



# BOREDOM BUSTERS

## SCIENCE AND TECHNOLOGY CHALLENGES

### Become a Bridge Builder

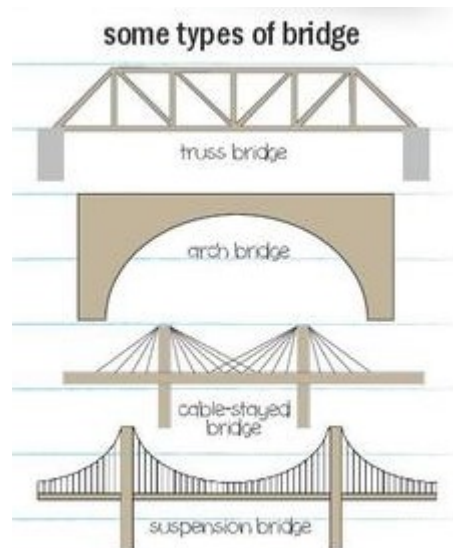
**The Challenge:** Build a bridge 50cm wide that can support the weight of a food tin in the middle.

**Resources:** Give all the challenge participants the same set of resources. This could be things like: straws, newspaper, cardboard, toilet rolls, lolly sticks, paper, sellotape, string, elastic bands, glue, scissors; whatever you have in your house really! You'll need a ruler to measure the length of your bridge too!

**Top Tips:** Some shapes are better at absorbing weight than others—triangles for example.



Think about bunching or twisting resources together too to strengthen them.



With thanks to the BAE Systems Education Programme for the bridge images.

### Design the Strongest Boat

**The Challenge:** Using foil, create a boat that can contain the highest number of coins or marbles (or whatever you have in your house!) without sinking. What's the best shape?

**Resources:** Give everyone a piece of foil roughly 30cm by 30cm to create their boat. You need a bowl or even a paddling pool to float them in and lots of the same coins or marbles to add!

**Extra Challenges:** Can you reduce the amount of foil and still hold the same number of marbles or coins? What happens if you use a liquid other than water? Does it matter where you place the weights within the boat?



## Experiment with Paper Planes

**Challenge:** The goal of this experiment is to test different paper aeroplane designs:

- Which aeroplane will travel the furthest?
- Which aeroplane will spend the longest time in the air?
- Which aeroplane will land closest to a target?



**Resources:** A4 paper (try to use paper you have already used or is in the recycling bin if you can!), something to use as a target, something to time with like a mobile phone and a tape measure (if you don't have one use markers so you can compare different flights!).

**Top Tip:** Not sure how to make a paper plane? Check out these instructions from [Newsround](#). Once you know the basic design, experiment with different folds and shapes!

**Extra Challenges:** Does the size of the paper make a difference? What happens if you use card instead of paper?

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## Protect the Egg!

**Important Note:** this activity needs an adult to help!

**Challenge:** Create a parachute and protective basket for an egg using resources you have around the house. Remember, you can't tape anything to the egg and it must be able to be placed in and come out of your structure freely! **With the help of an adult**, drop your parachute with its egg cargo from a height...will your egg survive without cracks?!

**Resources:** Scissors, sellotape, glue, card, paper, newspaper, bubble wrap, cotton wool, paper clips, string, wool, plastic bags, bin bags, fabric, anything else you have! You'll also need an egg!

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We'd love to see the results of some of your challenges and share them on [Kent Cares Town](#) or on the [Participation Team Instagram Page](#). Email pictures or films to [VSK\\_Participation@kent.gov.uk](mailto:VSK_Participation@kent.gov.uk) or WhatsApp to 07974 242828 (Just so you know, we won't post anything with the faces of young people clearly visible and don't use your names online!)

**THE PARTICIPATION TEAM**