Medium Term Plan **Subject D&T** **Year Group: Year 2** **Term: Autumn**

Topic: Structure: Baby bear's chair

National Curriculum Objectives which are covered in this unit:

Design

Pupils should be taught to:

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Make

Pupils should be taught to:

- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

Evaluate

Pupils should be taught to:

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.

Technical knowledge

Pupils should be taught to:

- Build structures, exploring how they can be made stronger, stiffer and more stable.

Lesson sequence - include the key concept, L.O. and brief description of lesson

WALT: explore the concept and features of structures and the stability of different shapes. Testing the stability of 3D shapes using a scientific approach. **Success criteria** • 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. • **Assessing progress and understanding** **Pupils with secure understanding indicated by:** identifying man-made/natural structures; identifying stable and	**WALT: understand that the shape of the structure affects its strength.** Building and testing different paper structures to destruction. **Success criteria** • 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. **Assessing progress and understanding** **Pupils with secure understanding indicated by:** understanding the meaning of the words strength, stiffness and stability;	**WALT: make a structure according to design criteria.** Designing a chair for Baby Bear by apply a knowledge of how to build strong and stable structures. **Success criteria** • 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. **Assessing progress and understanding** **Pupils with secure understanding indicated by:** working independently to use the materials as demonstrated to	**WALT: produce a finished structure and evaluate its strength, stiffness and stability.** Solving problems to adapt the structure of Baby Bear's chair as necessary. **Success criteria** • 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. **Assessing progress and understanding** **Pupils with secure understanding indicated by:** producing a model that supports the teddy using the

unstable structural shapes; identifying features that make a chair stable. **Pupils working at greater depth indicated by:** exploring a wider range of structural shapes and interpreting the results of the tip-test; making more detailed observations during the main activity; drawing accurate conclusions independently.	identifying why the different structures collapsed; building and testing strong and stiff cylinders. **Pupils working at greater depth indicated by:** suggesting ways structures could be made stronger and more stable; understanding how size, shape and materials used affect the stability of a structure.	make a stable structure; explaining how their ideas would suit Baby Bear. **Pupils working at greater depth indicated by:** producing a more demanding design and working with a broader range of materials and construction methods; using more complicated joining techniques and having neat results; identifying how their chair could be made even better.	appropriate materials and construction techniques; explaining how they made it strong, stiff and stable. **Pupils working at greater depth indicated by:** producing a model with an ambitious design that supports the teddy using various materials and construction techniques; explaining how they could improve their model.
Prior learning *List year groups and topics with connected learning*	Reception – Junk modelling Year 1 – construct a windmill		
Future learning *List year groups and topics with connected learning*	Year 3 Structure: Construct a Castle Year 4 Mechanical systems: making a slingshot Year 5 Structures: Bridges Year 6 Mechanical systems: Automata toys		
Key vocabulary to be explicitly taught	design criteria man-made natural stable shape model properties structure test		
Cross-curricular links	Mathematics Measurement Pupils should be taught to: • Compare and order lengths. Geometry – properties of shapes Pupils should be taught to: • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. • Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. • Compare and sort common 2-D and 3-D shapes and everyday objects.		
Enrichment			

Give visit/visitor/first hand experience and focus	
Useful websites/resources	**KS1 DT Knowledge Organiser | Structures**