

Rope Bridge Homework

Hi! Remember us? We worked with you on the rope bridge for Kotyaevka. The new one is ready now and we thought it would be a good idea to produce a souvenir brochure to for kids in local schools. It should teach them something about forces and show them that engineers can do good things for the country! Will you help us to produce this brochure?



I have to produce all the words for the brochure. Please can you supply me with a piece of writing that:

- has 200 words
- covers the most important scientific ideas used in the bridge construction
- shows how the bridge will benefit the local people

The brochure will be given out to children in their final year at primary school so you need to make sure it is easy for them to understand. The ideas below came up at our first editorial meeting - maybe they will help you.

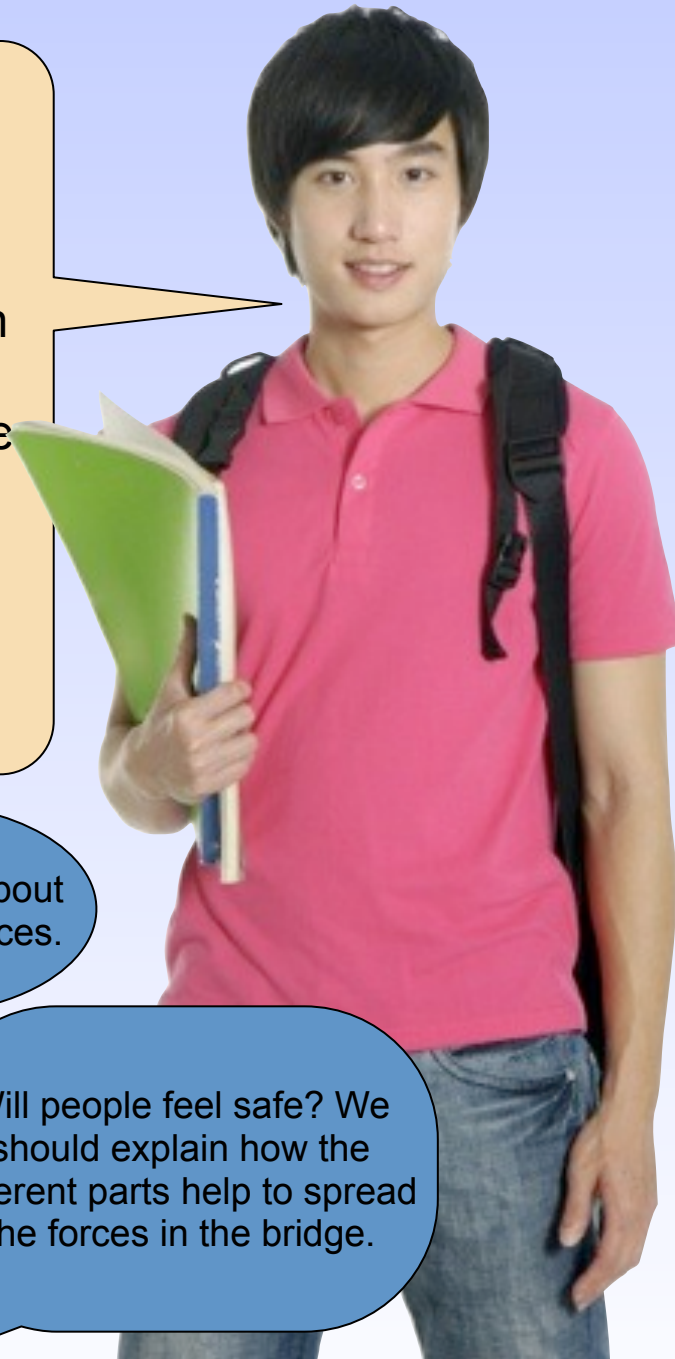
Should we use the word 'mass' or 'weight'? Does it matter?

We need to talk about measuring forces.

We should explain why a suspension bridge is better than a solid concrete one.

People need to know the difference between compression and tension forces.

Will people feel safe? We should explain how the different parts help to spread the forces in the bridge.



