

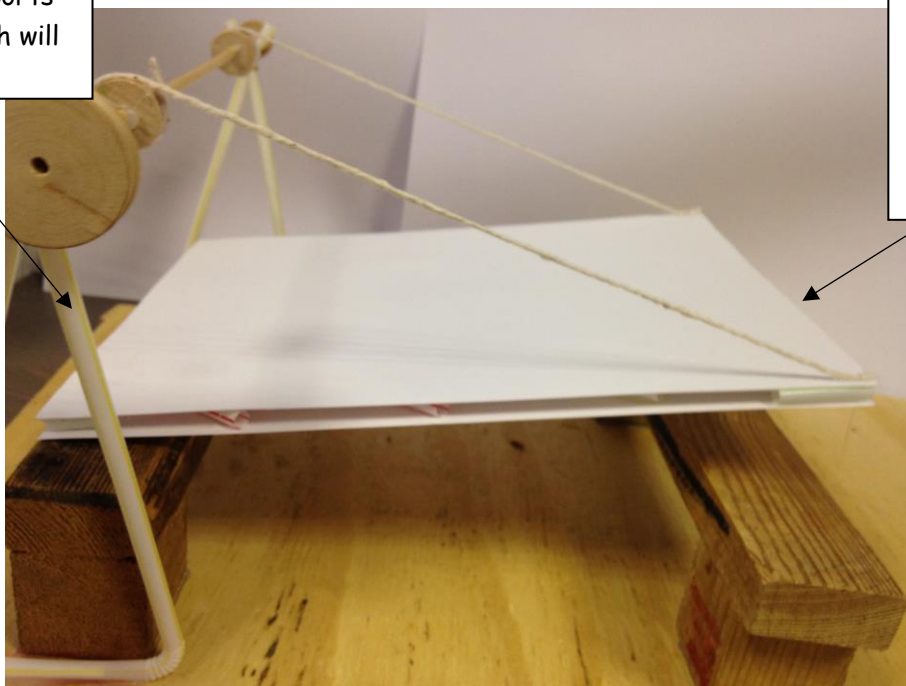
# KIKS Bridge Design Challenge

The aim of this workshop is to allow the students to design a bridge with a lifting mechanism from simple materials of card, wooden dowels and pulley wheels. The task requires the students to work out how they can make the road beam of the bridge strong. The kit they can work with will allow them to reinforce the pieces of card by producing the equivalent of corrugated card using the straws - see notes below.

There are a number of ways the lifting mechanism could be designed and the kit should have the materials shown in the images below. An example of a possible solution to the task is shown. This is the most basic mechanism and a more sophisticated model could include a motor. Key Features:

- Strengthened bridge (Stable)
- Stable support
- A Lifting mechanism

2 straws are used to create the end supports for the bridge which will hold the dowel rod.



