Design and Technology Learning Journey Autumn 1: Freestanding structures	Year 1 Autumn 1	

Theme Overview	Project Outcomes
In this Design and Technology unit, the children will be learning what a freestanding structure is and how to make structures strong and stable.	Children will have designed and made their own freestanding structures and understood how to make them more stable.

Skills Focus	Sequence of Learning		
In this unit, children will learn to: • Work within a range of contexts • Use simple design criteria to help develop their ideas • Generate ideas by drawing on their own experiences. • Learn a range of methods of joining materials. **The intent behind teaching Design and Technology skills at Mrs Bland's Infant School.** • To inspire a passion for creating 'something for someone for some purpose'. • To develop high quality products through combining designing and making skills with knowledge and understanding.	**Lesson 1: What is a structure?** **LI: to develop an understanding about different types of structure** Introduce with a picture quiz and talk task (bridges, buildings). Give the definition of a structure and explain the key vocabulary – combination, materials, 3D shape. Talk task – look around the room and outdoor area, what freestanding structures can you see?	**Lesson 2: Designing a freestanding structure** **LI: to learn about frame structures** Recap on previous learning with quiz. Introduce frame structures and key vocbulary – component, frame, cylinder. Look at playground structures on slide. Go on a walk to the playground, what are they made of, how are they joined together, what shapes can they see?	**Lesson 3: Exploring joining techniques** **LI: To investigate and test joining techniques** Recap on previous learning with quiz. Look at towers of different heights and explore the key vocabulary using the Duplo towers – base, buttress, centre of gravity. Main teaching - Read 'Jack and the Beanstalk'. Today's challenge is to make a stable beanstalk for Jack using tubes. How can we join them together, using our knowledge of bases, buttresses and centre of gravity? Model making a beanstalk. Activity – Make the tallest beanstalk possible that will remain standing by itself – a freestanding structure.

• To develop a sense of enjoyment and pride in their ability to make and to nurture their creativity and innovation. • To develop a sense of agency, of being able to change and modify their environment. **Key vocabulary** Cut, fold, join, fix, structure, wall, tower, weak, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cube, cylinder, design, make, evaluate, purpose, ideas, stable, strong, strong, stable, replicate, base, buttress, componenet	Main teaching – exploring walls. Introduce with some famous walls and talk about how a wall is a structure, how walls are made to stop them falling over. Activity – using construction toys make a wall for Humpty Dumpty that is stable enough he won't fall off.	Main teaching – introduce joining techniques for art straws. Model designing and making a playground swing Activity – design and make a piece of playground equipment (like the swing model or a design of their own).	
	Lesson 4: Make a chair for Baby Bear **LI: to explore existing products and design a product for a purpose** Recap on previous learning and introduce key vocabulary – replicate, user, function. Main teaching – Read 'Goldilocks and the three bears'. Explain we are going to design and make a new chair for baby bear. Look at different chairs and explore their features, purpose and design. Children design and label different chairs. Identify which chair might suit Baby bear best and why. Using paper, card, tape – make a chair for Baby bear, then test whether he can sit on it without breaking it.	**Lesson 5: Technical vocabulary and evaluation** **LI:** Recap on all the freestanding structures we have explored in this unit. Look at the technical terms – freestanding structure, join, base, buttress, centre of gravity, replicate – can the children explain them. Activity – go back through the different models made and label them with appropriate technical vocabulary.	