

What is rationing? Why were some foods rationed?

Tell me how your electrical model works? How can you control your model?

Vocabulary

DESIGNING- **Plan Organise Prototype Initial ideas Criteria Diagrams Labels Annotate Brief Product Appearance Consumer Customer Target Audience Purpose Application Constraints Client Assemble Illustrate Annotated sketch Innovation**

MAKING- **Materials Mould Liquid Solid Form Shape Adhesive Lattice Mass-produce Hand-made Packaging Presentation Machine made Dimensions Durable Assemble Measure Equipment Material Running stitch Blanket stitch Cross stitch Seam Tension Structure Mechanism Pulley Lever Gear Safety Circuit Light Buzzer CAD**

EVALUATING- **Effective Fit for purpose Design criteria Alternatives Models Quality Function Functionality Challenge Specification Sustainability**

TECHICAL KNOWLEDGE- **Durable Transparent Translucent Stiff Rigid Malleable Padding Hinge Pivot Textile Texture System Scale Design brief Mass Weight Load Tension**

COOKING & NUTRITION- **Healthy Unhealthy Balanced and Unbalanced diets Vitamins Disease Nutrition Disinfect Bacteria Cross contamination Healthy eating Hygiene Diet Grams Storage Presentation Taste Texture Flavour Sift Weigh Pour Slice Blend Melt Heat Grate, Knead Sprinkle Crumble Rationing**