

Comprehension

Genre

Nonfiction gives an account of actual people, situations, or events.



Generate Questions

Make Generalizations

As you read, use your Generalizations Chart.

| Important Information | Generalization |
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Read to Find Out

What makes Leonardo's designs so timeless?



by Jean Fritz
illustrated by Hudson Talbott

LEONARDO'S HORSE



Anyone who watched the young Leonardo wander the countryside around his home in Vinci might have guessed that he would be an artist. He stopped to examine everything. He looked at the landscape as if he were memorizing it. So it was no surprise when his father took him as a young teenager to Florence to study art.

People noticed that Leonardo was different.

He dressed differently. While other young men wore long togas, Leonardo wore short, rose-colored velvet togas.

He wrote differently. Backwards. From the right side of the paper to the left. A person would have to use a mirror to read his writing.





And he wouldn't eat meat. He liked animals too much to eat anything that had once been alive. Nor could he stand the sight of caged birds. If he saw a man selling birds, he would buy them all. Then he would open the cages and watch the birds fly away. What a flurry they made! How did they do it? All his life Leonardo tried to discover their secret of flying so he could make a flying machine for himself.

For a man who liked to ask questions, Leonardo da Vinci was born at the right time—April 15, 1452. Everybody was asking questions then. The age was called the **Renaissance**, a time of rebirth when people who had forgotten how to be curious became curious again. They were exploring new countries, discovering, inventing, looking at old things in new ways. What was the point, Leonardo asked, in copying what had already been done? He had to bring his own experience into whatever he painted. You wouldn't catch him putting a halo around the head of a saint. How could he? He had never seen a halo.

Leonardo da Vinci turned out to be a famous artist; still, he was not just an artist. He could never be just one thing. He was an engineer, an architect, a musician, a **philosopher**, an astronomer. Once he fashioned a special kind of flute made of silver in the shape of a horse's head. The ruler of Florence, Lorenzo de' Medici, asked him to deliver it as a gift to the duke of Milan. This was lucky for Leonardo. He had heard that the duke of Milan wanted to honor his father with a bronze horse in front of his palace. And Leonardo wanted to be the one to make it.

This would be his mark on history. Hundreds of years later people would point to the horse. "Leonardo made that," they would say.



Make Generalizations

Is the statement "Everybody was asking questions then" a valid generalization? Explain your answer.



Parachute

Catapult

So he wrote to the duke, listing all the things that he could do. He could make cannon, lightweight bridges, and covered chariots that couldn't be broken or harmed. On and on he went, but he saved the most important point for the last. He could make a bronze horse. In the end, he didn't send the letter. He simply left for Milan. Never mind that he was in the midst of painting a large religious picture in Florence. Let someone else finish it. He had planned the picture and that was the important part.

Leonardo was thirty years old now, handsome with curly blond hair. The duke gave him the job of working on the horse, but at the same time he was expected to take charge of entertainment in the palace. He had a beautiful singing voice, he could play musical instruments, he could juggle and ask riddles, and he was also asked to stage **elaborate** plays for special occasions. Whenever he had a chance, he went back to the horse.





He visited the stables, studying how a horse was put together.

He needed to understand everything about his subject. He measured and drew pictures until he knew where all the bones and muscles of a horse were. But you couldn't show all the muscles on a statue, he said, or the horse would look like a bag of turnips. You should show only those muscles the horse was using or getting ready to use.

He visited statues of horses. Many were shown in an amble—left front leg moving at the same time as the left back leg. This was not easy for a horse; he had to be taught to do it. Leonardo saw one horse, however, that he described as free—left front leg and right back leg moving together, in a trot. Moreover, both ears were pointed forward. (Some horses pointed one ear back to hear the rider's orders.)

Leonardo was ready to begin.

But the duke wasn't quite ready. He wanted a much bigger horse than the one he had originally planned. One three times larger than life. Could Leonardo manage anything that large? the duke wondered. He wrote to Lorenzo, asking him to **recommend** someone who could do the job.

Lorenzo replied: Leonardo da Vinci was the only one.



On April 23, 1490, Leonardo wrote in his notebook: “I resumed work on the horse.” The hardest part would be the casting. He collected 58,000 pounds of metal—tin and copper—which would be heated until it was fluid. This would be turned into bronze and used to cast the horse. But should he pour the bronze all at once? No one had tried a single pouring of anything this large.

