

Autumn 2 OVERVIEW YEAR 3/4 – DT

Term 2 Book(s) - The Lion the Witch and the Wardrobe		
Topic(s) -		Guide Time =
Assessment:	As well as work scrutiny, teachers are to make judgements based upon children's ability to recall VIPs, and key knowledge.	Very Important Points (VIPs): <ul style="list-style-type: none"> - Structures can be strengthened by incorporating geometric shapes in their design. - Fixings need to be strong and stable and fit for purpose. - Force from various directions needs to be controlled in order to make a structure strong. - Weak materials can be strengthened by the addition of geometric shapes which spread the force of the load - Force can be applied to a structure from many directions. - Spreading the force of the load can improve the capacity of the structure. Fat Questions: How do skyscrapers remain upright in strong winds?
Links to prior learning (sequencing) and canon book	The Lion the Witch and the Wardrobe Children will build on their KS1 and LKS2 knowledge around structures and how they can be strengthened.	
Links to other learning (cross fertilisation)	<p><u>History:</u> The innovations that the Romans brought to Britain.</p> <p><u>Geography:</u> Suitable materials to use in the construction of machines (Volcanoes – stone): Is stone a suitable material to use in the construction of our design?</p> <p><u>PSHE:</u> Links to dealing with safety. How do we keep safe and minimise the effects of taking risks?</p> <p><u>Art:</u> Using sketch techniques in the design process.</p> <p><u>Maths:</u> Geometric shapes.</p> <p><u>English:</u> Evaluating designs using appropriate technical language.</p>	
Links to future learning	This material will support children as they transition into UKS2. It will support children in understanding how to strengthen structures to create a safe product that is useful to society.	
Character/Wider Development ('50	To create a sledge from the The Lion the Witch and the Wardrobe (Canon book).	
	Thematic questions:	

things', cultural capital, skills)

The world beyond us

Are there structures on other planets?

Modern Britain

How have modern materials and practices helped to reduce the harmful effect of using natural resources?

Healthy body, Healthy minds

How has the use of strengthening techniques in equipment helped athletes to improve their performance?

The world around us

How have strengthening techniques enabled society to make progress and develop new, space-saving structures?

Culture

Which major innovations did the Romans introduce to Britain when they invaded?

Technology in action

How do engineers predict how a bridge will behave in adverse weather conditions?

OVERVIEW OF TEACHING SEQUENCE

Sequence	Learning Focus or Key Question	Learning Outcomes (NC)	Key Words/ Vocabulary	Greater Depth/SEND	Misconceptions	Activities and Resources
Lesson 1	LO: To explore how structures can be strengthened.	To apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Strengthen, equal force, share, spread the load, compensate, geometric, stable, impact, masking tape, staple, fasten, secure, points of contact.	<p>GD – To understand how various geometric shapes can affect and improve the structural integrity of a design.</p> <p>SEND- To know that using different shapes can affect how strong a structure is.</p>	<p>Children think that a straight section of material alone is strong enough to withstand extraneous force.</p> <p>Children think that paper or everyday materials cannot be strengthened to accept a load.</p> <p>A solid remains a constant structure when a load/force is applied.</p>	<p>See slides and planning.</p> <p>Watch a video of how a bridge can move when an external force, such as wind or people movement, is applied.</p>
Lesson 2	LO: To design and create a sledge from the Canon book.	To accurately select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities. Investigate and analyse a range of existing products.	Strengthen, equal force, share, spread the load, compensate, geometric, stable, impact, masking tape, staple, fasten, secure, points of contact.	<p>GD- To choose and use a method/s which will strengthen their design and explore how aesthetics play an important role in the design process.</p> <p>SEND- To use a geometric shape which will add strength to their design.</p>	<p>Only one geometric shape will strengthen a structure.</p> <p>A structure can only be strengthened to accept one direction of force.</p>	<p>See slides and planning.</p> <p>Ensure the materials required are available.</p>

Lesson 3	LO: To evaluate my design of a sledge.	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Strengthen, equal force, share, spread the load, compensate, geometric, stable, impact, masking tape, staple, fasten, secure, points of contact.	GD- to suggest improvements to their own and peers' design based on their knowledge of strengthening structures, observations and findings. SEND- To suggest one improvement that could be made to add detail to their design.	Children may think that the final product is an end point in the design process. Children may think that the strength of a structure cannot be improved. Children may think that their choice of material cannot be improved.	See slides and planning. Give opportunities to observe and evaluate their own and peers' work.
<p>Context (big picture learning)</p> <p>Children will apply their learning linking it back to the world around us. They will understand how geometric shapes can strengthen a structure made from a relatively weak material. They will identify that prior learning plays an important role in understanding their progression of knowledge.</p>						

Folder name (Trust shared > Primaries > KS2 > Year 3/4 Planning > Cycle B > Autumn 2 - The Lion the Witch and the Wardrobe > DT)

Lesson 1 L1

Lesson 2 L2

Lesson 3 L3

Key vocabulary

- Strengthen
- Equal force
- Share
- Spread the load
- Compensate
- Geometric
- Stable
- Impact
- Masking tape
- Staple
- Fasten
- Secure
- Points of contact.

DT Knowledge Organiser

Learning intent

We will explore how geometric shapes can be incorporated in to a design in order to improve its strength and stability. We will explore which shapes provide the most strength and stability to a structure whilst developing annotated sketch skills. We will design and make a sledge based on The Lion the Witch and the Wardrobe Canon book.

Fat

Question:

**How do
skyscrapers
remain
upright in
strong
winds?**



What is a structure?

A structure is something constructed (made) such as a building or a bridge, which can be made up of a number of parts that are held or put together in a particular way.



Structures have been made for thousands of years. Some are even visible from space!