The *Hindenburg:* Last of the Great Dirigibles

Read this article well enough so that you can answer questions about it. Your teacher may want you to keep track of your reading time. If so, write your reading time on the SCORECARD on page 47 after you finish the article.

Then answer the questions about the article to find out how well you understood what you read. These questions will help you sharpen your reading and thinking skills.

The *Hindenburg* was a big, modern and powerful airship. To the people of Germany, the huge dirigible was a proud symbol of the German nation itself. To Adolf Hitler, it was the showpiece of the new Germany rebuilding itself after its defeat in the first World War.

Germany had every reason to be proud of the *Hindenburg*. It was the largest airship ever built. The great silver liner was more than three blocks long. It measured 804 feet from nose to rudder, marked with huge, black Nazi swastikas. Since the *Hindenburg's* launching in 1936 it had completed thirty-seven ocean crossings.

On this crossing in May, 1937, the *Hindenburg* was carrying a crew of sixty-one plus ninety-seven passengers. The passengers had paid $400, a great deal of money in those days, for the three-day trip. Their $400 let them travel in great comfort and luxury. Dinner included such delicacies as lobster. The list of wines the *Hindenburg* carried was more than a page long. No possible item for the passengers' comfort or safety had been overlooked.

Passengers had to give up their own matches and cigarettes when they came aboard the airship. The *Hindenburg's* great silver gasbag was filled with hydrogen, a highly flammable gas. The crew was taking no chances. To prevent accidental fire, smoking was permitted only in one completely fireproof room. Metal ladders and railings were encased in rubber to prevent sparks. These precautions resulted in an enviable safety record. No accident had occurred in fourteen years of commercial dirigible flights.

This flight had started without a hitch. The *Hindenburg* was, however, several hours behind schedule after bucking strong headwinds over the Atlantic. In addition, mooring (tying the airship to a mast) was being delayed by heavy rain. Despite weather conditions, the *Hindenburg* had already passed over New York City and was approaching Lakehurst, about sixty miles from New York City. The *Hindenburg* had tied up at Lakehurst on all previous flights to the United States, and the navy was waiting for it on this trip. Dozens of marines and sailors were on hand to pull in the mooring lines let down from the zeppelin. These long ropes would hold it down until its nose could be secured to the mooring mast.

As the airship settled gracefully to the ground, the Lakehurst crew moved forward. Waiting behind them were more than a thousand spectators who had come, despite the rain, to watch the *Hindenburg* moor. The crowd included newspaper and movie photographers, reporters and the friends and relatives of arriving passengers. They all watched the airship float down like a feather.

Boom!

There was a dull explosion and a flash of light from near the *Hindenburg's* tail. In seconds, the airship had become a great, flaming torch. The great black swastikas on its tail disappeared in flames. The flaming zeppelin slowly settled to the ground. Members of the

ground crew scrambled for their lives. Flaming pieces of the *Hindenburg's* fabric covering fluttered to the ground among the navy men still below the dirigible as it continued its descent.

One passenger, Joseph Spahs, an acrobat, leaped to the ground from an open window. He landed unburned and completely unhurt. Other passengers and crew members also leaped from the flaming dirigible and lived. Some, however, were killed by the fall. Others survived the jump only to die later from burns suffered before they leaped.

Sailors and marines who had fled from the downward path of the fiery dirigible returned heroically to the airship to pull people from the flaming wreckage. These sailors and marines are credited with saving many lives. One passenger, his clothes completely burned off, was met by the navy men as he walked away from the flames. "I'm completely all right," he said. Then he dropped dead.

The *Hindenburg's* two captains, Ernst Lehmann and Max Pruss, were the last to jump from the flaming wreckage. The *Hindenburg* had had two captains on its fateful trip. Captain Lehmann had commanded the airship on its first voyages. Captain Pruss was in command during this last flight. The hair and clothing of both men were aflame as they left the dirigible's control car. Captain Pruss, though badly burned, lived. Captain Lehmann was not as lucky. Lehmann had been a dirigible pioneer. He had commanded the German zeppelins that had bombed London during the first World War. Now, the terribly burned Lehmann kept repeating, "I shall live. I shall live."

