

Time: 1hr 30mins



Level: Form I-IV

How it Works

Students must build a *bridge* that can support the most weight, while using a limited budget of *Science Shillings* to purchase construction materials.

What You Need (per team)

- | | | |
|--|---|---|
| <input type="checkbox"/> Straws - 20 | <input type="checkbox"/> String - 3 m | <input type="checkbox"/> Masking tape - 1 roll |
| <input type="checkbox"/> Bamboo skewers - 20 | <input type="checkbox"/> Office glue - 1 tube | <input type="checkbox"/> Duct tape - 1 roll (total) |
| <input type="checkbox"/> Bamboo stick (fimbo) - 1 | <input type="checkbox"/> Rubber bands - 10 | <input type="checkbox"/> Ruler - 1 |
| <input type="checkbox"/> Tongue depressors - 10 | <input type="checkbox"/> Pencils - 2 | <input type="checkbox"/> Scissors - 1 |
| <input type="checkbox"/> Toothpicks - 2 small cans | <input type="checkbox"/> Index cards - 10 | <input type="checkbox"/> Science Shillings - 20 (see below) |

RULES

- Approximately 1 hour time limit for construction.
- Teams begin with only a ruler, scissors and 20 *Science Shillings*. These items may NOT be used in construction of bridge.
- All building materials must be purchased from a science shop. Suggested prices are as follows:

Straws (bundle of 10)	1 /=	Office glue (1 tube)	3 /=
Skewers (bundle of 10)	2 /=	Rubber bands (x 5)	1 /=
Fimbo	3 /=	Pencil	1 /=
Tongue depressors (x 5)	2 /=	Index cards (x 5)	1 /=
Toothpicks (2 small cans)	1 /=	Masking tape (1 roll)	3 /=
String (1 metre)	1 /=	Duct tape (30 cm)	1 /=

- Bridges will be loaded by placing rocks or other weights into a small bucket that must rest on top of the bridge.
- Bridge must span a 30 cm gap between two chairs / tables.
- 1 student from each team must be designated as team accountant. Only this student may purchase items from the shop.

Points

(Based on number of rocks / weights placed before bridge fails)

1st - 100 pts, 2nd - 75 pts, 3rd - 50 pts, 4th - 25 pts, Others - 0 pts

BONUS: 5 pts per *Science Shilling* remaining after construction

Extra Materials

Small bucket

Several large rocks (20) / other large weights

2 chairs / tables 30 cm apart

Science shop table

Extra bamboo sticks (fimbos) - 2-4

Index Cards for price signs - 12

Notes:

- ★ Student accountants may only purchase 1 of each item at a time. They must allow other students to make purchases before buying another of that item.
- ★ At some point 15-20 minutes into construction time, shopkeeper may announce a newly received shipment of bamboo sticks (fimbos). However, due to demand, the price has increased to 5 /=.
- ★ Bridge has failed when it either collapses / breaks or when the bucket can no longer be balanced on top of it. Record largest number of weights successfully added.

Take It Further

- Ask students to present their bridges and describe how they decided to manage their money. What materials did they purchase and why?
- What would they do differently if they could start again?
- Which team finished with the most total points after the BONUS? Did the most money spent result in the strongest bridge? Who was the most efficient with their money?
- Make a slideshow or show students pictures of bridges from around the world after the competition. Did the students' bridges resemble any of them?