In November 1493, he had completed the clay model—twenty-four feet high. It was shown off at one of the duke’s special occasions, and it was a sensation.

But Leonardo seemed to be in no hurry to start casting. Perhaps he wasn’t sure how he’d do it. Besides, he was planning a new project. He had been **commissioned** to cover the wall of a convent with a picture of Jesus and his disciples at the Last Supper. Since he wanted to present the disciples realistically, each with his own personality, Leonardo walked the streets of Milan, looking for the right faces. He had trouble with Judas. He could never find anyone in Milan who looked evil enough. So he left Judas for someone else to do.

Later, in 1498, there were rumors that the French were preparing to invade Milan, and the duke wanted to be ready. And there was all the metal that Leonardo had collected. Just what the duke needed. So he sent it off to be made into cannon. Well, this is war, Leonardo reasoned. What else could they do?

When the French came in 1499, Leonardo and the duke fled. But the horse couldn’t leave. There he was when the French arrived. The archers laughed. Never would they find as perfect a target, they said. Pulling back the strings on their bows, they let their arrows fly. Ping! Ping! Ping! The horse sagged. Ping!

Then it rained. And the horse became smaller and smaller. At last it was nothing but a pile of mud stuck with arrows.



Make Generalizations

The author states that many statues showed horses in an amble. Is this a valid generalization? Explain.



Leonardo went back to inventing and painting, but he never forgot his horse.

He still wanted to invent a flying machine. But he still couldn't do it.

His greatest disappointment, however, was his horse.

As Leonardo became older, his hair turned white and grew down to his shoulders. His beard reached to his waist.

And he became depressed. What had he achieved? he asked himself. He complained to his notebook: "Tell me," he asked, "if anything has been achieved by me. Tell me. Tell me." It was especially hard when his rival, Michelangelo, taunted him.

"You," Michelangelo said, "who made a model of a horse you could never cast in bronze and which you gave up, to your shame."

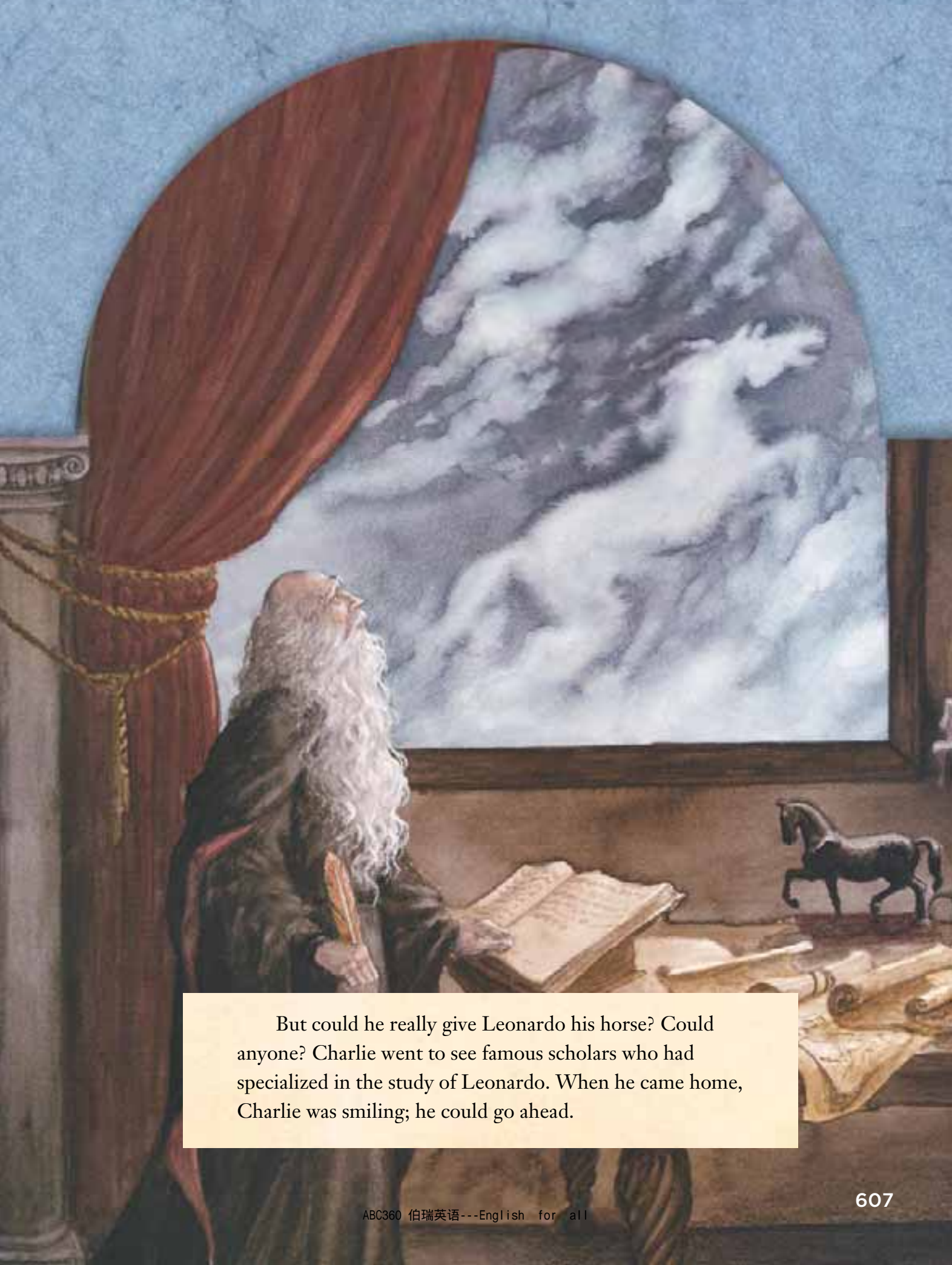
In his notebook Leonardo mourned, "I have wasted my hours."

