Hallcroft Infant & Nursery School

Design & Technology Knowledge Organiser

Autumn 2 - Year 1

Structures- Windmills

What we already know, remember and can do:

- *ELG: Creating with materials: Children safely use and explore materials and tools, experimenting with design, form and function.*
- Fine motor skills- Uses a range of small tools, including scissors.

	Learning Objective	Knowledge What children will know	Skills What children will do	Revisited Vocabulary	New Vocabulary
1	**Exploring Stability** **Learning Objective** To create a stable structure.	To know that structures are things that are built and have a purpose. To know that structures with a wider base are more stable than ones with a narrow base.	To be able to puncture a hole using a pencil. To explain that extra weight added to the base of a structure makes it more stable.	Scissors ?	Base Rotate Rotor Rotor blade Sail Stable Structure
2	**Making the sails** **Learning Objective** To use tools and equipment accurately to make part of a structure.	✓ To know that windmill sails/blades move when pushed by wind.	✓ To use scissors to cut out a shape neatly and accurately. ✓ To be able to fold to make the shape of the structure.	Same Scissors cut sail	Equal Fold Length Rotor blades Width
3	**Attaching the sails** **Learning Objective** To join parts of a structure.	✓ To know that different parts of a structure can be joined together to create a working model.	✓ To join parts of a structure using suitable materials. ✓ To assemble and test the windmill so that the sails can rotate.	structure sails	Attach Join Rotate Test Turn

4	**Evaluating Windmills** **Learning Objective** To evaluate a structure. Recap construction: Recall the key stages and techniques used to	✓ To know that a structure can be tested and improved to make it more stable and effective.	✓ To test and evaluate a windmill against design criteria. ✓ To explain what they like and dislike about their final product.	Like dislike	Evaluate Improve Test
	Future Learning: Baby Bears Chair (Stable Structures Learning Outcomes) • Explain that structures are things that are built and have a purpose. • Understand that structures with a wider base are more stable than ones with a narrow base. • Explain that extra weight added to the base of a structure makes it more stable. • Design a product for a particular user. • Use a sketch to show ideas. • Choose the best method for joining the parts of the product. • Make evenly spaced cuts. • Use scissors to cut out a shape neatly and accurately. • Explain what they like and dislike about their final product.				

Year 1 Design & Technology – Autumn 2 – Structures: Windmills

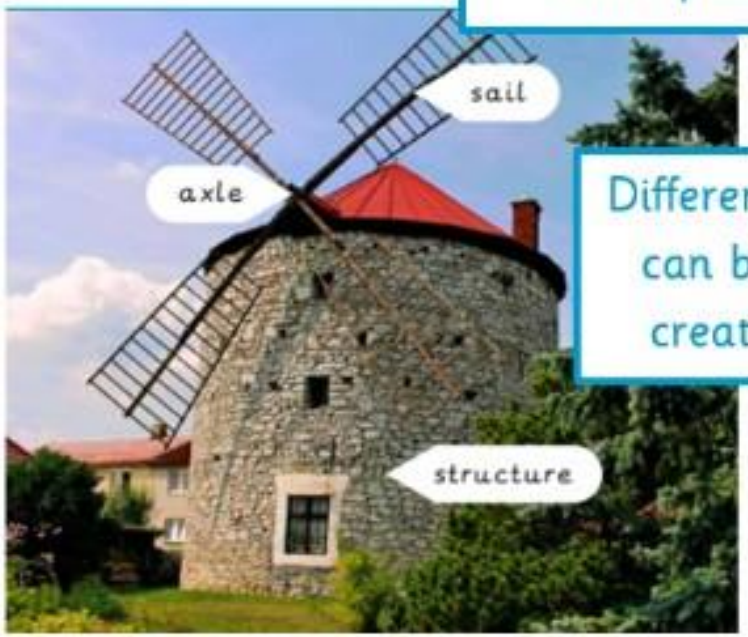
Structures are things that are built for a purpose.

Wider base = more stable

Narrow base = less stable



Windmill sails / blades move when pushed by wind.



Different parts of a structure can be joined together to create a working model.

Structures can be tested and improved to make them more stable and effective.

Design criteria
Should stand up on its own.
Should have a part to catch the wind and a standing structure.
Should move in the wind.
Could be decorated.