



Year 1/2 Curriculum Cycle A Autumn 2023

Design Brief- How can I design and build a windmill house for my mouse client?

4 lessons over 5 days. (Make/create lessons may take 2 days to complete)

Key Learning Skills :

Prior learning:

Experience of using creative materials (pens/paper/coloured pens and papers).
Experience of cutting and joining materials with simple techniques.

Research: Investigative and Evaluative Activities (IEAs)

Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. Types of windmills and paper model making techniques.

Use questions to develop children's understanding e.g. *How many parts is it made from? Who are paper models made secure? How is it finished? Why do you think these joining techniques have been chosen? Who might use it and why?*

Make drawings of existing products, stating the user and purpose. Identify and label if appropriate.

Investigate materials to determine which is best for the purpose of the product they are creating.

Designing: Design, Make and Evaluate Assignment (DMEA)

Design a functional and appealing product for a chosen user and purpose based on simple design criteria.

Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.

Provide the children with a context that is authentic. Discuss with children the purpose and user of the products they will be designing, making and evaluating. Design criteria developed with the teacher should be used to guide the development and evaluation of the children's products.

Ask the children to generate a range of ideas e.g. *What parts will the product need to have and what will it be made from? What size will it be? How will it be made secure and finished?*

Through talk, drawings and mock-ups, ask the children to develop and communicate their ideas. Information and communication technology could be used for symmetry and pattern ideas. Choose one idea to follow through.

Talk with the children about the stages in making before assembling quality products, applying the knowledge, understanding and skills learnt through the IEAs and FTs.

Making: Focused Tasks (FTs) and DMEAs

Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.

Select from and use materials according to their characteristics. Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher.

Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or glue the templates.

Using prepared teaching aids, demonstrate appropriate examples of construction techniques for children to practise in guided groups. Talk about the advantages and disadvantages of each technique.

Using prepared teaching aids, demonstrate examples of finishing techniques for children to practise in guided groups e.g. Painting, colouring and gluing

Evaluating: Design, Make and Evaluate Assignment (DMEA)

Explore and evaluate a range of existing products relevant to the project being undertaken.

Evaluate their ideas throughout and their final products against original design criteria. Evaluate on-going work and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.

Technical knowledge and understanding: Design, Make and Evaluate Assignment (DMEA)

Understand how simple 3-D products are made, using a template.

Understand how to construct a model using different techniques e.g. Gluing, using tape, glue, paper folds.

Explore different finishing techniques e.g. using painting, crayons, gluing, pens and pencils

Know and use technical vocabulary relevant to the project.

Key Vocabulary:

Tier 1: weak, mark, cut, glue, paint,

Tier 2: design, stable, technique, function

Tier 3: axle, net, turbine, structure, client, design criteria, evaluation.

Lesson 1

Learning what a windmill is and constructing a model windmill by reference to design criteria created for the client, Mouse, who lives in the windmill in Old Amsterdam.

Learning Objectives:

To include individual preferences and requirements in my design
I know what a windmill is
I can describe the purpose of structures
I understand the importance of clear design criteria
I understand what a net is

Lesson 2

Decorate their templates, pupils construct the main part of their structure, making sure that it stands freely and holds together.

Learning Objectives

To make a stable structure
I can follow instructions to cut and assemble the supporting structure of my windmill
I know that that the shape of materials can be changed to improve the strength and stiffness of structures
I know that cylinders are a strong type of structure that are often used for windmills and lighthouses
I understand what stable means and can ensure my structure has this property

Lesson 3

Children complete their turbines, through careful cutting and folding, and attach them to their structure, testing its strength and stability.

Learning Objectives:

To assemble the components of my structure
I can cut and assemble my turbine correctly
I understand that windmill turbines use wind to turn and make the machines inside work
I know that axles are used in structures and mechanisms to make parts turn in a circle
I can attach my turbine to the axle and attach them to the structure of my windmill
I can test that my turbine turns in the structure and alter the parts if it doesn't

Lesson 4

After adding the finishing touches to their windmills, children test their structures to check that they would make a suitable home for the mouse.

Learning Objectives

To evaluate my project and adapt my design
I can evaluate my windmill according to the design criteria
I can test whether my structure is strong and stable and reinforce it if necessary
I can test whether my turbine turns in the structure and alter the parts if it doesn't

my turbine turns freely in the wind/when blown on



Year 1/2 Curriculum Cycle A Spring 2024

Design Brief - How can we make a picture move?

Aspect of DT - Mechanisms Focus - joining techniques

Key Learning Skills

Prior learning

- Early experiences of working with paper and card to make simple flaps and hinges.
- Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape.

Designing: Design, Make and Evaluate

Assignment (DMEA)

- Discuss with the children what they will be designing, making and evaluating e.g. *Who will your product be for? What will be its purpose? How do you want it to move? Will you use a lever or a slider?*
- Generate simple design criteria with the children e.g. the mechanism should work smoothly, it should make the right type of movement.
- Encourage the children to develop their ideas through talking, drawing and making mock-ups of their ideas with paper and card.
- Discuss the finishing techniques the children might use e.g. using digital text and graphics, paint, felt tipped pens or collage.
- As a whole class, talk about the order in which the mechanisms will be made.
- Ask children to evaluate their developing ideas and final products against the original design criteria.

