

Catenary arch

Can you build an arch that stays put?



Lay the white board down flat.

Make sure that the wooden board is vertical.

Arrange the blocks on the outline marked on the white board, as numbered. The black stripe must face inwards, and the blocks must touch each other.

Tilt the board up slowly, hold the base flat, and then tilt the white board down.

The shape of the arch of blocks is the same as the shape of the hanging chains.

In the hanging chain, the links all pull on each other. In the arch, the blocks all push on each other. The blocks don't slide off each other because the forces acting between them act exactly along the curve of the arch itself.