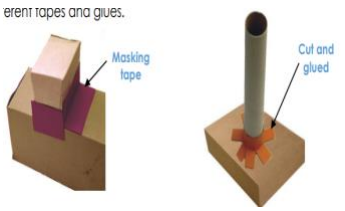
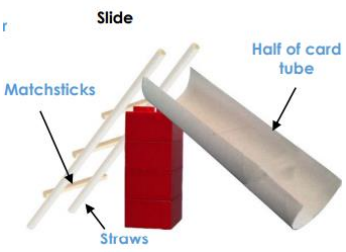
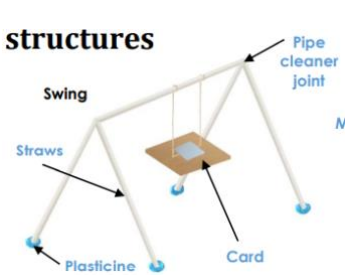
Design Technology

Structures Year 2

National curriculum	Vocabulary
Design To design purposeful, functional, appealing products for themselves and other users based on design criteria. To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. **Make** To select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] . To select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** To evaluate their ideas and products against design criteria To explore and evaluate a range of existing products **Technical Knowledge** To build structures, exploring how they can be made stronger, stiffer and more stable. To explore and use mechanisms (for example, levers, sliders, wheels and axles), in their product	backwards, cut, direction, evaluate, forward, handle, lever, movement, pivot, pull, push, slider

Investigate Technical knowledge	Design	Make	Evaluate
Year 2 – DT Skills			
-Use knowledge of existing products to help come up with ideas -The correct technical vocabulary for the projects they are undertaking	-Develop their design ideas through discussion, observation, drawing and modelling -Design a simple design criteria for product.	-Begin to select tools and materials; use vocab' to name and describe them -Measure, cut and score with some accuracy -Use hand tools safely and appropriately -Assemble, join and combine materials in order to make a product	-Evaluate their products as they are developed, identifying strengths and possible changes they might make. - Evaluate against their design criteria. -Talk about their ideas, saying what they like and dislike about them.
			

Learning Objective	Lesson outline
Lesson 1: Investigate / skills practice **LO:** To explore existing structures and joining techniques. **DT Skills:** Use knowledge of existing products to help come up with ideas -To select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] . -The correct technical vocabulary for the projects they are undertaking (i.e. structure)	Explore existing products using school trim trails and images of park play areas. Look through catalogues of playground equipment. Come up with ideas of potential structures they could include in their own playground. Following teacher modelling, investigate and make different structures using a range of materials (e.g. art straws, card etc). Explore different ways of joining the materials to create desired structure/shape. Teach children how to use masking tape, the 'cut and glue' technique or pipe cleaners joins to join materials. WTS/ARE/GDS – Experiment with using the cut and glue technique or pipe cleaners to join materials.

Lesson 2: Investigate/ skills practice **LO:** To understand how to make structures stable. **DT Skills:** To build structures, exploring how they can be made stronger, stiffer and more stable. -To select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] . -The correct technical vocabulary for the projects they are undertaking i.e. structures, support)	As a class, explore different ways to make structures stronger, stiffer and more stable. Encourage the children to think about how folding materials can make them stronger, stiffer, stand up and be more stable. Use technical language (e.g. wall, tower, framework, base, joint, metal, wood, plastic, brick, triangle, square, rectangle, cuboid, cube). WTS/ARE/GDS - Children to use a range of materials and use different techniques to strengthen and make more stable. Children to discuss what is the most effective method to use and consider when some techniques would be more suitable than others.
Lesson 3: Design **LO:** To design a playground using various structures. **DT Skills:** Develop their design ideas through discussion, observation, drawing and modelling. - Design a simple design criteria for product. -Use knowledge of existing products to help come up with ideas	Design own playground structure using methods to improve stability of the structure and taught joining methods – This needs to be the children's design and ensure they understand the audience for the product. Decide on the criteria for the structure. Who are the intended users? What is the purpose of the product? What materials will you use? ARE/GDS – Design sheet – Design a playground and label. Include intended audience, purpose, design criteria and materials required. WTS – Support to complete design sheet. Design criteria provided.
Lesson 4: Make **LO**: To assemble, join and combine materials to make product. To evaluate and make changes to product design when making. **DT Skills:** Begin to select tools and materials; use vocab' to name and describe them. -Measure, cut and score with some accuracy. -Use hand tools safely and appropriately -Assemble, join and combine materials in order to make a product. **-**Evaluate their products as they are developed, identifying strengths and possible changes they might make.	Making a playground using knowledge of structures from previous lesson. Focus on joining materials effectively and making the structure strong, stiff and stable. Teacher modelling used to recap techniques and support where needed. WTS/ARE/GDS – Mixed ability groups. Photos to be taken of the children using different techniques to assemble, join and combine materials. Photos to be put on to twitter.
Lesson 5: Make **LO:** To add finishes touches to their product to make a quality product. **DT Skills:** -Begin to select tools and materials; use vocab' to name and describe them. -Measure, cut and score with some accuracy -Use hand tools safely and appropriately. -Assemble, join and combine materials in order to make a product Evaluate their products as they are developed, identifying strengths and possible changes they might make.	Mid-project evaluation – what have they achieved so far? What is going well? What has been difficult? How could they improve the strength, stiffness and stability of their structures? What might you change? ARE/GDS - Continue making structures. Focusing on finishing off and making the structures appealing (strengthening and embellishing). WTS – Support where needed. GDS – Explain how they have strengthened their structure and the techniques they selected to use.

Lesson 6: Evaluate **LO:** To evaluate their finished product based on design criteria. **DT Skills:** Evaluate their products as they are developed, identifying strengths and possible changes they might make. - Evaluate against their design criteria. -Talk about their ideas, saying what they like and dislike about them.	Recap the product criteria agreed previously and evaluate final products using criteria. Children to evaluate what went well and how the product could be improved. ARE/GDS – Evaluation sheet used to evaluate final product against design criteria. What went well? How strong/stable is it? What did you find difficult? What would you change about your final product? WTS – Star rating to evaluate structures against given design criteria. Provide a score out of 10.

	End of unit assessment	
Working towards	Working at Age related expectations	Working at a greater depth