



What kind of wheel design would you use for a toy tractor, roller skates or to pull a suitcase?



Innovations in wheel designs

There are two types of rotary movement: spinning, like a wheel, and oscillating like a swing. What else uses rotary movement?*

3500 BC

Solid wheels – these were invented in Mesopotamia thousands of years ago. This was a flat piece of wood shaped into a circle with a hole in the middle for an axle to make carrying loads easier. Before the axle people had probably used log rollers to move things.



Wheels in wheels

The iBot is a wheelchair that could 'walk' up steps and used wheels to raise the sitter up to 2 metres high. Michelin's 'tweels' have their spokes arranged to act as shock absorbers. Some shopping trolleys and baby buggies have three-wheels that rotate around another axle which allows them to mount kerbs.



2000 – 1000 BC

Spoked wheels and iron rims were developed in Egypt and Europe. Used on chariots first, these were lighter, needed less material and were better at absorbing shocks from uneven ground. Putting a thin band of iron round the outside of the wheel made them last longer.

1770s

Continuous tracks – wheels running on their own surface – were developed for use on uneven ground. They are used for tanks, caterpillar tractors and bulldozers.

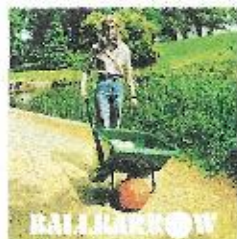
1802

Wire spokes and pneumatic tyres for bicycles and cars were invented in the 1800s. These absorbed shocks even better than solid spoked wheels. They were first used on bicycles.



20th Century

Modern car wheels made from metal alloys and with steel rims are pressed into shape using strong mechanical presses. Wheels can be spheres too, used on some wheelbarrows.



*From Wheel, the, for, wheel's, up, swing, hammer, hat