Despite his statement, Captain Lehmann died within twenty-four hours. The captain did live long enough, however, to offer his view that the explosion had been caused by sabotage—by a deliberately placed bomb.

People still speculate about the cause of the explosion. The official explanation of the Zeppelin Transport Company, which operated the airship, is that static electricity caused by the rainstorm ignited the explosive hydrogen.

One member of the United States ground crew had a different explanation. He saw a ripple—a sort of flutter—in the fabric near the *Hindenburg's* tail. That flutter may have been caused by escaping hydrogen gas as it passed over the zeppelin's skin. Then, when the engines were thrown into reverse to assist in the landing, sparks were thrown off. Several observers saw sparks that could easily have ignited the flammable gas.

What really caused the explosion? Was it escaping hydrogen? Sabotage? Static electricity? We will probably never know the truth. One terrible truth is known; the end of the *Hindenburg* brought an end to the lives of thirty-six people. It also brought to an end the age of the giant dirigibles. ■

Find out your reading time and enter it on the SCORECARD. Then turn to page 156 and look up your reading speed. Write the Words per Minute on the SCORECARD.

Now go on to the exercises in "How Well Did You Read?" Use the SCORECARD to record your critical reading scores. When the SCORECARD is full, transfer your Words per Minute and Critical Reading Score to the graphs on pages 158 and 159.

Take to the Hills! The Johnstown Dam Is Going!

Read this article well enough so that you can answer questions about it. Your teacher may want you to keep track of your reading time. If so, write your reading time on the SCORECARD on page 53 after you finish the article.

Then answer the questions about the article to find out how well you understood what you read. These questions will help you sharpen your reading and thinking skills.

The rider galloped at top speed down the hill and on into the valley, through the pouring rain. "The dam is going!" A few residents of Johnstown, Pennsylvania, took the rider's advice—and lived. Thousands of people, however, either never got the rider's message or chose to disregard it. Many of those who didn't heed the warning paid with their lives.

The citizens of Johnstown in 1889 had good reason for ignoring the advice. Once a year the old South Fork Dam seemed about to burst. The cry, "Take to the hills," had become an annual false alarm.

This time, however, the rider who carried the warning should have been taken in earnest. The rider was John G. Parke, a civil engineer who was in charge of the dam.

The Great South Fork Dam was a huge earthen dike holding the waters of an artificial lake. The dam had been constructed without any stone or cement. It had been built by piling layer upon layer of soil, until the dam was 100 feet high. It was 90 feet wide at the base.

The dam had passed through the hands of a series of owners. In recent years the dam and the lake behind it had been bought by a group of millionaires. The millionaires called themselves the Great South Fork Fishing and Hunting Club. They spent thousands of dollars stocking the lake with fish. They also added screens to prevent the fish from getting out through the dam's drainage holes.

Fishing was good and the lake had never been higher than that spring of 1889. May had been an unusually rainy month. The streets in the lower parts of Johnstown were already flooded with six feet of water. Behind the dam, the lake had been rising at the rate of one foot per hour. The owners of the fishing club sent workers to pile more dirt on top of the dam to keep it from overflowing. The owners also ordered the workers to remove the screens which had become jammed with fish, sticks and other debris. The workers tried hard to clear the jam, but John Parke's trained engineer's eye could see that their efforts would be useless. Parke saddled a horse and began his Paul Revere ride through the valley.

The rain continued to pour. At noon, the water washed over the top of the dam. Almost immediately a big notch developed in the top of the dike. Then, according to witnesses, the whole dam simply disappeared. One minute there was a dam—the next minute, nothing. The lake moved into the valley like a living thing. In little more than half an hour, the dam emptied completely, sending 4.5 *billion* gallons of water down the valley toward Johnstown. A wave of water reaching 125 feet high raced toward the city, leaping forward at the rate of 22 feet per second.

