



## Building - How do buildings stay up?

### Fact

- There are lots of important things that help a building stay up. These are some of the basic ones.
- Architects (are-key-tekts) need to check out climate conditions like wind speed and direction, temperature range and rainfall and things like soil stability and drainage before so they can design the right house for the land.
- Builders need to use the right tools and materials for the job.
- The building needs to be put together in the right order, starting with a strong structure using bracing to help stop the building from moving and shifting.
- A brace is made whenever a triangle shape is made in a structure.
- A triangle forms the strongest brace because it won't buckle, bend or collapse out of shape when it's under pressure.
- You can find bracing in a building in the walls, ceiling and floor, but you don't normally see it when the ceiling, walls and floor are finished.

### Do you know

- The plan that builders follow is drawn by a building designer called an architect.
- Behind the boards that make your walls, ceiling and floors your house might look a bit like a skeleton made of wood.
- Houses made out of bricks use the way the bricks are put together for bracing.

### Experiments you can do

Make different shapes and test how strong they are.

Try making shapes with pieces of wood and nuts and bolts. Join the pieces of wood together to make different shapes and then see if you can push or pull them out of shape.

Try a square, a rectangle and a triangle. Is the triangle really the strongest shape?

### Other Investigations

Knock on your wooden walls

Explain what you're doing first otherwise it will drive everyone else crazy! Then gently knock with your knuckles along the wall and see if you can hear any difference in the sound the tapping makes. If it sounds hollow and the noise echoes back to you then the space behind where you're knocking is probably hollow.

If it sounds like a dull thud you'll probably find that a piece of the wood that makes up your house's skeleton is behind where you're knocking.

This is a useful thing to know if you want to hang a picture on the wall!

### Jokes

What did one wall say to another? Meet you at the corner!

From Cenara Davies-Bell