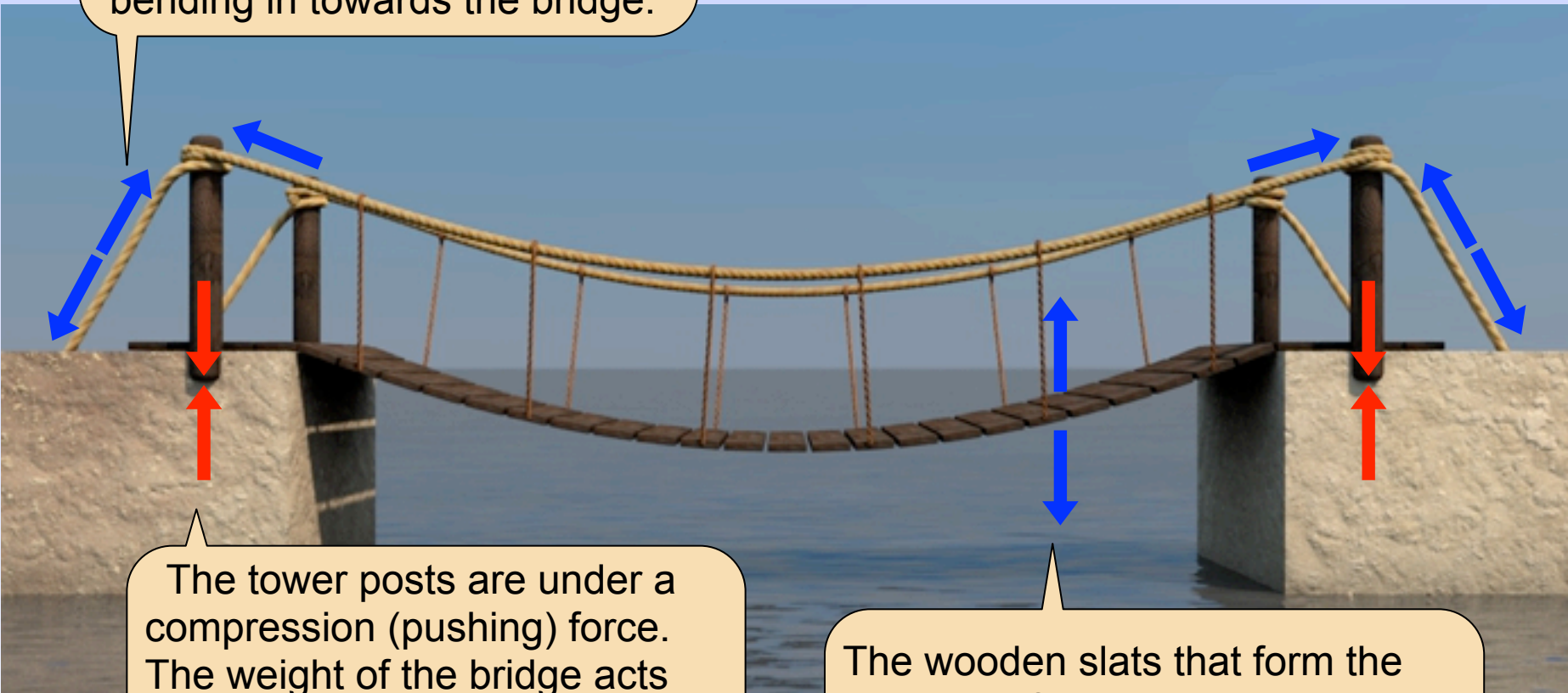
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My job is to make sure the brochure looks good. You can use up to 4 diagrams and up to 3 photographs but remember the whole thing has to fit onto 2 sheets of A4 paper. You can print on both sides of the paper so there is quite a lot of space - but remember you have to get the words in as well! Think about how some magazines or comics mix text and graphics to look attractive.

The rope is under a tension (pulling) force. This pulls on the tower posts at the end and then on the ground. The anchor ropes stop the tower posts from bending in towards the bridge.



The tower posts are under a compression (pushing) force. The weight of the bridge acts through them. The Earth balances this force with an equal and opposite one.

The wooden slats that form the pathway of the bridge pull down on the vertical ropes connecting them to the main suspension rope. So these ropes are under a tension (pulling) force.