The huge wall of water approached East Conemaugh, a suburb of Johnstown. As it did, railroad engineer John Hess looked up from the string of freight cars his locomotive was pushing. He saw the water bearing down on him, now moving at fifty miles per hour. Hess moved the locomotive's throttle to wide open. Still

pushing a string of freight cars before him, he raced the advancing flood into East Conemaugh. Hess tied down the locomotive's whistle and its screaming blast preceded the train into the village. Johnstown was a railroad city. People in the whole Johnstown area knew that a tied-down whistle could only mean a disaster. And the already flooded streets told them what kind of disaster it was. Many people who had ignored earlier warnings now headed for the hills. Unable to reach the center of Johnstown, Railroader Hess jumped from the locomotive cab in East Conemaugh, ran into his house, and roused his family. The Hesses made their way up the side of a hill just before the flood hit the village.

As the great tumbling hill of water roared on toward the center of Johnstown, it ran into the East Conemaugh rail yard. In the yard was a roundhouse containing thirty-seven locomotives. The onrushing flood swept away both roundhouse and engines. The rush of waters was so forceful that it carried the locomotives, weighing forty tons each, on top of the flood.

The rolling mountain of water, now filled with locomotives, freight cars, houses, trees, horses and humans, rushed on. A great cloud of dust and moisture rolled before the racing flood waters. The dust cloud was so heavy that many residents of Johnstown never saw the rolling flood waters behind it. The cloud was quickly named the *death mist.*

The mountain of water continued its headlong rush. Just before it reached Johnstown, it destroyed the Gautier Wire Works. The buildings of the wire works and its hundreds of miles of flesh-piercing barbed wire were added to the swirling debris.

The giant rolling hill of water rushed into the heart of Johnstown. The flood swept into two distinct parts like the arms of the letter *Y*. One arm of the flood roared through the residential part of town. Churches, schools and houses gave way before its power; 800 homes were flushed away.

The second arm of the flood, a tumbling mass of houses, trains, people and animals, swept up to a stone bridge that spanned the valley. The debris caught in the bridge's stone arches and became wedged there. A collection of hundreds of parts of buildings and thousands of people became hopelessly bound in coils of barbed wire. The water formed a great swirling whirlpool behind them. Hundreds of additional people had approached the whirlpool on makeshif rafts made from pieces of wreckage. Th leaped onto the swirling debris, joining the people already trapped there.

Now a new horror broke out. Many stoves, their fires still burning, floated into and ignited the mass of debris. People on the bridge overhead and on nearby shore managed to rescue some people by reaching for them with long poles and ropes. Thousands of victims found themselves trapped between the still rising water and the flames. Some accounts of the flood claim that 200 victims committed suicide by deliberate jumping into the flames. They were ju few of the 2,000 to 7,000 people believe to have lost their lives at Johnstown.

A week after the flood, a demolitions expert placed nine fifty-pound cases of dynamite in the debris and cleared the jam. The waters were free to pass unde the bridge and continue the seventy-five mile trip down the valley to Pittsburgh. The people of that city made an astonis ing find. The flood waters had carried a piece of wooden flooring from Johnsto to Pittsburgh. On that bit of wreckage, completely unhurt by the wild ride, wa healthy five-month-old baby. ■

Death of the Unsinkable *Titanic*

Read this article well enough so that you can answer questions about it. Your teacher may want you to keep track of your reading time. If so, write your reading time on the SCORECARD on page 61 after you finish the article.

Then answer the questions about the article to find out how well you understood what you read. These questions will help you sharpen your reading and thinking skills.

"The safest ship afloat. A sea-going hotel! Unsinkable!" These were the words the newspapers used in writing about the *Titanic*, the largest ship ever built.

The year was 1912. The *Titanic* was on its first trip. It was sailing from Southampton, England, to New York City. It was captained by E. C. Smith, a veteran of many years of transatlantic service. Smith wanted to prove that the *Titanic* was not only the world's most luxurious ship, but the fastest as well. Smith held the *Titanic* to twenty-two knots for most of the voyage.

The *Titanic* carried the very latest in wireless equipment. It received messages from two nearby ships. They warned that they had seen many icebergs. In spite of the warnings, the *Titanic* continued at twenty-two knots.