On May 2, 1519, Leonardo da Vinci died. It was said that even on his deathbed, Leonardo wept for his horse.

Leonardo has been remembered for hundreds of years, especially for his paintings *Mona Lisa* and *The Last Supper*. But not for his horse. That story was almost forgotten until 1977, when it was told in a magazine. And the right man read it. His name was Charles Dent. And Charlie loved art—reading about it, making it, looking at it, collecting it. Leonardo would have liked Charlie. They were both dreamers with big dreams. Yet Leonardo may have been envious. Charlie did what Leonardo had always longed to do. He flew, soaring through the sky like a bird freed from its cage. Charlie was an airline pilot, and whenever he traveled, he looked for art to take home.

The more Charlie read about Leonardo and his horse, the more he cared about Leonardo. When he read that Leonardo died still grieving for his horse, Charlie couldn't stand it. Right then he had the biggest dream of his life.

"Let's give Leonardo his horse," he said. It would be a gift from the American people to the people of Italy.



But could he really give Leonardo his horse? Could anyone? Charlie went to see famous scholars who had specialized in the study of Leonardo. When he came home, Charlie was smiling; he could go ahead.



But where would he build his horse? He needed a special building, he decided—a round building shaped like a dome, tall enough for a horse. On top there would be windows to let in the light.

Charlie didn't know a thing about domes, but luckily he found a man who did. When at last the Dome was finished, Charlie hung the pictures he had collected on the walls and arranged other art objects around the room.

All that was needed was the horse.

Every day Charlie could see the horse more clearly. Wherever he went, he carried a small piece of wax or a piece of clay and made **miniature** models of the horse. But he needed to be around real horses. He borrowed two champion Morgan horses and studied them for months, running his hands over their bodies so he could feel where the muscles and bones were. He measured every inch of the horses just as Leonardo would have done.

Then, in 1988, he began the eight-foot model of the horse. Over the wooden skeleton, he applied one thousand pounds of clay. To hold the horse steady, a post ran through the belly of the horse



to the ground. To fill the belly, the horse was stuffed with slats of wood and Styrofoam. So now the Dome had a clay horse—his left foreleg raised and bent, his right rear leg off the ground. Free. The muscles in his hindquarters were tense, his ears pointed forward, his nostrils were beginning to flare.

By 1993 the eight-foot plaster model of the clay horse was completed and ready to be cast into a twenty-four-foot bronze horse.

For that it would have to be sent to a foundry where it could be enlarged; a twenty-four-foot clay model sculpted; then the twenty-four-foot bronze horse cast.

