

Grade 3: Unit 5, Week 3 In Motion

Read Aloud: The First Transcontinental Railroad

Wonderful Words: *paved, invent, network, trade, propped*

The First Transcontinental Railroad

It was shortly past noon, May 10, 1869. The place was Promontory, a tiny settlement in Utah. A large crowd had gathered to witness an important ceremony. Telegraph wires waited to carry the news across the country. Two locomotives stood on their tracks nose to nose. One was from the East. The other was from the West.

The president of the railroad got ready to hammer in the last spike. He swung and missed. The vice president also missed! But the crowd cheered. The first transcontinental railroad had been completed! The telegraph wires hummed their message.

The next day, Promontory was nearly empty. There were still a few tents, and of course, the railroad tracks. It was hard to picture the ceremony that had taken place the day before. What was it all about? Why was a transcontinental railroad so important? The answer is part of the story of railroads.

The Story of Railroads

The idea of a railroad began long ago. In ancient times, paved roads were built for carts and chariots. This was an improvement over dirt roads. The hard surface allowed the carts to roll more easily. Heavier loads could be moved. However, the paving was very expensive. It was also difficult to construct.

About the year 1000, miners found a way to push carts through tunnels. The tunnels were only as wide as the carts. The carts were guided through the tunnels on wheels which ran on a track. The track was made from wooden rails nailed to crossties. Like the paved roads, the wooden tracks made a hard surface for easy rolling. Unlike the paved roads, they were much easier to build.

During the 1700s, carts carrying coal used a special track. A flange (flanĵ), or collar, was put on the inside edge of the rail. This flange helped to keep the carts on the track. The tracks were mounted on stone blocks. It was difficult to keep them clear. If a branch or a rock lay on the tracks, the cart was easily derailed.

After much experimenting, an improvement was made. The flange was placed on the wheel instead of the track. The track was shaped like an "I" or "T." The wheel's flange ran along its head. The rails were held in place by wooden crossties. This was an improvement because the rails were self-cleaning. They were also not too expensive to build.

Once the carts were rolling easily, people began hitching them together. A much larger load could be moved in one trip. But the horses or oxen that pulled the wagons could only move a few at a time. More power was needed to pull a train.

In 1769, James Watt invented a motor that was powered by steam. People began to work on a steam-powered locomotive. After 44 years of experimenting, a locomotive finally pulled a train loaded with iron. The experiment took place in Wales. The first locomotive didn't work very well, but the idea caught on. It was not long before improvements were made.

The growth of railroads in America was amazing. In 1830, only 23 miles (37 kilometers) of track had been laid. By 1840, the network of tracks had grown a hundred times. By 1870, the tracks looked like a spider's web across the country!

Speed had increased as well. In 1830, the fastest train could only go from 12 to 18 miles (19 to 29 kilometers) per hour. In 1848, a train called the "Antelope" ran a 26-mile (42-kilometer) race in 26 minutes! The passengers were so scared; they lay down on the floor. No one knew that it was possible to travel so fast.

A Transcontinental Railroad

In the 1860s, settlers were moving into the West. A group of businessmen thought that a railroad between the East and the West would help trade.

The Central Pacific Railroad began construction in Sacramento, California, in 1863. The Union Pacific began in Omaha, Nebraska, in 1865.

Both companies had great difficulty getting their supplies. The Central Pacific had to ship their equipment from the Atlantic coast. They had to send it across the Isthmus of Panama or around Cape Horn. This was very expensive. It also took a long time.

The Union Pacific had its own problems. At first, people had to ship their equipment up the Missouri River by steamboat. Then it was carried by stagecoach and in wagons. Later, they were able to send supplies along the tracks they had laid. It took the work of hundreds of people to complete the huge job.

Work continued for many years after the ceremony in Promontory. The land around the tracks had to be leveled or propped up. This had to be done to prevent landslides that would cover the tracks.

Ten years after the Golden Spike Ceremony, people were crossing America by train. Trains were a popular way to travel. They were also an inexpensive way to ship things.

Later, cars and trucks became more important than railroads. Many railroad companies were forced out of business. Today, you can see just as many unused railroad tracks as used ones. But the story of railroads does not end here. As we become more aware of the need to save fuel, perhaps we can look forward to using the rails once again.

paved

Define: When a road or street is **paved**, it is covered with a hard surface.

Example: We rode our bikes for a long time on the newly **paved** bike path.

Ask: Which type of road might be bumpy—a **paved** road or a dirt road? Why?

invent

Define: To **invent** is to make or think of something for the first time; to create.

Example: Wilbur and Orville Wright **invented** the airplane.

Ask: What things would you like to see **invented**?

network

Define: A **network** is a system of lines or structures that cross or connect to each other.

Example: We could not get any work done in the office because the **network** of computers shut down.

Ask: Why are most big cities surrounded by a **network** of roads and highways?

trade

Define: **Trade** is the act or process of buying and selling goods.

Example: **Trade** between the two states was profitable because a company in one state produced snack bars and a company in the other state grew grains that were used in the snack bars.

Ask: How can **trade** between countries help create jobs?

propped

Define: When something is **propped**, it is held up or supported in place by putting something under or against it.

Example: Ben **propped** up the wobbly table by putting a small pad under one leg.

Ask: When you read in bed, what do you use to **prop** your head up?