



Key facts to learn:

- Topic – Beside the Seaside
 - What is a **structure**? To be able to make a windmill
 - To learn the importance of a clear design criteria of a windmill
 - What a windmill is and how it works
 - Look at windmills in the area such as Brill Hill Windmill- purpose of them
 - How to include individual preferences and requirements in a design

Key skills to do:

- Make stable structures from card, tape and glue
- Follow instructions to cut and assemble the supporting structure of a windmill
- Make functioning turbines and axles which are assembled into a main supporting structure
- Evaluate a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't
- Learn how to turn 2D nets into 3D structures
- Learn that the shape of materials can be changed to improve the strength and stiffness of structures
- Understand that cylinders are a strong type of structure that are often used for windmills and lighthouses
- Understand that windmill turbines use wind to turn and make the machines inside work
- Understand that axles are used in structures and mechanisms to make parts turn in a circle

Words to know and spell (Tier 2 Vocabulary)

Design	Windmill	Tape
Glue	Card	Strong
2D shapes	3D shapes	Stiffness



Year 1 Tigers – Structures

Words to understand and spell (Tier 3 Vocabulary)

Structure	An object made up of several parts
Criteria	A standard by which something is judged
Supporting	Bearing part of a weight of something
Turbines	Wheel or rotor with vanes is made to revolve by air
Axles	A rod passing through the centre of a wheel
Stable	An object that is not likely to give way (firm)
Altering	Make structural changes to a building
Cylinders	A solid figure with straight parallel sides and a circular or oval cross section
Machines	An apparatus using mechanical power and having several parts
Mechanisms	A systems of parts working together

Concept check questions. Test yourself:

How can you make your structure stable?

What does a turbine do?

Can you describe the job of the axle?

How can you use a 2D shape net to make a 3D shape?

What is the job of a windmill?

What is used in structures and mechanisms to make sure parts turn in a circle?