In 1994, however, the people at the Dome were less concerned about the horse than they were worried about Charlie. He became sick and no one knew what was the matter. Then he was told that he had Lou Gehrig's disease and it could not be cured. He would not be alive when the horse arrived in Milan. All Charlie said was what he always said: He had never been interested in taking credit for the horse; the gift of the horse was a gesture of friendship from the American people to the Italian people, a salute across the centuries to Leonardo.

On December 13, Charlie's family and friends gathered around his bedside and promised him that the horse would be finished.

On Christmas morning 1994, Charlie died.

On August 1, 1995, the horse was ready to go to the foundry. He was hoisted into a van, tied, padded, and driven off for his great adventure.

At the Tallix Foundry in Beacon, New York, his transformation began. He was enlarged and cut up into sixty separate pieces. They were laid against the wall of the foundry while the Dome people gathered to watch the pieces being put together. It was certainly a huge horse, but was it as grand as Charlie had **envisioned**?

The Dome friends walked quietly around the horse. They seemed uneasy.



The horse wasn't right.

Art experts were called in. They shook their heads.

No, the horse wasn't right.

He looked awkward. Out of **proportion**. One of his rear legs appeared to be short. His eyes were not exactly parallel. He needed help.

Fortunately, a talented sculptor from New York City, Nina Akamu, agreed to try to fix him. But when she went to work on the twenty-four-foot horse, she found that the cementlike plaster that covered him resisted change. No matter how hard she tried, she couldn't fix him.

Everyone recognized that there was only one thing to do, but it took a while for anyone to say it out loud. Yet it had to be said. Nina would have to start from scratch and make another horse. For some, the idea of doing away with Charlie's horse was almost more than they could bear, yet they all knew that Charlie would want his horse to be as perfect as possible.

The horse would always be Charlie's dream, but as soon as Nina went to work, he had to become her horse, too. She had studied in Italy for eleven years. Her favorite Renaissance artist was Verrochio, Leonardo's teacher. It was lucky that she was there to carry on with Charlie's dream.

First Nina made an eight-foot clay horse. From it a second eight-foot horse was made of plaster. Using the plaster model as a guide, a twenty-four-foot horse was made in clay.

Everyone went to work to get the horse exactly right. Finally he was ready to be cast in bronze.

FROM CLAY—TO PLASTER—TO BRONZE



8. The box was closed again and molten bronze was poured through a hole in the top to fill the impression left by the plaster mold.



9. After the bronze cooled, the box was opened and out came a bronze piece in the exact shape of the plaster mold.



10. One by one the bronze pieces were welded together, and the horse began to take shape.



5. Each section hardened into a plaster mold.



1. Thin metal pieces called shims were stuck in the clay to divide the horse into sections.

2. Liquid rubber was sprayed onto the horse to make the molds.

3. Each rubber-coated section was removed...

4. ...then filled with plaster.

7. When the mixture hardened, the box was opened and the mold removed.

6. The top and bottom of a box were filled with a mixture of sand and cement. The mold was pressed firmly into the bottom, and the top closed, encasing the mold in the mixture.

7. When the mixture hardened, the box was opened and the mold removed.

8. The box was closed again and molten bronze was poured through a hole in the top to fill the impression left by the plaster mold.

9. After the bronze cooled, the box was opened and out came a bronze piece in the exact shape of the plaster mold.

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But how could such a large bronze sculpture stand on two legs? First they built a steel skeleton inside the body of the horse to support the sides, and then they inserted steel tubes in the two legs. The tubes were bolted to steel anchor plates below the hooves and embedded in concrete.

Finally, the horse was complete. Everyone stood back and looked up at him. They agreed that he was ready for his new home.

If Leonardo had finished his horse, he would only have had to move it from the vineyard where he worked to the front of the duke's palace. Charlie's horse had to cross the ocean to Italy. But he was too big.

So he was cut up into separate pieces, crated, and flown to Milan, where the Tallix people and the Dome people waited to reassemble him. Workers would crawl through a trapdoor in the horse's belly to fasten the pieces together.

He would stand on a pedestal in a small park in front of Milan's famous racetrack, within whinnying distance of the racing stable.

On June 27, 1999, the horse took off.

September 10, 1999, was the date set for the unveiling of the statue, exactly five hundred years to the day since the French invaded Milan and destroyed Leonardo's horse.



