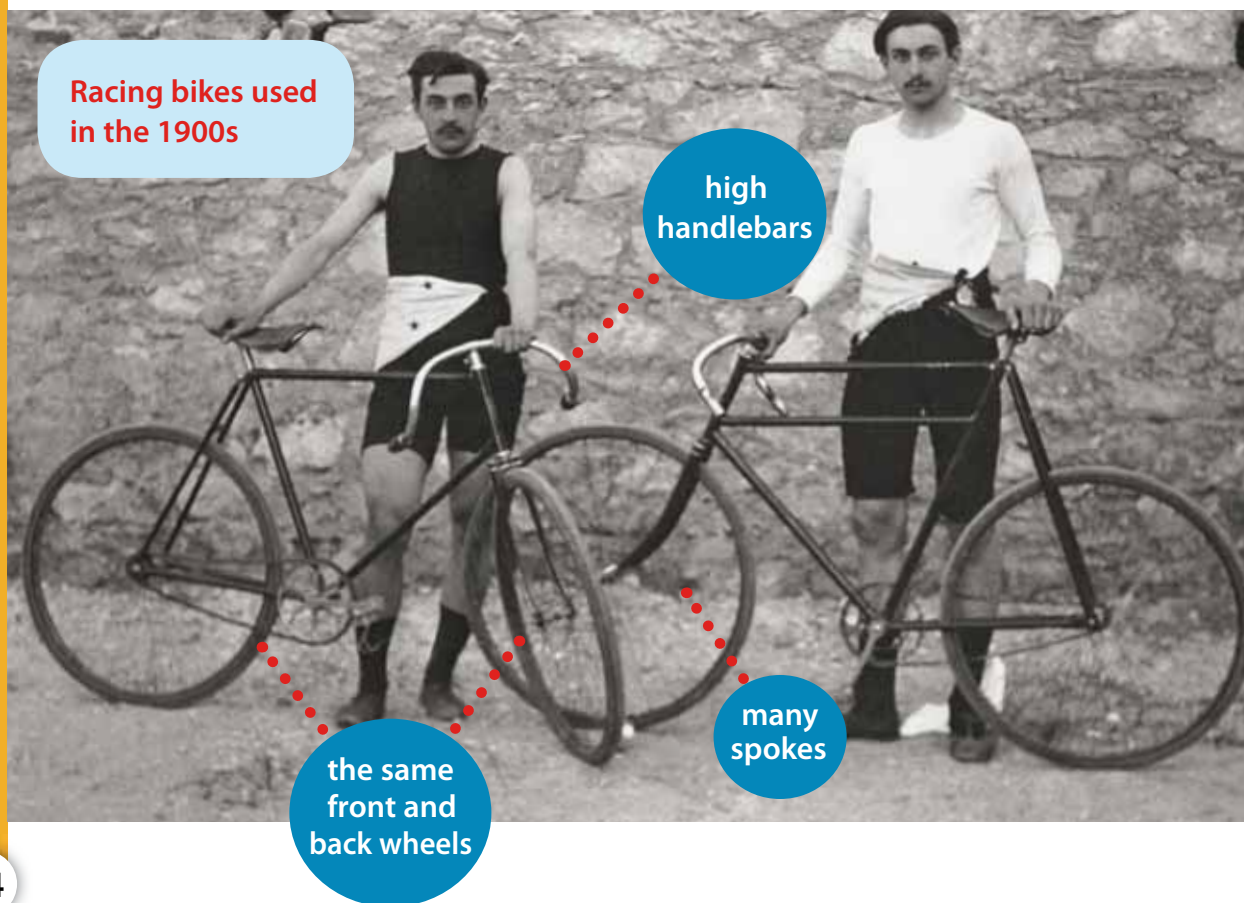


# Equipment

## Bicycles

Early bicycles were made of **steel**. They weighed more than 45 pounds (20.4 kg). The handlebars were high. The wheels had spokes. This caused lots of wind resistance. Olympic cyclists had to use a lot of energy to ride these heavy bikes. No wonder their times were slower than Olympic cyclists today.



Technology has improved bicycles. Today, they are made of very light materials. In the 1992 Barcelona Olympic Games, cyclist Chris Boardman rode a “super bike.” It weighed only 17.6 pounds (8 kg). It had low handlebars. The front wheel only had 3 spokes and the back wheel had none. With this amazing bike, Chris Boardman set new Olympic Games records. Technology still changes bikes today.

Chris Boardman on the racing bike he used in the 1992 Games



### LET'S EXPLORE MATH

At the 2000 Sydney Olympic Games, a cross-country cycling race started at 1:00 P.M. The gold medalist crossed the finish line at 3:09:05 P.M. The bronze medalist crossed the line 2 minutes and 16 seconds later.

- How long did the gold medalist take to complete the course?
- At what time did the bronze medalist cross the line?

## The Pole Vault

In the pole vault, athletes use long poles to jump over a high bar. Early poles were made out of **bamboo**. Athletes flew high over the bar, then they landed on their feet in a pile of sawdust.

Bamboo poles were last used in the 1948 London Olympic Games.



Owen Guinn Smith, 1948

Today, the poles are light but strong. They are made of **fiberglass** or **carbon fiber**. They bend well. This helps the athletes jump higher than before. And today, the athletes have a softer landing. They land on a thick foam mat.



Yelena Isinbaeva, 2008

### Winning Heights — Then and Now

Olympic Games	Athlete	Event	Winning Height
1948 London	Owen Guinn Smith, U.S.A	Men's pole vault	4.3 meters
2008 Beijing	Yelena Isinbaeva, Russia	Women's pole vault	5.05 meters

### LET'S EXPLORE MATH

A pole vault competition finished at 3:40 P.M. The whole competition lasted 1 hour and 15 minutes.

- At what time did the competition start?
- Describe how you solved this problem.