

Wheels that changed the world

3.

You are going to read a magazine article about the history of the bicycle. For questions 16–30, choose from the sections of the article (A–D). The sections may be chosen more than once.

Mark your answers on the separate answer sheet.

In which section of the article are the following mentioned?

- features that were not added because they were considered problematic 16
- a design that is exactly the same as that of current products 17
- a product that became popular despite its price in comparison with an existing product 18
- a dramatic reaction to a particular sight 19
- a design feature that it was felt would not appeal to men 20
- a warning that affected the appeal of a certain product 21
- a design that required more than one person to operate the vehicle 22
- an attempt to get publicity 23
- the possibility of injury because of where the rider sat 24
- products that were introduced to compensate for a disadvantage of another product 25
- an aspect of design that limited the number of people who could use a certain product 26
- a design that some manufacturers felt would not become popular 27
- people riding a certain product in order to impress others 28
- the motivation of one set of people for changing bicycle design 29
- an account of a remarkable achievement 30

A The bicycle was an absolutely extraordinary creation. Inventors had first begun to wrestle with the challenge of coming up with a human-powered vehicle in the 17th century. In 1696, a French doctor used his manservant to power a pedal-driven carriage while the master sat up front and steered. The beginnings of the modern bicycle emerged in 1818 when Karl von Drais, an eccentric German baron, invented what we now know as the hobbyhorse. It was bicycle-shaped with wooden wheels but had no pedals: the rider had to push it forward with his feet. At £8 – equivalent today to £500 – the hobbyhorse could be afforded only by true gentlemen, and it soon became a much sought-after status symbol. But the craze died out after a year following a statement from the London College of Surgeons, which said darkly that the hobbyhorse could cause ‘internal injuries’.

B Brilliant minds continued to wrestle with the mechanical horse but made slow progress. Even Britain’s top engineer, Isambard Kingdom Brunel, could come up with nothing better than a hobbyhorse that ran on railway tracks. Finally, in 1887, a Parisian blacksmith called Pierre Michaux added a pair of pedals to a hobbyhorse, and the bicycle was born. The Michaux bicycle had pedals fixed directly to the front wheel, just like a child’s tricycle today. Made largely of iron, it weighed as much as a fridge but was easy to ride and took a man up to five miles with the effort he would use to walk only one. Michaux’s first newspaper advertisement in May 1867 offered ‘pedal velocipedes’ for 250 francs. At this price only the wealthy could afford one and a group of 20 young men spent their days showing off their ‘steeds’ before fascinated crowds in the Bois de Boulogne. Michaux was soon producing 20 bicycles a day, and decided to organize a women’s race as a stunt to boost his sales further. A racecourse in Bordeaux was roped off, but when the four lady racers made their appearance in short skirts, the crowd of 3,000 burst through the barriers. Nevertheless, the ladies raced off. A contemporary report recorded that Miss Louise took an early lead, but Miss Julie made a ‘superhuman effort’, passing her on the home straight and winning by a nose. Within a year, there were 50,000 bicycles in France.

C Not to be outdone by their French counterparts, British engineers set about improving bicycle design with wire-spoked wheels and solid rubber tyres. The weight was reduced to a mere 44lb, only twice the weight of a bike today. Gears and chains were still thought too heavy and complex to be fitted to a bicycle, so designers could increase top speed only by increasing the size of the front wheel. Eventually front wheels grew until they were 5ft and the penny farthing was born. Speeds of 20 mph were now possible, but the rider’s seat was directly above the front wheel, which made riding in a skirt impossible, so women were effectively barred from bicycles. To make up for it, manufacturers developed tricycles with low seats. The penny farthing’s biggest drawback was its danger: the high seat was difficult to climb into, and once up there the driver had a long way to fall.

D In 1885, John Starley launched the Rover Safety Bicycle, the first model to adopt what we now think of as the traditional design. The bicycle industry was unimpressed, as it had a chain-driven rear wheel, which added weight, and a low seat, which made male riders look a bit ridiculous. But it turned out to be faster than a penny farthing because it was more aerodynamic. More importantly, the Rover could be ridden in a skirt. At £22, it was more expensive than a penny farthing, but its practicality was just what the public wanted. Soon there were half a million bicycles in the UK. Between 1890 and 1900, the bicycle was refined until the basic design became very similar to the featherweights that modern champions ride in the Tour de France. Lightweight steel tubing, the diamond-shaped frame, gears and pneumatic tyres with separate inner tubes all became common. Top speeds of 25 mph could now be reached. At last the cyclist could outrun a galloping horse. The bicycle was found in every walk of life: policemen and postmen had them and several European armies issued them to their soldiers.