



# GREAT INVENTIONS

## THE BICYCLE



This morning I went for a bike ride. A while back, I took a walk instead of riding my bike. While I was walking, I thought about who invented the first bike. After I got home, I got the phone and called my grandfather because he knows everything. I asked him if he knew who had invented the bike and when it was invented. Pay attention to what I am going to tell you. It is interesting.

Ancient Egyptians made rudimentary devices composed of two wheels connected by a bar. In China, a similar device was built and is considered the ancestor of the bicycle. Many people think the famous Italian artist and inventor, Leonardo Da Vinci, first designed a bicycle with chain and pedals. This belief started in the 1970s after a sketch of a bicycle was discovered in his work, Codex Atlanticus, written around 1490.

In 1997, Dr. Hans-Erhard Lessing questioned the authenticity of that design. So a detailed scientific study was done that showed that the drawing of the bicycle that appeared in Da Vinci's Codex Atlanticus, was not made by the famous artist; it was a fake added after a restoration that was done to Codex in late 1960.



The inventor of the velocipede, an ancestor of the bicycle, is attributed to Baron Karl von Drais de Sauerbronn, who is better known as Karl Drais. This German inventor created the artifact seen in the picture on the left around 1817. This could transport a person when propelled by resting the feet alternately on the ground.

Drais called his invention the laufmaschine which means the walking machine in German. It was renamed the Draisiana in honor of its inventor, and later it was called the velocipede. With the Draisiana or velocipede, the driver sat on a small mount placed in the center of a wooden frame and held onto a bar of wood attached to the front wheel. This wooden bar moved the wheel in the direction that the driver wanted to head.

A person would push forward with their feet to make it move, similar to the movement a skater makes. With this momentum, the velocipede could travel as fast as a carriage.

This invention was based on the idea that a person, when walking, wasted a lot of strength by having to shift his weight alternately from one foot to the other. That same idea made this invention evolve rapidly.

In 1839, the Scottish Kirkpatrick Macmillan discovered how to attach rudimentary pedals on the velocipede. It looked more like a bicycle we use now, see the photo on the right. Because Macmillan did not patent the invention, Gavin Dalzell of Lesmahagow copied it in 1846. He was considered the inventor of the bicycle for almost fifty years.



In 1861, Ernest Michaux attached pedals to the front wheel of an old velocipede, which required better balance. Michaux's invention, the Michaulina, had pedals attached to the front wheel that was bigger than the back wheel. That model was very popular in France.



In 1873, the Englishman James Starley manufactured the first high wheel bike. The front wheel of the Starley bike was three times larger than the one in back. This bike became so popular that, in January 1887, the American Thomas Stevens completed the first bike trip around the world. He left San Francisco, California, and pedaled for more than three years on a tall bike.

In 1885, John Kemp Starley built the safety bike, much like a current bike. In addition to having brakes, the seat was much closer to the ground than the high bike and had equal-sized tires. In 1888, tires with an air chamber were developed by the Irishman John Boyd Dunlop, whose inner tube was filled with air to cushion the wheels hitting against the roads. The front wheel was slightly larger than the rear, and the pedals were attached to a cogwheel which, by using a chain, moved the back wheel.

There are currently more than one billion bicycles in the world being used as a means of transportation and as a leisure vehicle.



Name \_\_\_\_\_

Date \_\_\_\_\_



# The Bicycle

Answer the questions.



1. Who is the author of Codex Atlanticus?
  - a. The Egyptians and the Chinese
  - b. Leonardo da Vinci
  - c. Dr. Hans-Erhard Lessing
  - d. Karl Drais
2. Who invented the velocipede?
  - a. Leonardo da Vinci
  - b. Dr. Hans-Erhard Lessing
  - c. Karl Drais
  - d. Gavin Dalzell of Lesmahagow
3. Who was the first to put pedal on a velocipede?
  - a. Karl Drais
  - b. Kirkpatrick Macmillan
  - c. Gavin Dalzell of Lesmahagow
  - d. Ernest Michaux
4. Who was the first to put the pedals on the front wheel?
  - a. Kirkpatrick Macmillan
  - b. Hans-Erhard Lessing
  - c. Ernest Michaux
  - d. James Starley
5. Who invented the high wheel bike?
  - a. Kirkpatrick Macmillan
  - b. Hans-Erhard Lessing
  - c. Thomas Stevens
  - d. James Starley
6. Who made a bicycle with a cogwheel and chain?
  - a. Leonardo da Vinci
  - b. John Kemp Starley
  - c. James Starley
  - d. John Boyd Dunlop
7. Who discovered a fake added to Codex Atlanticus?
  - a. Leonardo da Vinci
  - b. Kirkpatrick Macmillan
  - c. Baron Karl Christian Ludwig
  - d. Dr. Hans-Erhard Lessing
8. Who made the first trip by bicycle around the world?
  - a. John Kemp Starley
  - b. John Boyd Dunlop
  - c. Thomas Stevens
  - d. James Starley
9. How many bicycles are in the world?
  - a. more than one hundred thousand
  - b. more than a million
  - c. more than a billion
  - d. more than one hundred billion
10. Why do you think bicycles are important?  
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