Lookout Fred Fleet peered ahead from his position high up on the mast. He could see a huge bulk looming in the *Titanic*'s path. Iceberg! Fleet struck three bells—the signal for something dead ahead. First Officer Murdoch, on watch on the bridge, ordered *hard-a-starboard.* Almost at the same instant, Murdoch signaled the engine room to stop. The *Titanic* turned to one side, seeming to take forever. Too late! With a long, grinding sound, the *Titanic* scraped along the side of the berg. The passengers felt almost no shock. The blow was a glancing one; it was almost a near miss. Pieces of ice rained down on one of the *Titanic*'s decks. The passengers, in a holiday mood, felt no sense of danger. After all, everyone knew the *Titanic* was unsinkable. Besides, the crash had been a mere scrape. Card players continued their games. Some passengers sent waiters to pick up chunks of ice from the deck. They used the ice to cool their drinks.

Down in the engine room, the crew could see that the *Titanic*'s hurt was serious. The berg had ripped a long, jagged gash below the vessel's waterline. The sea was pouring in.

The *Titanic* had compartments that divided it into sections from bow to stern. It had been designed so that if any compartment were holed, watertight doors could shut off that section. The undamaged compartments would be more than enough to keep the ship afloat. If the *Titanic* had struck the iceberg head on, damage would have been much less. At worst, the bow and the first couple of watertight compartments would have been damaged. When the *Titanic* turned to avoid the berg, however, its hull scraped along the berg. A jagged underwater spur of ice had slashed a three-hundred foot long wound in the *Titanic*'s side. Water was pouring into too many of the watertight sections.

In ten minutes, the water in the forward part of the ship was eight feet deep. Though the ship's pumps had been started up, they were of little help. Below in the firerooms, half-naked, sweaty stokers shoveled coal. They fed the great furnaces of the *Titanic*'s boilers. Those boilers supplied power for the pumps, and provided electricity for the lights and the wireless.

The engineers and stokers were fighting a losing battle. Water was flooding in much too fast for the pumps. Slowly, the engine room crew retreated before the advancing water. Many of the boilers were flooded out. Enough, however, kept working to furnish electricity for the lights and the wireless.

The *Carpathia*, hours away, heard the *Titanic*'s SOS. The *Carpathia* doubled the number of stokers feeding its furnaces. It sent a wireless message to the *Titanic*: "Coming hard."

The *Titanic*'s captain gave the order to abandon ship. The old rule of the sea—women and children first—had been sounded. Not many passengers responded to it. People simply would not believe that the *Titanic*, with its double bottom and watertight compartments, could sink. Many women refused to be parted from their husbands. The first lifeboats pulled away from the ship only half filled.

The sinking *Titanic* was bathed in the glow of distress rockets that it fired every few minutes. Passengers began to understand that the impossible was actually happening. The *Titanic* was going down. Now the boats were more heavily loaded. People began to realize there would be not nearly enough room in the boats for all of them. They began to panic.

Now the *Titanic*'s bow was deep under the water. Its stern rose in the air. Finally, its screws—those gigantic propellers that had driven it toward a new speed record and toward disaster—were swinging up. Finally, they were completely clear of the water.

People in the lifeboats could see, by the glare of the *Titanic*'s lights, the hundreds of passengers left to their fate aboard the ship. The occupants of the boats watched with a grim fascination. They could see their doomed husbands, relatives and friends aboard the now rapidly sinking ship. With a final great shudder, the *Titanic* stood on end. Then it plunged beneath the sea.

The lifeboats had pulled away from the *Titanic*. They wanted to avoid being pulled down with it in the suction of the sinking ship. Now the people in the boats assessed the spot they were in. The *Titanic* had been carrying over 2,200 passengers. The lifeboats had a capacity of 1,178. However, in the confusion and in the disbelief that the ship would sink, only 711 people had secured places in the boats.

Some passengers had jumped into the sea just before the *Titanic* went under. Some other people had gone down with the ship only to be belched to the surface in giant bubbles. These people swam toward the boats. Now a new panic broke out among the passengers and crew members in the lifeboats. The passengers in the boats became afraid that the people in the water would capsize the tiny craft. Rowers beat off the exhausted swimmers with oars.