Making

- Plan by suggesting what to do next.
 - Select and use tools, explaining their choices, to cut, shape and join paper and card.
 - Use simple finishing techniques suitable for the product they are creating.
 - Demonstrate simple levers and sliders to the children using prepared teaching aids. It is helpful if these are also used in context e.g. the slider is used to show a snail appearing from behind a stone, the lever is used to show a butterfly flying to a flower.
 - Use questions to develop children's understanding e.g. *How does the slider move? How does the lever move? Which part of the mechanism is the pivot? What does the movement of the slider and lever remind you of?*
 - Following teacher demonstration of the correct use of tools and materials, children should develop their knowledge and skills by replicating the slider and lever teaching aids. Encourage children to add pictures to their mechanisms.

Evaluating Explore a range of existing books and everyday products that use simple sliders and levers.

- Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.
- Children explore and evaluate a collection of books and everyday products that have moving parts, including those with levers and sliders. e.g. *What is it? Who is it for? What is it for?*
- Use questions to develop children's understanding e.g. *What do you think will move? How will you make it move? What part of the product moved and how did it move? How do you think the mechanism works? What else could move in the product? How well does it work?*
- Introduce and develop vocabulary e.g. lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, in, out

Technical knowledge and understanding

- Explore and use sliders and levers.
- Understand that different mechanisms produce different types of movement.
- Know and use technical vocabulary relevant to the project.

Lesson 1

Pupils learn about the direction of movements and explore the mechanisms required to make these work, by creating examples of side-to-side sliders and up-and-down sliders from templates

I understand that sliders are mechanisms
I know that sliders can make things move
I can create moving models that use sliders
I can use the words: up, down, left, right, vertical and horizontal to describe movement

Lesson 2

Children plan their moving story books against a Design Criteria using differentiated templates, deciding on the backgrounds, moving parts, mechanisms and direction of movement required

I can design three pages of my moving storybook by: drawing background pictures, drawing the moving parts, deciding whether I will use a side-to-side slider or an up-and-down slider on each page labelling the movement of each type of slide.

Lesson 3

Referring to their design templates from Lesson 2, children make the various elements of their moving story-books, including bridges and guides to restrict the movement of their sliders where necessary. I can make my moving picture by: Drawing my background. Drawing and cutting my moving parts. Making sliders for my moving parts. Putting all my parts together to create my moving picture. Possibly making guides and bridges

Lesson 4

Pupils test their finished storybooks with their target audience of Reception children and evaluate their end result against the initial design criteria.

I can review the success of my product by testing it (reading it to reception children)
I can evaluate my product against the design criteria
I can consider what I have learnt from making my moving story book

Key Vocabulary

Tier 1 tape, join, bridge, paper, forwards, backwards, ideas, pull, push, up, down,

Tier 2: function, curve, purpose, user, horizontal, vertical.

Tier 3: lever, slider, pivot, slot, design criteria, evaluate, mechanism



Year 1/2 Curriculum Cycle A Summer 2024

Design Brief— What did children play with at the beach?

Aspect of DT - Textiles Focus - templates and joining- puppets

Key Learning Skills

Prior learning

- Explored and used different fabrics.
 - Cut and joined fabrics with simple techniques.
- Thought about the user and purpose of products.

Investigative and Evaluative Activities (IEAs)

Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. fabrics, joining techniques, finishing techniques and fastenings used.

- Use questions to develop children's understanding e.g. *How many parts is it made from? What is it joined with? How is it finished? Why do you think these joining techniques have been chosen? How is it fastened? Who might use it and why?*
- Make drawings of existing products, stating the user and purpose. Identify and label, if appropriate, the fabrics, fastenings and techniques used.

Investigate fabrics to determine which is best for the purpose of the product they are creating.

Designing (DMEA)

- Design a functional and appealing product for a chosen user and purpose based on simple design criteria.

Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.

Making—Focused tasks (FTs) and Design, Make and Evaluate Assignment (DMEA)

- Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.

Select from and use textiles according to their characteristic

Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher.

- Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or pin the fabric to the templates or paper patterns and cut out the relevant fabric pieces for the product.
- Using prepared teaching aids, demonstrate appropriate examples of joining techniques for children to practise in guided groups e.g. running stitch including threading own needle, stapling, lacing and gluing. Talk about the advantages and disadvantages of each technique.
- Using prepared teaching aids, demonstrate examples of finishing techniques for children to practise in guided groups e.g. sewing buttons, 3-D fabric paint, gluing sequins, printing.

Evaluating (DMEAs)

- Explore and evaluate a range of existing textile products relevant to the project being undertaken.
- Evaluate their ideas throughout and their final products against original design criteria.

Technical knowledge and understanding

- Understand how simple 3-D textile products are made, using a template to create two identical shapes.
- Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.
- Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.
- Know and use technical vocabulary relevant to the project.

Lesson 1

Pupils explore and evaluate different ways to join fabrics together, including gluing, pinning and stapling

- I can remember that different techniques may be used to join fabrics for different purposes
- I know how to join fabric by pinning, stapling or gluing

Lesson 2

After deciding on which character their puppet will be based, children use a simple template to cut out their felt.

- I can design a puppet
- I can build my design on a template.

Lesson 3

- Children join their pieces of fabric for their puppet, using their preferred technique of pinning, stapling or gluing.
- I can join fabrics together
- I can align two pieces of fabric
- I know how to use a template
- I can fit my hand into my puppet

Lesson 4

Children decorate their hand puppet in keeping with their chosen storybook character using a variety of carefully selected materials.

- I can use joining methods to decorate my puppet
- I can still put my hand into the puppet after it is decorated

Key Vocabulary

Tier 1: join, mark out, tools, puppet, glue, staple,

Tier 2: finishing techniques, purpose, user, pattern pieces, techniques, decorate, template, design, features,

Tier 3 evaluate, quality mock-up, components, design criteria, fabrics, sew,