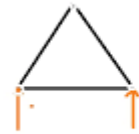




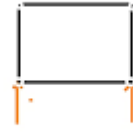
Crofton Junior School – DT Knowledge Organiser – Rosie Revere Engineer – Year 4 Autumn Term



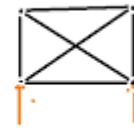
Unit of Work	DT – Rose Revere Engineer – Construction
Text Driver the Unit of Work Links to	Rose Revere Engineer A Christmas Carol
Key Strand	Master Practical Skills – Construction Take Inspiration From Design Throughout History
Overview of the Unit of Work	Pupils will learn about frame structures and how different structures are more rigid and stronger than others. They will choose suitable techniques to create a bridge strong enough to hold an object. Pupils will also learn how to strengthen materials using appropriate techniques. They will also design with this specific outcome in mind, make prototypes with continual refinements and ensure final products have a high quality finish. Pupils will look at the work of Isambard Kingdom Brunel and Gustave Eiffel.
Prior Learning & Vocabulary	During the Summer Term of Year 3, pupils will have taken inspiration from design throughout history whilst making Stone Age sandals. Vocabulary: design, make, evaluate, technical, purposeful, appealing, criteria, generate, develop, model, communicate, ideas, templates, tools, practical, materials, components, construction
Sticky Knowledge	Pupils will learn: <ul style="list-style-type: none">• That Isambard Kingdom Brunel was an English civil engineer who is considered one of the most ingenious and prolific figures in engineering history, one of the greatest figures of the Industrial Revolution and who changed the face of the English landscape with his ground-breaking designs and ingenious constructions.• Brunel's more famous design, the Clifton Suspension Bridge, was built in Bristol in 1831 and showed an innovative design for the time period. At the time, it had the longest span of any bridge in the world measuring 249 ft. high and spanning 702 ft.• That Alexandre Gustave Eiffel was a French civil engineer. He made his name with various bridges for the French railway network, most famously the Garabit viaduct. He is best known for the design of the world-famous Eiffel Tower.• That a structure is strong if it is rigid. Some shapes are more rigid than others. Triangles are the most rigid shapes for frames and they are used in almost all structures that need strength, such as the trusses which form a roof or the structure of some bridges.• That truss bridges have interconnecting triangular structures, which give them strength and distribute weight evenly along the length of a bridge.• To choose suitable techniques to construct a bridge and repair any breakages as well as how to strengthen materials.• To identify some of the great designers throughout history and improve upon existing designs.



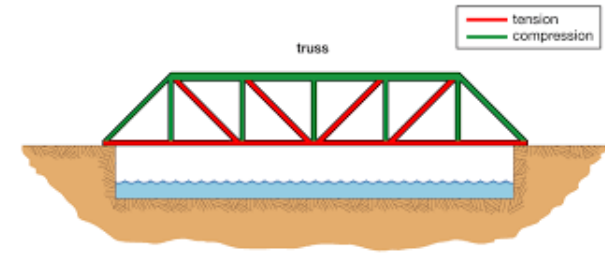
PERFECT FRAME



DEFICIENT FRAME



REDUNDANT FRAME



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New Vocabulary

rigid – an object that is stiff and does not bend or change shape
 truss – a structure made of triangles
 distribute – to share out
 strut – something that strengthens a structure
 joining plate – something attached to a joint to strengthen it
 structure – a building or other object constructed from several parts
 interconnecting – to connect with each other
 refinements -to make minor changes so as to improve something

Post Learning

During the Summer Term of year 5 and the Autumn Term of year 6, pupils will look at construction again.