Twenty minutes after the *Titanic* had slid under the sea, the *Carpathia* arrived on the scene in response to the *Titanic*'s SOS. The *Carpathia*'s searchlight probed the night expecting to find the great ship. But the beams of light picked up only small boats—some all but empty—bobbing about on the sea. The unsinkable *Titanic* had carried over 1,500 people with it to a watery grave. The *Carpathia* took the 711 survivors aboard. Then it headed for New York at its best speed. ■

Find out your reading time and enter it on the SCORECARD. Then turn to page 156 and look up your reading speed. Write the Words per Minute on the SCORECARD.

Now go on to the exercises in "How Well Did You Read?" Use the SCORECARD to record your critical reading scores. When the SCORECARD is full, transfer your Words per Minute and Critical Reading Score to the graphs on pages 158 and 159.

Galveston: The City That Drowned

Read this article well enough so that you can answer questions about it. Your teacher may want you to keep track of your reading time. If so, write your reading time on the SCORECARD on page 67 after you finish the article.

Then answer the questions about the article to find out how well you understood what you read. These questions will help you sharpen your reading and thinking skills.

It was the sea that had made Galveston, Texas, a great city at the turn of this century. And it was the sea that made it the scene of the greatest natural disaster in United States history. The island of Galveston, in 1900, was the fastest growing port in the country. Galveston owed its prosperity to its location on the Gulf of Mexico. Dozens of steamship lines maintained piers and offices in the city. The island had become a shore resort. Texas millionaires had built magnificent houses along the beach.

The people of Galveston were so busy making money and building their city that they didn't have time to worry about danger from the sea. Their island city had been built on a sandbar that was only a mile wide at its narrowest point. The average height of the land was only nine feet above sea level.

In September, 1900, the Weather Bureau had been tracking a hurricane for several days. The hurricane had started in the West Indies and was moving northwest toward Texas. A few worried people called the Weather Bureau. The Director of Galveston's Weather Bureau, Dr. Isaac M. Cline, advised callers to leave the island.

The storm was now four days old. Its winds had reached the speed of 125 miles per hour. The Gulf of Mexico began to boil. The surf became unusually high. All electricity was out. The bridges connecting the island with the mainland had gone down before the onslaught of wind and water. The entire city was under water. The people of Galveston were trapped; there was no escape. Many gathered in a tall hotel in the center of town. The water level continued to rise. At one point the sea rose four feet in four seconds. High tide came in twenty feet above normal—in a city only nine feet above sea level.

Weather Bureau chief Cline's own house caved in, and his wife drowned. Dr. Cline, his youngest child and his brother were swept out to sea. They whirled about in the swirling waters till an incoming tide washed them ashore, still alive, on a Galveston beach.

A journalist from the nearby city of Houston described the disaster for his newspaper. He wrote, "...streets were submerged to a depth of ten feet. To leave a house was to drown. To remain was to court death in the wreckage." The reporter described scenes of death and destruction at schools, orphan asylums, hospitals and old people's homes. Bruised and bleeding women carrying the lifeless bodies of children were an all-too-common sight.

A Catholic orphanage operated by the Sisters of Charity stood directly in the hurricane's path. The sisters, knowing that the orphanage would be washed away, tied the children to them. The moment the waters went down, would-be rescuers arrived at the orphanage. They found that more than 100 of the children and all the nuns had perished. The small bodies of the orphans were found tied together in groups of eight. Each group was tied to a rope passed around a dead nun's waist.

Rescue efforts got underway as soon as the waters started to recede. The work was hampered by an intense spell of hot weather. The heat made the already unbearable suffering even more horrible. There was the danger that the already swollen bodies would breed an epidemic. The corpses of 6,000 people and countless animals had to be disposed of. The saturated ground couldn't be used for graves.

Then catastrophe followed catastrophe, each more macabre than the one before. Looters came out to rob the dead of jewelry and money. When a dead person's finger was too swollen to remove a ring, the looters hacked off the finger. One looter was found with twenty-three severed fingers.

The desperate city authorities had hundreds of corpses hauled out to sea for burial. When the tide shifted, however, the bodies washed back to the city's beaches. Corpses were gathered and ignited in huge funeral pyres.

