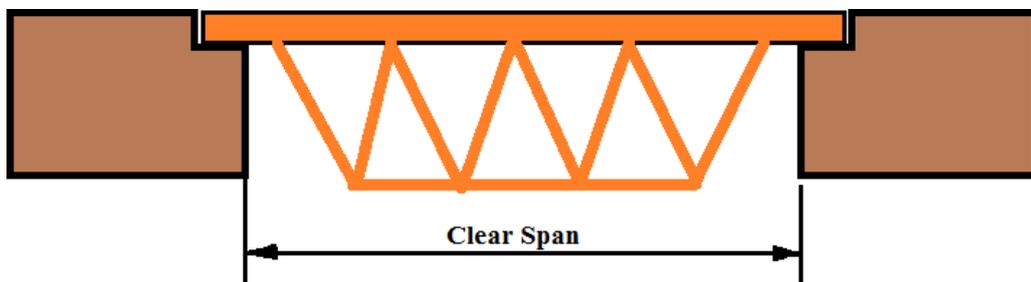


PBL Topic for Second Year Mechanical/Automobile Engineering:

Bridge Engineering Project

The project is expected to meet the following **specifications**:

- Clear span of 1 m and free standing with the ends of the bridge relying on simple supports only (no horizontal reaction).
- Bridge deck must be continuous and at least 80 mm in width (to accommodate a loaded toy truck/vehicle).
- The tops of the deck and the bridge supports at either end must be flush to allow a



smooth transition for the track.

- Any construction material or a mix of various materials can be used, but the total bridge mass must be limited to 300 grams. Typical materials include (but not limited to) wood of various types, plastic tube or sheet, cardboard, polystyrene or aluminium sheet etc. Joining methods of various types may be used.
- The bridge should be capable of carrying a worst case scenario load of 1.2 kg placed at its mid span without appreciable deformation.

PBL Topic for Third Year Mechanical/Automobile Engineering:

Mechanical Timer

The project is expected to meet the following **Objectives**:

Design and build a **Mechanical Timer (no electronic components at all)** which shall perform an action at start (time 0) and then performs another action after the demanded time (by the judge) has been programmed into the machine/timer. This time can be anywhere between 30.0 seconds to 90.0 seconds. Use may be made of different concepts studied in mechanical engineering subjects so as to realize the timer.

Windmill

The project is expected to meet the following **Objectives**:

Design and build a Windmill which shall be used to lift a known weight (maximum 100 grams) through some fixed height (50 mm) in minimum time; when the input is a constant flow of air powered by a table fan. The air passes through the windmill in a horizontal direction.