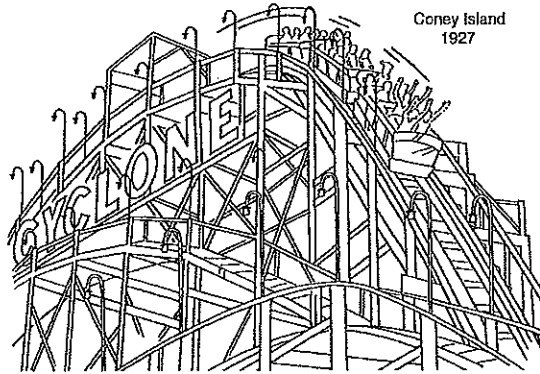


Name _____

Date _____

Directions: Read "Roller Coasters in History" and "Safer Than They Seem." Then answer questions 1–8.

Roller Coasters in History



In recent years, the roller coaster has become the world's most popular amusement park ride. Today's roller coasters reach incredible speeds and move in ways that seem to defy gravity. Nicknamed "scream machines," they attract thrill-seekers in countries all over the world.

To trace the history of the roller coaster, you have to go all the way back to fifteenth-century Russia where the first "ice slides" were built. People climbed to the top of these wooden structures and slid down ice-coated ramps on sleds. Some of these ice slides reached heights of 70 feet and were as steep as modern roller coasters. Of course, they could only be used in winter.

As early as 1784, the Russian Imperial Summer Palace featured sleds with wheels for use in the warm months. However, the innovation of ice-free slides really took off in nineteenth-century France. An early French design fitted the ramps with rollers. Sleds with runners, which were called "coasters," could slide over the rollers. Although the rollers were soon replaced with grooved tracks for sleds on wheels, the name "roller coaster" stuck.

In 1884, the first modern roller coaster opened for business on Coney Island, a famous beach resort in Brooklyn, New York. The "Switchback Railroad," as it was named, stretched over 600 feet along the beach. Its track rose and fell like those of modern coasters, but it was only 15 feet tall. Passengers climbed a tower at one end and boarded cars to coast along the track. Then they had to climb another tower at the far end while attendants pulled the cars up to meet them. Finally, they coasted back to the start.

Although the ride was fairly slow, it was tremendously popular. The next year, a new roller coaster built at Coney Island featured an oval track and a cable for lifting the cars up a steep hill. These innovations allowed for greater speeds and greater thrills. The popularity of this new ride started a wave of roller coaster construction across America.

Name _____ Date _____

As roller coasters became larger, faster, and more elaborate in the early twentieth century, it became clear that the standard designs were not safe enough. A man named John Miller revolutionized the roller coaster. He put the wheels of the cars below the tracks to keep them in place. He also designed locking lap bars and other safety features that are still in use today. His innovations opened the door for a whole new world of high-speed drops and spirals, and the roller coaster industry flourished in the 1920s.

During the Great Depression in the 1930s, roller coaster construction slowed to a halt. People could not afford to spend money at amusement parks. World War II and the advent of television led to the continued demise of parks and roller coasters. Many amusement parks closed, and the number of roller coasters worldwide dropped from about 2,000 to 200. Then, in 1955, the opening of Disneyland in California started a new trend: theme parks. As the theme park industry took off, roller coasters once again became an essential part of a successful park.

Steel construction and continued design innovations have led to far larger and more complex roller coasters. The 1980s saw the first roller coaster taller than 200 feet, and the tallest coaster now is considerably higher. A new type of motor built in the 1990s allowed for smoother rides and faster speeds, and today's fastest coasters reach speeds over 100 miles per hour. Near-vertical descents, upside-down loops, spirals, and inversions are common. Roller coasters have come a long way from the icy wooden ramps of old Russia.

Safer Than They Seem

Roller coasters are designed to feel risky. Their purpose is to give people the thrill of doing something dangerous without the real danger. Should people really be afraid for their lives when they ride a roller coaster, though? In truth, the answer is "no."

There are many myths about the dangers of roller coasters. People worry that they may cause brain damage. People worry that the forces roller coasters put on the body are too great. Yet scientific evidence shows that, for healthy people, these concerns are unnecessary. Mechanical failures are also very rare, and accidents are uncommon. More than 300 million people visit amusement parks each year in America, but only a few deaths occur. Compared with driving a car on the highway, riding a roller coaster is very safe.

Name _____ Date _____

Unlike most cars, roller coasters are inspected every single day they run. Mechanics, electricians, and carpenters arrive at the park early in the morning to inspect, maintain, and repair each ride. In parks that close for the winter, all rides receive a lot of maintenance during the off-season.

Although accidents do happen, they are usually caused by people who ignore posted rules. People who try to stand up, switch seats, or remove safety devices can pose real threats to themselves and others. One story tells of a man who stood to wave at his family while riding a roller coaster. He was knocked out of the car by a sign that said, "Do Not Stand Up!" Because people ignore rules, roller coasters now have many extra safety devices. Most have at least four types of restraints to keep people from standing or moving. But people should learn to follow park rules so that everyone can enjoy the rides in safety.

It is true that roller coasters are unsafe for some people. Parks post warnings about these risks. Small children, pregnant women, and people with certain medical conditions should not ride coasters. For example, roller coasters can raise people's heart rates out of fear. This increase is not dangerous for healthy people. Yet it can pose a serious risk for anyone with heart disease. Parks warn people with heart disease to stay off the roller coasters.

Although there are some risks to riding a roller coaster, they do not make it a dangerous activity. Riders must make sure they follow safety rules and instructions from ride operators. Each person should know his or her own limits and medical conditions and act appropriately. If everyone follows the rules, roller coasters can be an excellent way for people to experience the thrill of "danger" without great risk. Roller coasters are the greatest rides ever invented—and they're safe.

Questions 1-8: Choose the best answer to each question, or write your answer on the lines provided.

1. Which innovation in the roller coaster's history occurred first?

- (A) cables for lifting cars
- (B) ramps with rollers for sleds
- (C) sleds with wheels to ride down ramps
- (D) a track that rose and fell

Name _____ Date _____

2. Why did the construction of roller coasters decline in the 1930s?

- (A) They were not safe enough.
- (B) New kinds of construction materials were used to build rides.
- (C) Theme parks became more successful.
- (D) People could not afford to spend money at amusement parks.

3. Which of these innovations was developed by John Miller?

- (A) locking lap bars
- (B) spiraling tracks
- (C) cables for lifting cars
- (D) steel as a construction material

4. The information in "Roller Coasters in History" suggests that roller coasters are —

- (A) too dangerous for people to ride.
- (B) not as popular as they once were.
- (C) constantly changed and improved.
- (D) an important part of Russian culture.

5. Which sentence from "Safer Than They Seem" states an opinion?

- (A) People worry that the forces roller coasters put on the body are too great.
- (B) Mechanical failures are also very rare, and accidents are uncommon.
- (C) Because people ignore rules, roller coasters now have many extra safety devices.
- (D) Roller coasters are the greatest rides ever invented—and they're safe.

Name _____ Date _____

6. To help persuade readers that roller coasters are safe, the author of "Safer Than They Seem" leaves out which piece of information?

- (A)** the number of accidents caused each year by roller coasters
- (B)** the speed of the fastest roller coaster
- (C)** the number of deaths caused each year by roller coasters
- (D)** the materials roller coasters are made of

7. Give two examples of evidence from "Safer Than They Seem" to support the idea that roller coasters are safe. (2 points)

8. Summarize the development of roller coasters since the 1700s. Use details from the passages to support your answer. (4 points)