The sheer horror of the catastrophe caused many of the citizens of Galveston to leave the city. Most residents, however, stayed in Galveston and resolved never to let such a tragedy strike again. There was no way they could prevent hurricane winds. But they could do something about the floods stirred up by those winds. They built a huge stone seawall to protect the city from the waters of the gulf.

The people of Galveston quickly rebuilt their city behind the new seawall. In 1915, almost exactly on the fifteenth anniversary of the great horror, another powerful hurricane struck Galveston. This time, the city's seawall protected it from the full force of the waves. The second hurricane did claim 275 lives. The city, however, was spared most of the horror of 1900. ■

Black Death: The End of the World

Read this article well enough so that you can answer questions about it. Your teacher may want you to keep track of your reading time. If so, write your reading time on the SCORECARD on page 105 after you finish the article.

Then answer the questions about the article to find out how well you understood what you read. These questions will help you sharpen your reading and thinking skills.

"Bring out your dead! Bring out your dead!" the driver cried as the horse-drawn carts rumbled through the streets of Europe in the 1300s. Bodies were dragged from almost every house and thrown onto the carts. Corpse was tossed on top of corpse until they were like logs in a pile of firewood. Sometimes several bodies were carried out of the same house. The Black Death had struck! One person in every three would die of the plague before it ran its course.

The Black Death was the worst calamity of all times, wiping out the entire populations of some villages. In the large city of Smolensk, Russia, only five people survived the plague. Nine out of every ten citizens of London fell victim to the Black Death. Virtually the entire populations of Iceland and Cyprus were wiped out.

So many people were struck down by the plague, that the supply of coffins was soon exhausted, and the dead were carried on wooden planks to huge mass-burial pits. Corpses were piled several high, and then a thin layer of dirt was shoveled over them. Often the burials took place with no member of the family or clergy present. As people fled before the spreading plague, spouse abandoned spouse, and parents forsook children.

The plague spread quickly from person to person. People went to bed well and were dead by morning. A doctor might arrive at a home to treat a victim only to catch the plague and die before the original sufferer.

The Black Death derived its name from the color of the victim's skin in death; a person who was infected always died within three days, skin covered by black patches. There were other symptoms too. Patients developed egg-size swellings in the groin and arm pits. Sometimes victims also coughed and sweated violently.

The first people to know the horror of the Black Death were the Chinese, who were hit by the plague earlier in the fourteenth century. The disease quickly spread to the Tartars, a people originally from the area where the present-day borders of China and the Soviet Union meet. The Tartars, under their great leader Kipchak Janiberg, had fought their way westward across Russia. They had conquered all the Russian lands as far into Europe as the Black Sea—but they carried the plague with them.

The Tartar advance had been halted by a trading colony of Italians located in a city on the Black Sea. As more and more of Kipchak's Tartars became victims of the Black Death, he began to realize that the Italian city would never fall to him. Kipchak's troops had brought huge *catapults*, devices like giant slingshots, with them. The Tartars used them for throwing huge stones against the stone walls of forts. Kipchak had the catapults loaded with the bodies of Tartars who had died of the Black Death. The corpses were thrown over the walls and into the city, where they quickly spread the plague to the Italian colonists.

Both Italians and Tartars abandoned the city. Some of the Italians boarded a galley and rowed to Italy as fast as they could. When the galley arrived at the

Italian port of Messina, the inhabitants of the port found some of the rowers dead and the remainder dying of the plague. The Black Death had come to Italy.

The plague quickly spread throughout Italy and passed on to France. From France, the plague was carried across the English Channel to Great Britain. The cycle of death was completed when the plague spread from Britain to all the rest of Europe, sparing no country. Human survival was threatened. No wonder people said,—and believed—"This is the end of the world."

Many people believed that the plague was caused by the wrath of God. Societies of *flagellants* formed. The societies derived their name from the whips members used to beat themselves and each other. Dressed in sackcloth and ashes, the flagellants moved from town to town, beating themselves with leather whips tipped with metal points.