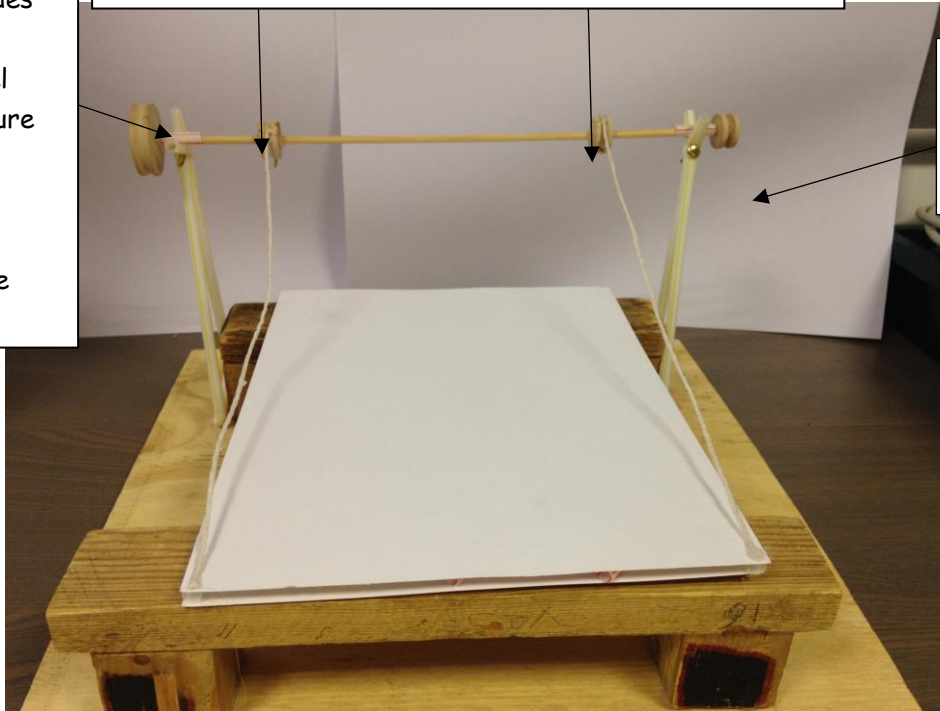
The system uses the dowel rod, pulley wheels and string to lift your reinforced paper bridge evenly and smoothly.

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This section of straw is secured on both sides using glue. This stabilises the dowel rod and hold it secure when the wheel is rotated to lift the bridge - a turning handle could also be made.

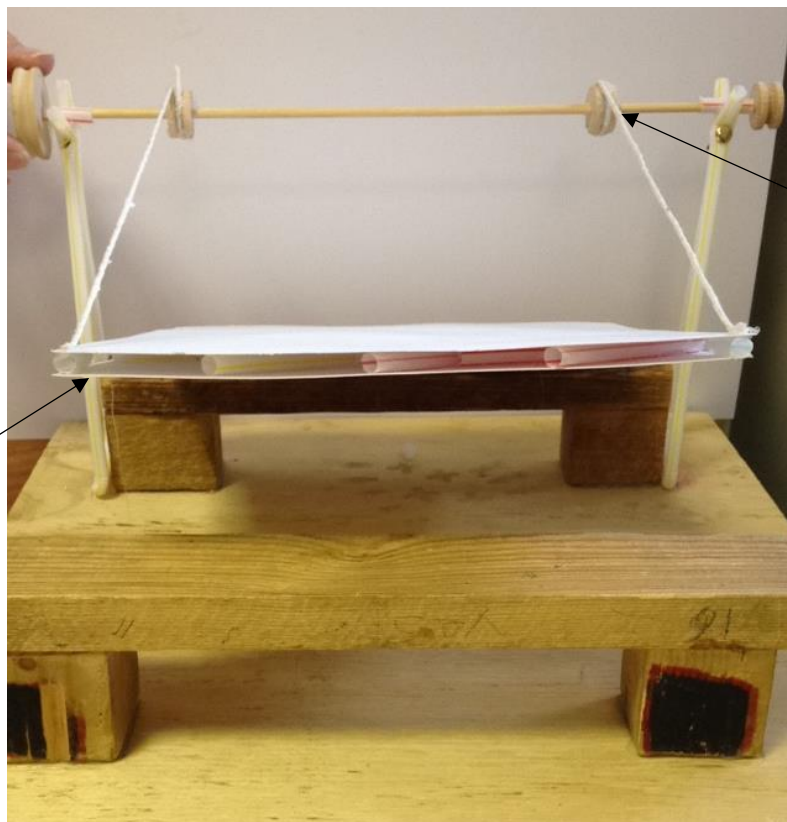
Both these pulley wheels are fed onto the dowel rod and secured using the glue gun. The string is also secured to these pulley wheels, this is then used to as a system to lift the paper bridge.

This pulley wheel is secured to the end of the dowel rod as a stop.



The paper is reinforced using straws to make it stronger. The straws are diagonal because if they were parallel to the end it would strengthen the bridge but it would bend in this axis.

The string wraps around the pulley wheels, lifting the bridge.



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