



Marvels of engineering

Some are suspended at stomach-churning heights, others stretch for miles. Take a look at some of the world's greatest bridges.

Last November, Chinese state media announced that they had successfully laid the foundations of Pingtan Strait Railroad Bridge after drilling 1,895 pillars into the ocean.

The bridge is being built over the Pingtan Strait. A strait is a narrow stretch of water – and this one is famous for its high-speed winds and wild waters. For around 300 days a year, winds of up to 30mph create enormous, towering waves. To build the bridge, engineers will use 300,000 tonnes of steel and 2.7 million tonnes of cement. It's a daring mission, but China is famous for its feats of engineering. The country now boasts the longest, highest and most terrifying bridges in the world.

Structures that allow people to reach the other side of a river or valley date back thousands of years. In prehistoric times, humans used trees to span rivers, but crossings are a little more sophisticated now. There are several types of bridge, all of which feature supports that are strong enough to hold up the structure. The parts between the supports must also be very strong in order to bear the load.

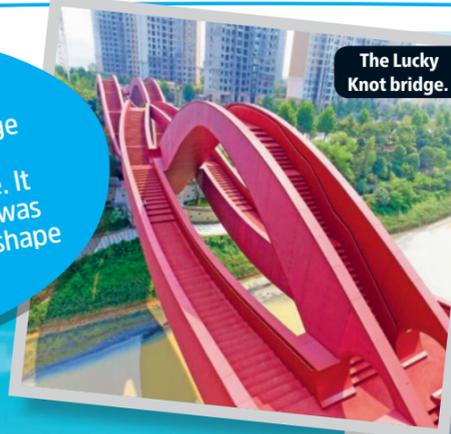
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WRONG BRIDGE

Tower Bridge in London is one of the most easily recognisable bridges in the world. It is often mistaken for London Bridge, but the two are in fact separate crossings.

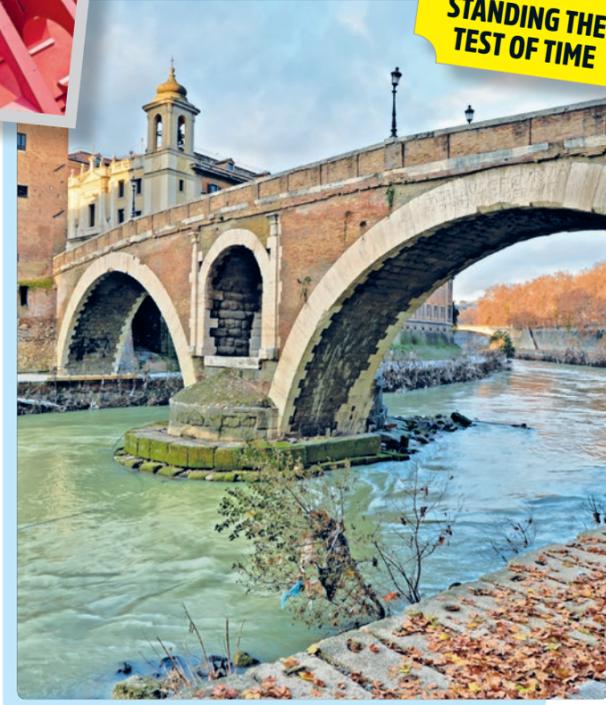


WACKY DESIGN
China's Lucky Knot bridge in Changsha is three bridges woven into one. It is 185 metres long and was designed to imitate the shape of a roller-coaster track.



The Lucky Knot bridge.

Pons Fabricius
Constructed in 62BC, the Pons Fabricius in Rome, Italy, is one of the oldest bridges still in use today. It is made from brick and rock, and many people believe it was built to replace a wooden bridge that burnt down. It is 62 metres long and 5.5 metres wide, and is still used by thousands of Romans every day.



STANDING THE TEST OF TIME

THE MOST FAMOUS

Golden Gate Bridge

Golden Gate Bridge in San Francisco, in the US state of California, is one of the most famous bridges in the world and has featured in several films, including *Monsters Vs Aliens*, *X-Men: The Last Stand* and *Ant-Man*. Opened in 1937, Golden

Gate Bridge is a suspension bridge (a bridge hung from supports by cables) that crosses the Golden Gate – a stretch of water that opens into San Francisco Bay. The bridge is 1.7 miles long and contains about 75,000 tonnes of steel.

Danyang-Kunshan Grand Bridge

At a whopping 102 miles, Danyang-Kunshan Grand Bridge in China is the world's longest bridge. Its span is the same as the distance from Birmingham to London, and it took a workforce of 10,000 people four years to complete it. Around 450,000 tonnes of steel

was used in its construction, and it is so sturdy that it can withstand magnitude eight earthquakes or being hit by a 300,000-tonne ship. It can even cope with the power of a strong typhoon, according to Chinese officials.

THE LONGEST BRIDGE

HOW LONG?!
Danyang-Kunshan is more than 29 times the length of Bromford Viaduct near Birmingham – the UK's longest bridge.



THE MOST TERRIFYING

Zhangjiajie Glass Bridge

If you're afraid of heights, you might not want to walk along the Zhangjiajie Glass Bridge in central China, which is the world's longest and highest glass bridge. It is suspended 300 metres above the ground, and pedestrians can see the sheer drop below as they walk over 99 glass panels. The terrifying structure was completed in December 2015 and cost around £2.6 million to build. How safe is it? To test it, Chinese officials bashed the bridge with sledgehammers and drove a car over it.

THE TILTING BRIDGE



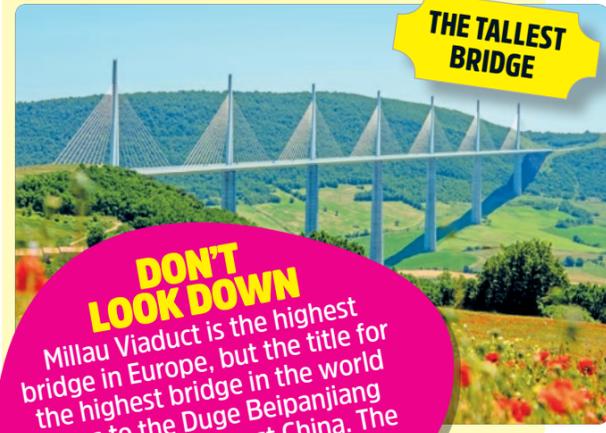
Gateshead Millennium Bridge

The Gateshead Millennium Bridge in the north-east of England is the world's first tilting bridge. A tilting bridge is a moving bridge that uses motors to rotate and lift the curved structure – rather than opening in the

middle and lifting up like a drawbridge – to allow ships to pass underneath. It has eight motors and can tilt at about 40° in four and a half minutes. Opened to the public in 2001, the bridge spans the River Tyne.

Millau Viaduct

Millau Viaduct stretches more than 1.5 miles over the gorge valley of the River Tarn near Millau in southern France. It is the tallest bridge in the world – one part of its structure is taller than the Eiffel Tower in Paris. When the design for Millau Viaduct was proposed, people thought it would be impossible to build. Since then it has won many awards for engineering excellence, including the Outstanding Structure Award by the International Association for Bridge and Structural Engineering in 2006.



THE TALLEST BRIDGE

DON'T LOOK DOWN
Millau Viaduct is the highest bridge in Europe, but the title for the highest bridge in the world goes to the Duge Beipanjiang Bridge in south-west China. The bridge is 565 metres above the valley below.