Knowledge Organiser – Brilliant Bridges

Years 1 & 2

What Are Bridges?



• Bridges help people, animals and vehicles cross over something (like water, roads, or valleys).
• They must be **strong**, **stable**, and **safe**.
• Engineers design bridges using different **materials** and **structures**.

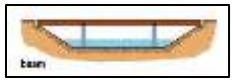
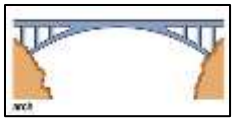
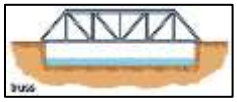
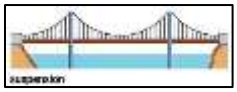
Types of Bridges

• **Beam Bridge:** A simple, straight bridge that lies across two ends. Strongest when supported underneath.

Arch Bridge: Curved shape spreads weight so it can hold more.

Truss Bridge: Made from triangle shapes that give extra strength.

Suspension Bridge: Held up by strong cables. Good for long distances.

Then & Now – Impact

• Early bridges were made from wood and rope.
• Today, engineers use steel, concrete and strong cables so bridges can be bigger, safer and stronger.
• Without bridges, towns and cities would be hard to reach, journeys would take much longer, and some places might be completely cut off.

How Bridges Stay Strong

• Using **triangles** gives strength and stops wobbling.
• Wider **bases** make bridges more stable.
• Choosing the right **materials** keeps bridges safe in all weather.
• Testing designs helps engineers improve them.

Learning Muscles Link

Strength (structures), **Curiosity** (investigating materials), **Reflection** (testing and improving), **Cooperation** (team building).

Key Vocabulary To Explore At Home

Surface Knowledge: bridge, arch, shape, material, design, join, measure, test, improve, fair, present

Deeper Knowledge: strength, flexible, rigid, structure, purpose, stability, construct, accuracy, weight, evaluate, reflect

Adventurer Knowledge: support, stable, durability, suitability, annotate, refine, adapt, load, reinforcement, design process, engineer, collaborate

Home/School Links

• Look for different types of bridges in your **local area** – what shapes can you see?
• When walking over a bridge, ask: **What is it made from? Why?**
• Build a simple bridge at home using LEGO, cardboard, or blocks – test how much weight it can hold safely.
• Talk about people who design bridges — **engineers**, **architects**, and **builders**.
• Visit a library and look for books about structures or famous bridges.
• Watch child-friendly engineering videos (e.g., “How do bridges work?”).

Useful Websites

- **BBC Bitesize – Structures & Materials (KS1 DT)**
  Clear videos explaining strong shapes, simple structures and how materials behave.

- **Why are bridges so strong?**
  Child-friendly video.

- **Strong Structures with Triangles | Design Squad**

  Child-friendly video.

- **Ironbridge Gorge Museum Trust**
  Photos and simple history of the first major iron bridge — perfect for locality and Victorian links.