



Bike Gears - Why do bikes have gears?

Fact

- Gears give you the choice to pedal your bike fast or slowly depending on how much effort or work you want to put into it.
- Different gears are good for different conditions.
- When you pedal a bike you're doing the work. The amount of work you do depends on two things. How hard you push the pedals and how far they turn. Gears let you trade off one of these things against the other.
- On bikes with no gears one turn of the pedal equals one turn of the wheel. With gears you can change that ratio. For steep hills, you may choose a gear that lets you turn the pedal many times to turn the wheel just once. On the flat or going down hill you may choose a gear that turns the wheel many times for each turn of the pedal.

Do you know

- The Penny Farthing bike got its name from the coins that were used back when this bike was popular around 1870. One coin was a great big penny and the other a little farthing and when you put them side by side they looked like the bike wheels.
- Most gears, like the gears on a bike, look like a circle with lots of squared teeth going around them. These "teeth" fit into the bicycle chain and as you push on the pedals the pedals turn and that turns the gear attached to the pedal. The teeth on that gear pull on the bicycle chain which makes it turn. As the chain turns it pulls on the teeth of the gears at the back of the bike which are attached to the back wheel and that makes the wheel turn.
- There are bikes that have up to 24 gears!

Experiments you can do

Experiment with the different gears on a bike – if you have a bike with gears. Try riding the bike from a stopped position in each of the gears. Which is easier and which is harder?

Other Investigations

Ask your teacher if your school has any gears you can experiment with. Or get them to show you how you can make some gears out of cardboard. They may have a stencil you can cut around and then pin into place so as one gear turns it will turn another.

Jokes

Why couldn't the bike go to the ball? It didn't have the right gear.