

Build a newspaper table

Unlock your inner engineer and discover how paper tubes can make amazingly strong structures.

What you need

- Lots of newspaper (we used six newspapers)
- Sticky tape
- Scissors
- Ruler
- Tray

DID YOU KNOW?

The largest building made wholly of paper had a base 15.2 metres by 17.9 metres and was 6.4 metres tall. That's taller than a giraffe and nearly as long as a cricket pitch.



TOP TIP
Have lots of pre-cut pieces of sticky tape ready for when you are making the table.



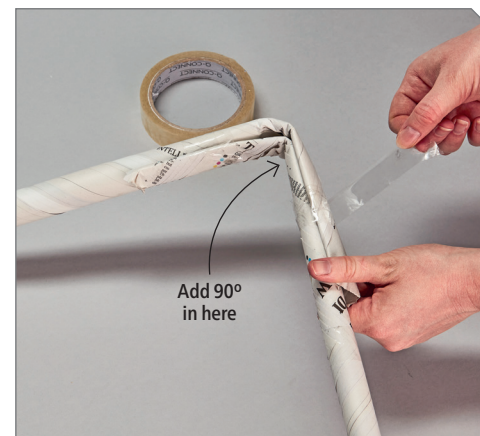
1 Roll six newspaper sheets tightly and diagonally. Secure each end with sticky tape. Make 18 tubes.



2 Each side of the table needs four tubes. Measure 15cm from each end of one tube, and fold over.



3 Measure 10cm from one end of a second and third tube. Make a right-angled fold.



4 Attach the three tubes together, making right-angled corners. Secure in place with sticky tape.



5 Strengthen the shape by bending another tube in half. Tape it to the middle piece and both the legs.



6 Now repeat steps 2, 3, 4 and 5 to make a total of four table sides.



7 Join all sides of your table together with sticky tape, to make a four-sided square shape.



8 Finally, halfway up the table legs, fix two cross-piece tubes in an X-shape.



9 Turn the table over and check its legs are the same length. Place a tray on top. Your table is ready!

How does it work?

This activity shows the importance of different 3D shapes for construction. A sheet of paper is not very strong, and is easily crushed or ripped. However, a tube of paper is much stronger. By rolling the sheet, you have turned a flat sheet into a cylinder – a hollow tube with a



circular cross-section (looking down the length of the tube). Structurally, a cylinder is one of the strongest possible shapes. You'll find them everywhere: tree trunks, fence posts, stone and concrete columns that support buildings, and pillars that hold up ceilings.

Cylinders have exceptional strength, whatever they're made from. They resist being pressed (compression), because they spread forces evenly along their length. This is how newspaper tubes can support a tray of books. Cross-pieces help to keep the structure stable.