The flagellation made as much sense as some of the other cures proposed for the plague. The crude science of the fourteenth century gave no idea of either the cause of the Black Death or its cure. Thinkers came up with an idea that combined astrology, geology and superstition. Jupiter and Mars had passed very close to Earth and the proximity of the two planets was believed to have caused cracks in the earth's crust. The cracks, they believed, permitted poisonous fumes from the earth's center to escape and cause the plague.

Since the scientists of the time had no idea of the plague's cause, their "cures" were nearly as horrible as the disease itself. People ate and drank concoctions of blood, goat urine, lizards, toads, and boils that had been dried and powdered. Plague victims were advised to rip open the bodies of puppies and pigeons and hold the torn flesh against their plague boils. While people were vainly trying these cures, the Black Death continued its deadly passage across Europe.

The real cause of the plague had been partially discovered by an Arab physician four hundred years before. The physician had noted that the plague broke out only after rats had come out of their holes to die in the open air. This observation was accurate, but failed to take into account one final piece needed for the puzzle's solution—fleas. The plague germs lived and multiplied in the bodies of fleas. Every rat had hundreds of fleas which lived on rats' blood and infected them with the Black Death. When the rats died of the plague, the fleas jumped onto the nearest people. It was the bite of the fleas that spread the plague germs to their human victims.

There were house rats in every fourteenth-century city, so nobody was spared. The Black Death carried off king and commoner alike. It raged back and forth over Europe, on and off, for 200 years. Then gradually, it died away. (Some people think that the real end of the plague didn't come until the London Fire of 1666. This fire destroyed most of London, along with the rats, fleas and germs that caused the plague.)

Surprisingly, during all the 200 years that the plague circled back and forth across Europe, the cure had been at hand. The germs of the Black Death can be destroyed by the application of soap and water. ■

Penny-Pinching Brings Death at the World's Richest School

Read this article well enough so that you can answer questions about it. Your teacher may want you to keep track of your reading time. If so, write your reading time on the SCORECARD on page 123 after you finish the article.

Then answer the questions about the article to find out how well you understood what you read. These questions will help you sharpen your reading and thinking skills.

People in Texas claimed that the New London Consolidated School was the world's wealthiest school. It was located in the midst of the world's richest oil field. The two-story brick building served pupils from kindergarten through grade twelve. From the school, the students could see a forest of oil wells and derricks. By night, the school was lit by the flare of the extra gas from the wells burning off in the air. This same gas was used to heat the Consolidated School, which had no central heating system. Each of the school's radiators burned the gas known as *wet gas* that came directly from the wells.

The *wet gas* saved the school the $250 to $300 per month it would have cost to heat the school with the regular household gas that many homes use for cooking and heating. *Wet gas*, however, has several serious disadvantages. It is very uneven in composition, so any equipment that uses *wet gas* has to be in perfect running order. Unfortunately, not all the radiators at the Consolidated School were in good order. And, because *wet gas* doesn't have the characteristic smell of regular household gas, its presence is undetectable.

Certainly nobody was aware of the gas building up in every corner of every room of the Consolidated School that late afternoon of March 18, 1937. The school day was already over for almost all the pupils in the elementary grades. Students in grades seven through twelve still had another quarter of an hour of school. It was only by a stroke of bad luck that any students were in school at all. School officials had considered closing school a half hour early so that students could attend a track meet. As it turned out, school was not closed, and 690 students were still in the building when tragedy struck.

At 3:15 P.M., there was a long, rumbling explosion and the New London, Texas, Consolidated School blew up.

The roof lifted, the walls bulged outward, and then, the roof came back down on top of tables, desks, chairs and the students and teachers. A Parent Teacher Association meeting was being held in a gymnasium located about 300 feet from the main part of the school. At the sound of the explosion, the mothers ran toward the main building. The first mothers to rush outside saw bodies flying upward through the air. Then, as the mothers looked on in horror, the bodies fell back into the wreckage of what had once been a school.

There were joyous reunions of the students who had escaped the blast and their mothers. Then, all the mothers attacked the wreckage, clawing at it with their bare hands. Hundreds of workers from the nearby oil fields joined the mothers. They lifted bricks and beams and plaster in response to moans from underneath the wreckage. Then, the rescuers had to slow down their frenzied digging. They were afraid of loosening debris which would drop onto the trapped students.

