



The Royal Institution
Science Lives Here

In conjunction with University of Worcester

TRY THIS AT HOME!

Good vibrations

What you'll need

- Pipe cleaners
- 30cm ruler
- Sellotape
- 2 tin cans (full, the same size)
- Chopping board, or any flat solid board



Step one

Build a structure 30cm tall with pipe cleaners. Think about the shapes you see in buildings around you.

Step two

Rest your chopping board on top of the tin cans and stick the base of your building down with tape.

Step three

Rock the board side to side to model an earthquake and test your building!



What happens?

What shapes did you find made for a strong structure? Squares are not a great shape to use in constructions, because they are not a rigid shape. With only a little bit of force, they will deform and cause your building to fall over. Triangles are much stronger. Under stress a triangle remains rigid and cannot change shape. The only way it will break is if the forces are strong enough to break the bars or joints. What you have done is called 'performance-based design' and is how engineers test future buildings, by testing scale models to see how they behave. It's just they do this all within a computer model and not with pipe cleaners!

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