

River Bank Primary Knowledge Organiser	Year Six	Autumn Term	Design Technology – Structures (Bridges)
Key Vocabulary		Important Facts	
<ul style="list-style-type: none"> • Beam Bridge: Load-bearing consists of a beam • Truss Bridge: Load-bearing consisting of a series of triangles • Arch Bridge: Load bearing consisting of an arch underneath • Suspension Bridge: Loadbearing supported by wires to share weight • Deck: The load bearing part of the bridge • Dead Load: The amount of weight from the bridge itself being held • Live Load: The additional weight that changes from what is on the bridge (cars, lorries etc) • Abutments: a structure built to support the pressure of an arch or span, e.g. at the ends of a bridge. • Hinge: a bridge which has collapsed into a folded orientation • Tension: A force which always tries to make things longer • Compression: A force which always tries to make things shorter. 		<ul style="list-style-type: none"> • To understand that there are different types of bridges <ul style="list-style-type: none"> σ Beam Bridge (load-bearing consists of a beam) σ Truss Bridge (load-bearing consisting of a series of triangles) σ Arch Bridge (load bearing consisting of an arch underneath) σ Suspension Bridge (Loadbearing supported by wires to share weight) • To understand that if too much weight is put onto the load-bearing part of the bridge (deck) – the bridge will collapse. • To understand that additional weight from people, cars, lorries etc is called the live load and changes all the time. • To understand that corrugation can be ether transversal (parallel to the abutments) or Longitudinal (perpendicular to the abutments) • To understand that an arch and beam combined can strengthen a bridge. • To understand that when the live load is too great, a bridge can 'fold' in and collapse and this is called a hinge • To understand that the 'Bailey Bridge' was a type of portable truss bridge designed in 1940-1941 to help large and heavy machinery avoid and overcome obstacles • To understand that a Truss bridge uses triangles to strengthen it • To understand that a triangle is the strongest shape as the downward forces push towards the ground and the base force pushes towards the corners. 	

- To understand that **Beam bridge** is good over short distances, but is weaker over longer distances.
- To understand that by using **truss** to change a beam bridge to a **truss bridge**, we strengthen the bridge and allow it to cover longer distances.



Beam Bridge



Truss Bridge



Arch Bridge



Suspension Bridge



Abutments



Collapsed Bridge 'Hinge'

