The Hobby Horse © Hull Museums

The Thanet Silver light © Hull Museums

Investigation: Comparing 2 Cycles

Look at the pictures to find the answers to the below questions

- Why do you think the cycle in the first picture was called a hobby horse (clue: think about early forms of transport?)
- Compare the 2 cycles, what's missing from the early cycle that all modern cycles have?
- Looking at the early cycle, why do you think would going up hill would be difficult?
- What materials are the 2 cycles made from?
- Which cycle do you think is heaviest, and why?
- How do you think the rider made the hobby horse move?
- Take a closer look at the wheel, what's missing?
- Compare the 2 cycles, which cycle travels faster and why?

Teacher’s notes

The Hobby Horse 1817

This is one of the very first types of cycle to be invented. To introduce it, ask the children what the main form of transport used before cars, trains and cycles was. (Horses, this is why the cycle is called a Hobby Horse) In its day this early wooden bike wasn't taken seriously as a form of transport, it was used more as a pastime for the wealthy (contributing to the *Hobby* part of its name) It wasn’t until later that the design was adapted to become the modern bike we know today.

The Hobby Horse had no pedals! The rider would have to push themselves along with their feet. Getting up hills would have been extremely difficult and taken lots of effort as there were no chains and gears. Going down hill was fine; however stopping would be a problem as there were no brakes. To stop you would have needed to use the friction between your shoes and the ground. Friction would have been fairly low between the wheels and the road, as these early wooden wheels had no tyres to help increase grip. The Hobby Horse was constructed mainly from wood, making it very heavy, so this is a very awkward vehicle to stop. Although not very long lasting in its day, the Hobby Horse actually represented the beginning of the modern cycle as we know it now. Encourage the children to compare the early cycle with the 1940s racer to see how design has improved comfort speed and safety. The current world speed record for cycling is 72.74 miles per hour! held by Sam Whittingham. This would break the speed limit on a motorway!

The Thanet Silver light 1947

This racing bike, built in 1947 looks very similar to the modern racers of today, proving that good design lasts for a long time. Use this cycle to discuss improvements in design. By comparing and contrasting it with The Hobby Horse.

Discussion Points

Compare the wheels of the 2 cycles. How do the differences affect comfort and speed?

The Racers wheels are thinner which means less area is in contact with the road, resulting in lower friction - allowing for much higher speeds.

How the wheels are made lighter.
This is made possible by using very thin spokes, and light metal (unlike the heavy wooden ones seen on the hobby horse). Less weight equals less friction, allowing for higher speeds

How tyres increase speed & comfort
They are inflated with air, which soaks up lumps and bumps of the road, making the ride much more comfortable.

Note how the tyres are quite smooth, this allows for friction to be kept low (This can be compared to the tyre of the Morris car on the downloadable car comparison where attention can be drawn to the fact it has a deep tread to get a good grip of the road). Here you could look at the concept that the lower friction is, the faster you go, and the faster you go the longer it takes to stop.

How the frame is made lighter
The frame is now made of metal instead of wood. Metal can be melted at very high temperatures and moulded in to any shape, modern bicycle frames are actually hollow which makes them extremely light, again allowing for higher speeds. Try tapping your bike at home with a metal object, if it makes a hollow ringing sound you'll know your bike is hollow too!

As an extension to this activity download our exciting Transport card game to learn more about the amazing vehicles in Streetlife.