BILSTON CHURCH OF ENGLAND PRIMARY

MEDIUM TERM PLANNING

Subject	Topic/Key Question	Year Group	Term	Time Allocation
Design and Technology	Stable Structures	1	Summer 1	6 hours
End of Key Stage 1 objectives	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 Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Explore and evaluate a range of existing products			
End of unit objectives	Stable Structures			
	I can identify the features of toy garages. • I know what the word 'stable' means. • I can make changes to the design of a stable structure to make it fit for purpose. • I can explore a range of materials and evaluate the usefulness of their properties for a particular project. • I can explore how to make stable structures that hold a given object. • I can follow a design to make a stable structure.			

	• I know some ways to make a structure more stable. • I can evaluate my finished structure against a set of given criteria.	
Vocabulary	Design	Design, product, simple plans, making/make.
	Make	Ideas, make, product, chose, resources, tools, explain, structure, model, strong, construct.
	Evaluate	Describe, explain, working well not working well
	Technical Textiles Mechanisms Materials	Make, model, stronger, glue, ct, materials, scissors.

This topic could be blocked over 2 week due to the cost of purchasing fresh fruit and vegetables weekly. – Lessons 1 to 4 in first week and then lessons 5, in week 2

Lesson Sequence	Time Allocation	Key Question/WALT	Teaching Activities	Resources
Technical knowledge Lesson 1	1 hours	To explore the features of stable structures, including toy car garages.	Show the children the image of the car garage on the slide. What is it? What do you notice about it? • Explain to the children they are going to design their own structures like this toy car garage. Tell them today they are going to look at a range of existing products to help them form their own design ideas. • Show the children the pictures of various types of toy car garages on the slides. What do they notice about them? What do they think they are made from? What works well? What could be improved? • Create a list with the children of the materials used and the features of each toy car garage. Activity Provide the children with a range of toy car garages and Question Cards IB. Challenge the children to explore the features of the garages	Plan Bee Lesson 1 Slides Resources Question Cards IA/IB/IC Worksheet IA A range of car garages Picture Cards IA/IB/IC/ID (FSD? activity only) Checklist IA/IB (FSD? activity only)

			and their purposes. Ask them to think about the features they would like their own toy car garages to have and record them on worksheet 1A. Assessment Questions Can children evaluate existing products? • Can children communicate their ideas through talking? • Can children compare existing products?	
Design Lesson 2	1 hour	To design and plan a stable structure.	Ask the children: What does stable mean? Go through the explanation on the slide. • Show the children a picture of a toy car garage on the slide. What do they think each section of the garage is used for? Why is there a ramp? How many levels are there? Is there somewhere for cars to park? Where? • Show the children the plan on the slide. What does it show? What do they notice about it? How much detail does it contain? • Share the information on the slide explaining what a plan is. • Show the children the plan and the photo. Do they look the same? Does the plan look like a photo? Why? • Show the children the adapted designs on the slide. How has the design been changed? Why? • Explain to the children they will be designing their own structures using the displayed design as a basis for their own design. Activity Provide the children with worksheet 2B. Challenge the children to add details to the plan to make it suitable for their chosen purpose. Design Ideas 2A are provided to support the children if necessary. Assessment Questions Can children design a functional product?	Plan Bee lesson 2 Slides Resources Worksheet 2A/2B/2C Design Ideas 2A Criteria Sheet 2A (FSD? activity only) Plans 2A (FSD? activity only) Paper mock-up of design (Plenary only)

			• Can children communicate their ideas through talking and drawing? • Can children think about the purpose of the end product?	
Make Lesson 3	1 hour	To explore a range of materials and make decisions based on the end product.	Show children the images of materials on the slide. If possible, have real examples of the materials available. Can children name the materials? • Show children some examples of plastic. What is this material? What are its features? What does it feel like? • Repeat this with wood. If possible provide the children with examples of natural, treated and painted wood. Encourage them to think about the properties of the wood and how easy it would be to make a structure from it. • Explain to the children they are going to make their own structures using cardboard, wood and paper and maybe a few other materials. • Challenge the children to investigate these materials and decide which one they think will be the best material to make each part of their structure with. Activity Provide the children with worksheet 3B and the listed materials. Children will record the properties by ticking 1 of 3 boxes Questions for assessment Can children investigate the properties and characteristics of materials? • Can children explore how materials can be made stronger and stiffer? • Can children select appropriate materials based on the purpose of their product?	Plan Bee lesson 3 Slides Resources Worksheet 3A/3B/3C Materials: paper, cardboard, fabric, wood, stone, plastic Worksheet 3D (FSD? activity only) Teacher Notes 3A (FSD? activity only) Workstation Cards 3A (FSD? activity only)
Make Lesson 4	1 hours	To follow a design plan and make a product.	Show children the plan on the slide. What is this? What is it for? • Remind the children that design plans are instructions to follow when making a product.	Plan Bee Lesson 4 Slides

			• Show the children the materials on the slide. Which material did we decide to make our product from? • Remind the children the product that best met their need was cardboard. Go through the reasons on the slide that cardboard has been selected. • Tell the children that today they are going to make their designs. Remind them to refer to the design plans and the step-by-step plan. Activity Provide the children with their design plans from lesson 2. Children will make their designs using cardboard. You may wish to pre-cut the cardboard for them or encourage them to do it themselves. Questions for assessment Can children follow a design plan? • Can children manipulate materials? • Can children use tools accurately?	Resources Plans from lesson 2 Instruction Cards 4A Cardboard, scissors, glue, tape Design Plan 4A (FSD? activity only)
Evaluate Lesson 5	1 hour	To evaluate products	Ask children: What have we been making? What are they designed to do? How will we know if our product is successful? • Write a list of things a stable structure, like a toy car garage, should be able to do. Then add any ideas from the list on the slide. How will we know if our structure meets these requirements? • Explain to the children that today they will test their products to see if they function as toy stable structures and then they will evaluate them Activity Provide the children with Checklist 5B and their finished product. Children will test then evaluate their product? Questions for assessment	Plan Bee lesson 5 Slides Resources Checklist 5A/5B/5C Finished products from lesson 4 Statement Cards 5A (FSD? activity only)

			Can children make purposeful, functional products? • Can children evaluate their products? • Can children use technical language when talking about their product?	