



Hallcroft Infant & Nursery School



Design & Technology Knowledge Organiser

Autumn 2 - Year 2

Structures- Baby Bear's Chair

What we already know, remember and can do: (Stable Structures)

- 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.

	Learning Objective	What will be known and remembered (Substantive)	What will be... (Disciplinary)	Revisited Vocabulary	New Vocabulary
1	Exploring Stability Learning Objective <i>I can explore the concept and features of structures and the stability of different shapes.</i>	✓ I know that shapes and structures with wide, flat bases or legs are the most stable.	✓ I can identify natural and man-made structures. ✓ I can understand what is meant by stability and identify when a structure is more or less stable than another. ✓ I can explain that shapes and structures with wide, flat bases or legs are the most stable.	3D shapes (pyramid, sphere, cuboid, cylinder)	design criteria man-made natural properties stable structure

2	Strengthening Materials Learning Objective I can understand that the shape of the structure affects its strength.	<ul style="list-style-type: none"> ✓ To know that a structure is something which has been formed or made from parts. ✓ To understand that the shape of a structure affects its strength. ✓ To know that materials can be manipulated to improve strength and stiffness. 	<ul style="list-style-type: none"> ✓ I can understand the meaning of the words strength, stiffness and stability. ✓ I can understand there are different ways to fold paper to improve its strength and stiffness. ✓ I can build a strong and stiff structure by folding paper. ✓ I can test the strength of my structure. 	Fold shape	stable stiff strong test weak
3	Making Baby Bear's Chair Learning Objective I can make a structure according to design criteria.	<ul style="list-style-type: none"> ✓ To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. ✓ To know that a 'strong' structure is one which does not break easily. ✓ To know that a 'stiff' structure or material is one which does not bend easily. 	<ul style="list-style-type: none"> ✓ I can remember that chairs are structures that need to be strong, stiff and stable. ✓ I can create joints and structures from paper, card and tape. 		design criteria model stable stiff strong structure
4	Fixing and testing Baby Bear's Chair Learning Objective I can produce a finished structure and evaluate its strength, stiffness and stability.	<ul style="list-style-type: none"> ✓ To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. ✓ To know that a 'strong' structure is one which does not break easily. ✓ To know that a 'stiff' structure or material is one which does not bend easily. 	<ul style="list-style-type: none"> ✓ I can identify that the chair I design needs to be strong, stiff, stable and support Teddy. ✓ I can create joints and structures. ✓ I can evaluate my structure according to the design criteria. 		design criteria model stable stiff structure test
Future Learning: KS2 Curriculum Pupils who are secure will be able to: Identify man-made and natural structures. Identify stable and unstable structural shapes. Contribute to discussions. Identify features that make a chair stable. Work independently to make a stable structure, following a demonstration. Explain how their ideas would be suitable for Baby Bear. Produce a model that supports a teddy, using the appropriate materials and construction techniques. Explain how they made their model strong, stiff and stable.					

Structures - Baby bear's chair

Function	How something works.
Man-made	Made by people.
Mould	To form different shapes out of soft, squishy materials.
Natural	Found in nature e.g. spider's web, sheep's wool.
Stable	Object does not easily topple over.
Stiff	A material or object that does not bend easily (e.g. wood).
Strong	Something that is not easily broken (e.g. wood, brick, building).
Structure	Something that has been made and put together and can usually stand on its own (e.g. a building, a bridge, a chair).
Test	To find out whether something works as it should.
Weak	Something that is easily broken (e.g. paper, egg shells).

Natural Objects



Man-made Objects



Key facts

Often **structures** have a certain **function**, they are made to do something. e.g. Chairs are for sitting on.



They should be **stable**, **strong** and comfortable.
Was baby bear's chair **stable** and **strong**?



