

Construction Team – Mongolian Bridge

Description of situation

The government of Outer Mongolia is concerned about the increasing frailty of numbers of bridges spanning treacherous gorges in the wilds of that area. These bridges have long been the lifeline for the villages and producers of these areas, but time is beginning to take its toll and the bridges are becoming unsafe at a frightening rate. Tourism is bringing increasing numbers of tourists and therefore revenue to the country and so the last thing the government wants is bridges collapsing!

The government is also hamstrung by a lack of funds to pay for the work, but local people have expressed their interest in building the bridges if the design and materials are provided. Bamboo has been chosen as it very plentiful and the idea is that locals can use a design to construct the bridges, if a well-written procedure is provided.

Your team of highly qualified construction specialists have won the tender to design and document procedures for the bridges. You have been provided with suitable parameters and have extrapolated them to provide a testing environment and you have selected uncooked spaghetti as the appropriate construction material for the model.

Task

In your syndicate/construction team, agree on a suitable design, test it and then document your procedure clearly and simply. The parameters for the model are as follows:

1. Model bridge must span 60 cm and have a depth of no more than 15 cm
2. Model bridge must have a flat surface suitable for a roadway, a single strand/pole bridges will not be appropriate. This surface does not need to be fully covered in this model, but the design must allow for it to be supported
3. Model must support a roll of masking tape for at least 2 minutes
4. Model must be constructed from uncooked spaghetti and sticky tape only
5. Procedure must be legibly and carefully written

Timings

Design, test and prepare procedures	25 minutes
Prepare procedures	5 minutes