



D&T MEDIUM TERM PLANNING -

Year Group: Y1	TERM: Spr 2	Theme: Ice and Fire
<p>National Curriculum: Ensure pupils develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world; build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users; critique, evaluate and test their ideas and products and the work of others.</p>		
<p>Context/ Narrative: Children have been exposed to a range of materials in the Early Years Foundation Stage and have started to think about their characteristics and how these would be good for different purposes. Children have experience in using construction kits to build walls and towers; using tools such as scissors or hole punches with plastic, paper or card; and some experience of different methods of folding and joining card Children have been introduced to joining materials together using different tools and techniques such as gluing, stapling and using tape. Children are familiar with the TASC wheel and know to investigate existing products and materials to inform their design. Children have been encouraged to make and evaluate their finished product in response to a brief.</p>	<p>Concepts/ Principles: User Purpose Functionality Design Decisions Innovation Authenticity</p>	<p>Vocabulary: Structure Strong Stiff Stable Materials Product Construct Purpose Buttress Cut Fold Join</p>
<p>Prior Knowledge:</p> <ul style="list-style-type: none"> Experience of using construction kits to build walls, towers and frameworks. 		<p>Future Knowledge:</p> <ul style="list-style-type: none"> Children will be able to explain materials they will need to make their build and explore different ways to ensure it is strong and stable. Explore initial ideas using drawings and mock-ups.

- Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card.
- Experience of different methods of joining

- Use tools for different purposes: cutting, sticking, curling, bending, joining etc.
- Select and use a range of materials and components, such as paper, card, plastic and wood according to their characteristics.
- Build structures by selecting appropriate materials and investigating ways to strengthen them.
- Evaluate their ideas throughout the process and review their products against original criteria.

End points /by the end of this unit pupils will...

- Be able to create a structure that is strong and stable.
- Be able to explore their design ideas and technical skills by producing a house inspired by the Stuart houses in London at the time of the Great Fire of London.

Crucial knowledge:

- Know how to make freestanding structures stronger, stiffer and more stable.
- Know and use technical vocabulary relevant to the project.

Lesson Number 1 (Investigate and Evaluate)

Key learning:

To explore and investigate houses and materials

Concepts:

User
Purpose
Functionality
Design Decisions
Innovation
Authenticity

Introduction:

Introduce – recap science materials lesson. Properties for house material (rigid, hard, etc.) – discuss why these properties are needed for a house.

Introduce vocab – strong, stable and sturdy.

Introduce houses from different times – what materials were used.

Success Criteria:

Explore and investigate a range of houses to know what characteristics make a good structure.

Suggested resources:

WAGOLL

Direct teaching

Research – use information technology to research materials of houses in the past.

Ask the children to explore and evaluate a range of existing products.

Discuss findings – Encourage children to think of which materials are most suitable depending on the purpose of the house.

Define what a structure is. Structures are things that are built for a purpose.

Structures can be large (e.g. buildings and bridges) or small (e.g. chairs and tables).

A structure that is stable is less likely to fall over.

Structures are more stable when they have a wider base. A structure that is strong and rigid is able to support more weight.

Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper.

Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue or tape.

Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.

Activity

Children explore and evaluate a range of existing products from past and present and from different parts of the world.

Children discuss what characteristics make a sturdy house, a waterproof house, etc...

Key Questions

What different materials can we use to make a house?

Why were these materials used in the past and not anymore?

What do we need to think of when designing a house (do you need to pick waterproof, thermal etc materials?)

What is the most stable/ sturdy material we can use in school?

Vocabulary: Structure, strong, stiff, stable, materials, product, construct, purpose, brief.

Lesson Number 2 (Explore and Trial)

Key learning:

To discuss and investigate a range of materials to design a strong and stable house

Concepts:

User
Purpose
Functionality
Design Decisions
Innovation
Authenticity

Introduction:

Recap on previous findings about different types of houses and materials that can be used.

Direct teaching

Investigate how to design a stiffer structure using different types of materials and ways of joining them together.

Success Criteria:

Explore and investigate a range of materials to know what resources respond best to the brief.
Trial different tools and ways of joining materials together to design a sturdy structure.

Suggested resources:

- Range of materials
- Glue
- Stapler
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Structures are more stable when they have a wider base. A structure that is strong and rigid is able to support more weight.

Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper.

Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue, tape, clips.

Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.

Activity

Children will use the range of materials and tools to explore their own design ideas based upon given brief.

Key Questions

- What tools and equipment do you need to build your house?
- What materials are stronger and stiffer?
- How could you strengthen your structure?
- What will your house look like?
- Can you communicate ideas with your peers?

Vocabulary: Investigate, structure, strong, stiff, stable, materials, product, construct, purpose, brief

Lesson Number 3 (Design)

Key learning:

Children design their own house based on their new knowledge of structures.

Concepts:

User
Purpose
Functionality
Design Decisions
Innovation
Authenticity

Introduction:

Recap on previous findings.

Direct teaching

Encourage children to generate own design ideas and to think of which tools and resources to respond best to the brief based on their previous exploration.

Activity

Children use the TASC wheel to design their own house.

They choose which material, tools and resources they will need to best respond to the brief.
Children discuss their ideas with their peers.

Key Questions

What have you found out about sturdy structures in previous sessions?
Which materials are stronger and stiffer?
What tools and resources will you need to respond to the brief?
Can you communicate ideas with your peers?

Success Criteria:

Use previous knowledge to design a strong and sturdy house.

Suggested resources:

TASC sheet
Pencil
Colouring pencils

Vocabulary: Design, structure, strong, stiff, stable, materials, product, construct, purpose, brief.

Lesson Number 4 (Make and Evaluate)

Key learning:

Children make their own house and evaluate their product

Concepts:

User
Purpose
Functionality
Design Decisions
Innovation
Authenticity

Introduction:

Recap on previous findings.

Direct teaching

Encourage children to use a range of tools and equipment to cut, shape, join and finish their designs.
Children to evaluate their house to ensure their product is fit for purpose.

Activity

Children use their TASC sheet to create their own house.
They use a range of tools and equipment to make their product.
Children evaluate and review their finished product.

Key Questions

What equipment do you need?
What resources do you need to make your house?
Is your product fit for purpose?
Have you responded to the brief?

Success Criteria:

Use structure and materials knowledge to create a sturdy house.

Suggested resources:

TASC sheet
Range of materials
Glue
Cello tape
Masking tape
Stapler
Paint
Brushes
Scissors

Vocabulary: Make, evaluate, design, structure, strong, stiff, stable, materials, product, construct, purpose, brief.

