Read the text “Bicycles, Then and Now” before answering Numbers 1 through 5.

Bicycles, Then and Now

Sometimes, today’s modern products have a very remarkable resemblance to things that were invented a long time ago. Today’s balance bikes for children look remarkably like an early model by Baron Karl von Drais Sauerbrun. Bicycles began with this German inventor. A biography of him reveals that he was born in 1785, worked for his uncle, was given the title of professor of mechanics, and even worked on an early version of the typewriter. The bicycle-like contraption he made in 1817 had two wheels and was made of wood. It had a seat but no pedals. To move, the rider had to use his legs to push the machine forward. It weighed about 50 pounds! It must have been like riding a very heavy scooter.

Drais exhibited his running machine in 1818 and was given a patent for it the same year. In Germany, it was called the Draisine. In France, it became the Draisienne, and in England, it was called a hobby horse. For a number of reasons, this early bicycle was popular only a short time. Riders’ boots wore out too quickly. It was hard to steer. There were very few evenly paved streets, and many roads were often rutted, sunken and full of holes at this time in history. Therefore, it was even more difficult to balance on these new inventions. Riders who decided to use sidewalks instead were crashing into pedestrians and causing injuries.
The history of bicycles shows the chronological order of events as inventors kept improving the design. A Scottish blacksmith named Kirkpatrick Macmillan is believed to have invented the foot pedal for a bicycle in 1840. In the 1860s, the velocipede, which means “fast feet,” first appeared. It had pedals, two wooden wheels, and an iron frame. One was designed with a large front wheel and a small back wheel. It was also much lighter than earlier bicycles. In England, it given the nickname “the Boneshaker.” It gave very rough rides to people, bouncing and rattling over the surface of the road. Nevertheless, two-wheel bikes became popular. There were several improvements to the design to come.

A British bicycle maker named James Starley made improvements in both the bicycle and the tricycle, a three-wheeled rider. His nephew John Kemp Starley worked for him, and the younger man, who had extraordinary mechanical skills, built the Rover in 1885. It is often described as the first modern bicycle. It had two 26-inch wheels, ball bearings, and rubber tires for a smooth and more stable ride. It had a chain drive, as well. The chain drive had been used before on other machines but not on bicycles. The chain transfers power from one part of the machine to another. On bicycles, it distributes power between the two wheels.

In the United States, an amazing number of bicycles were produced in the late 1800s. This spectacular growth led to more inventions. During the 1900s, the wooden wheels were replaced with air-filled rubber tires, which made for a much more comfortable ride. Other improvements followed, including the invention of two-speed and three-speed bicycles, which improved efficiency.

The market for bicycles decreased because cars and motorcycles became a faster and more convenient way to get around. As a result, in the 1920s through the 1950s, children became the primary target market for bicycle manufacturers, and many bicycles were designed to appeal to America’s youth. In the 1960s and 1970s, adults grew more interested in fitness and preserving the environment. Then the industry began growing again. Some bikes were made especially for racing, and others for rough, mountainous land.

Balance bikes are a recent bicycle development. These are amazingly similar to Baron Karl von Draise Sauerbrun’s Draisine. Sometimes balance bikes are called push bikes or run bikes. Like the old-fashioned Draisine, they have no pedals. Children start by walking the bike and pushing it along, then they can glide along. After the young children gain confidence, they can move on to bikes with pedals.
Name: ____________________________ Date: __________

Base your answers on “Bicycles, Then and Now.”

1. Read this sentence from the text.

   A biography of him reveals that he was born in 1785, worked for his uncle, was given the title of professor of mechanics, and even worked on an early version of the typewriter.

   The word biography comes from two Greek roots, bio and graph. Bio means “life.” The root graph can mean “write.” What does biography mean?

   A. spending a lifetime reading
   B. a story told with illustrations and photographs
   C. a written story about a person’s life
   D. something written in two sections

2. This question has two parts. First, answer part A. Then, answer part B.

   Part A: How does the author help the reader understand that the design of bicycles improved through the years?

   A. by comparing different bicycles
   B. by telling the sequence of improvements
   C. by contrasting the Draisine and balance bikes
   D. by explaining what caused people to start using cars

   Part B: Which sentence from the text best supports your answer in Part A?

   A. “It must have been like riding a very heavy scooter.”
   B. “For a number of reasons, this early bicycle was popular only a short time.”
   C. “Riders who decided to use sidewalks instead were crashing into pedestrians and causing injuries.”
   D. “The history of bicycles shows the chronological order of events as inventors kept improving the design.”
3 This question has two parts. First, answer part A. Then, answer part B.

**Part A:** The root of chronological is *chron*, meaning “time.” What does chronological mean?

A. importance  
B. interest  
C. when things happen  
D. why things happen

**Part B:** Which phrase from the text best supports your answer to Part A?

A. “order of events”  
B. “much lighter”  
C. “became popular”  
D. “improving the design”

4 What two events led to the increase in the bicycle’s popularity in the 1960s and 1970s?

A. Rubber wheels replaced wooden ones.  
B. Bicycles were built with chain drives.  
C. People became interested in fitness.  
D. Cars became a convenient way to get around.  
E. There was concern for the environment.  
F. Balance bikes were made for children.
Write the text into the graphic organizer so that events appear in the sequence in which they occur.

The chain drive was added to the bicycle.
Children became the primary market for bicycles.
Kirkpatrick Macmillan invented the pedal for the bike.
Air-filled rubber tires replaced wooden wheels.
Drais received a patent for his running machine.
Cars became a convenient way to get around.