The rescue work proceeded rapidly but

carefully under huge floodlights set up by the oil field people. A total of 3,000 oil workers used the tools of their trade—acetylene cutting torches and heavy steel cables attached to huge trucks and tractors—to clear away the wreckage. Many of the oil field people were working to rescue their own children. Eighty-five students were freed from the wreckage alive—though two of them died later. Some of the survivors owed their lives to school desks that protected them from falling debris. One student just happened to be bent over, looking for something under her desk, when the roof and walls collapsed. The desk held, allowing rescuers to save her. Another group of survivors owed their lives to a large bookcase that fell against a wall, forming a tunnel that held until rescue workers dug the students out.

One of every three young people of New London, Texas, died in the explosion. There were ninety-two seniors in the graduating high school class. Only one survived. In all, 419 bodies were removed from the school.

The people of New London sought to learn what caused their tragedy, setting up a board of inquiry to sift through the evidence. The board discovered that only one radiator, of the six that survived the blast, was in working order. This led the investigators to conclude that many of the school's radiators had been leaking *wet gas*. A great deal of the gas must have built up in an industrial arts shop. This gas needed only one spark to set it off. That spark came when a shop teacher flicked a wall switch to turn on a machine for a student. (It is not known whether that student was one of those who survived.)

Included in the wreckage of the school was a blackboard on which a teacher had written: *Oil and gas are East Texas's greatest mineral blessings. Without them, this school would not be here and none of us would be learning our lessons.* ■

Italian port of Messina, the inhabitants of the port found some of the rowers dead and the remainder dying of the plague. The Black Death had come to Italy.

The plague quickly spread throughout Italy and passed on to France. From France, the plague was carried across the English Channel to Great Britain. The cycle of death was completed when the plague spread from Britain to all the rest of Europe, sparing no country. Human survival was threatened. No wonder people said,—and believed—"This is the end of the world."

Many people believed that the plague was caused by the wrath of God. Societies of *flagellants* formed. The societies derived their name from the whips members used to beat themselves and each other. Dressed in sackcloth and ashes, the flagellants moved from town to town, beating themselves with leather whips tipped with metal points.

The flagellation made as much sense as some of the other cures proposed for the plague. The crude science of the fourteenth century gave no idea of either the cause of the Black Death or its cure. Thinkers came up with an idea that combined astrology, geology and superstition. Jupiter and Mars had passed very close to Earth and the proximity of the two planets was believed to have caused cracks in the earth's crust. The cracks, they believed, permitted poisonous fumes from the earth's center to escape and cause the plague.

Since the scientists of the time had no idea of the plague's cause, their "cures" were nearly as horrible as the disease itself. People ate and drank concoctions of blood, goat urine, lizards, toads, and boils that had been dried and powdered. Plague victims were advised to rip open the bodies of puppies and pigeons and hold the torn flesh against their plague boils. While people were vainly trying these cures, the Black Death continued its deadly passage across Europe.

The real cause of the plague had been partially discovered by an Arab physician four hundred years before. The physician had noted that the plague broke out only after rats had come out of their holes to die in the open air. This observation was accurate, but failed to take into account one final piece needed for the puzzle's solution—fleas. The plague germs lived and multiplied in the bodies of fleas. Every rat had hundreds of fleas which lived on rats' blood and infected them with the Black Death. When the rats died of the plague, the fleas jumped onto the nearest people. It was the bite of the fleas that spread the plague germs to their human victims.

There were house rats in every fourteenth-century city, so nobody was spared. The Black Death carried off king and commoner alike. It raged back and forth over Europe, on and off, for 200 years. Then gradually, it died away. (Some people think that the real end of the plague didn't come until the London Fire of 1666. This fire destroyed most of London, along with the rats, fleas and germs that caused the plague.)

Surprisingly, during all the 200 years that the plague circled back and forth across Europe, the cure had been at hand. The germs of the Black Death can be destroyed by the application of soap and water. ■