

Year 6 – Lesson Plan 1 – D.T.

Can You Build a Bridge That Holds Its Own Weight?

Aim: To design and build a strong bridge structure using everyday materials and apply knowledge of forces and stability.	Key Words: • structure • strength • stability • tension • compression	Preparation: • Straws, card, string, masking tape, paper, lollipop sticks, paperclips • Weights (small books, toy cars, or weights for testing) • Rulers and pencils • Images of different bridge types (beam, arch, truss, suspension) • Optional: measuring scales
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Prior Learning: Children will have explored forces and materials in science and designed simple structures in earlier D.T. work.

WC / PT	Warm-up: Show images of real bridges. Ask: <i>What makes a bridge strong? Which shapes or materials do engineers use?</i> Discuss forces like tension and compression.	0-5 mins
WC	Main Teach: Demonstrate basic construction ideas using triangles and trusses for strength. Discuss how to test a bridge fairly and predict what might happen when weight is added.	5-10 mins
I / S	Activity: Children work in teams or independently to design and build a bridge that spans a set gap (e.g. between two chairs or tables). Their aim is to make it as strong and stable as possible using the materials provided.	10-30 mins
I	Extension Challenge: Test how much weight the bridge can hold and record the results. Children modify or reinforce their bridge to hold more.	30-35 mins
WC	Plenary: Reflect on successes and failures. Ask: <i>What made your bridge strong? What would you change next time to make it stronger or lighter?</i>	35-40 mins

WC – Whole Class

PT – Partner Talk

I – Independent

S - Support

Challenge A	Write an explanation text about how your bridge design worked and the forces involved.
Challenge B	Research and present on a famous bridge (e.g. Tower Bridge, Golden Gate Bridge, Millau Viaduct).