

Design and Technology

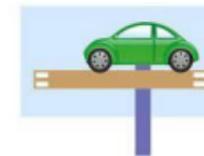
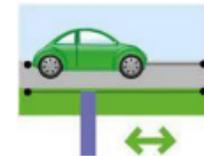
Medium Term Plan



Y1 – Structures and Mechanisms	
Class Text	Iggy Peck the Architect – a place to call home, homes around the world
Hook	Little People, Big Dreams (Zaha Hadid)
Topic Outcome	Children will build the Wise Man’s house (link to RE).
Topic Reflection	Use the Seesaw app to evaluate learning.
Key Enquiry Questions	What makes a building strong? Why do we need buildings? Why are buildings special? Who can be an engineer?

Year Group	Learning
EYFS + KS1	Structures Systems and Mechanisms Textiles Food Technology
KS2	Structures Systems and Mechanisms Textiles Food Technology

Tier	Vocabulary
Tier 1	triangle, rectangle, circle, pentagon, square, oval, hexagon, glue, strong, stiff
Tier 2	2D shapes, join, masking tape, duct tape, materials, evaluate, local, London, female
Tier 3	structure, engineer, mechanism



Previous Skills	Previous Knowledge	Previous Understanding
Children can cut shapes with scissors and shape punches. Children can fasten items together using glue, tape and split pins. Children can make moving parts with split pins.	Children know that some changes can't be undone – cutting, slicing, tearing.	Children understand that they are designers, makers and engineers, and that other people's designs should be valued.

Lesson	Concept	Learning Objective	Lesson Outcome	ARE Success Criteria
Lesson 1	Structures	LO: Name 2D shapes.Children will look at famous engineers. They will focus on Zaha Hadid. Look at the Olympic Stadium of 2012.	Children will go on a hunt around the playground and use the iPads to take pictures of shapes in the environment. Children will focus on 2D shapes and extend to 3D shapes where appropriate.	I can name common 2D shapes.I can find 2D shapes in the environment.I can take photos of 2D shapes in the environment.I can name a famous female engineer.
Lesson 2	Structures	LO: Know some strong and stiff structures.	Children will have pictures of structures cut into pieces. They must work as a team to create the image. Children will look at the properties of the structures and identify any shapes they can see. Children will look at a range of buildings from Zaha Hadid.	I can work in a team.I can identify shapes in modern structures.I can name some famous structures by Zaha Hadid.I can find strong structures in the school locality.
Lesson 3	Structures Technical Knowledge Test Evaluate	LO: Join materials using different methods.	Children will experiment and investigate joining different materials together using glue, masking tape, duct tape and masking tape, and test which one is strongest. They will record their learning in a table.	I can join materials in a range of ways.I can record my learning.I can explain which joining method was the most effective.
Lesson 4	Structures	LO: Build a structure using prior knowledge.	Children will build their own structure to house the Wise Man. They will use their prior knowledge to use shapes and joins to create their structures. Children will test the strength and sturdiness of their structure by putting books on top. Children will evaluate their structure against the design specification.	I can create a structure using the given materials. I can use my knowledge of shapes to build a structure. I can use my knowledge of joins to create a structure.

Lesson	Concept	Learning Objective	Lesson Outcome	ARE Success Criteria
Lesson 5	Mechanisms	LO: Evaluate different moving picture mechanisms.	Children will investigate different mechanisms for moving pictures. They will examine sliders, flap books and pop-up books.	—
Lesson 6	Mechanisms	LO: Test a mechanism device.	Children will investigate sliding mechanisms. They will evaluate which mechanism is the easiest to create and the most effective. Children will create a class design specification: The design must have a moving mechanism. The design will appeal to... The design will have ... colours	Children will create a class design specification. The design must have a moving mechanism. The design will appeal to... The design will have... colours.
Lesson 7	Mechanisms	LO: Design a moving picture mechanism	Children will design a moving picture using the class design specification.	
Lesson 8	Mechanisms	LO: Make and evaluate a moving picture	Children will create their designs and evaluate it against the class design specification.	

Knowledge:	Skills:	Understanding:
Know a famous female engineer. Know the names of 2D shapes. Know the name of some strong and stiff structures. Know there are different ways to join materials.	Know how to join materials using different methods. Identify 2D shapes in the local environment and in structures. Explore how to make a structure stronger using a range of materials. Make sliding mechanisms	Understand how to make a structure stronger and stiffer. Understand anyone can be an engineer if they work hard (ABC curriculum ASPIRE) Understand some structures are stronger than others.