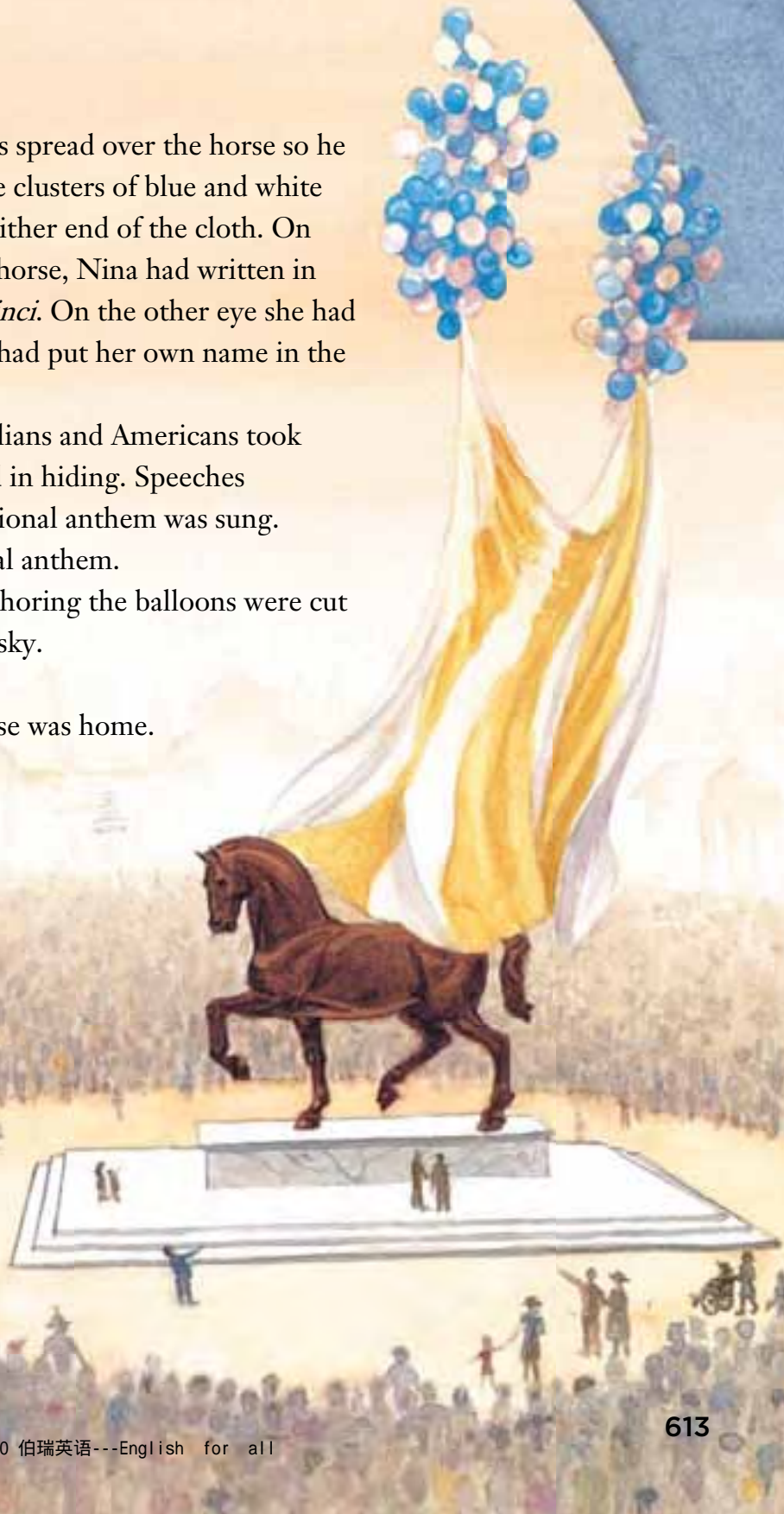
An enormous cloth was spread over the horse so he couldn't be seen. Two huge clusters of blue and white balloons were attached to either end of the cloth. On the pupil of one eye of the horse, Nina had written in tiny letters *Leonardo da Vinci*. On the other eye she had written *Charles Dent*. She had put her own name in the curly mane of the horse.

As a large crowd of Italians and Americans took their seats, the horse stayed in hiding. Speeches were made. The Italian national anthem was sung. Then the American national anthem.

Finally, the strings anchoring the balloons were cut and the cloth rose into the sky.

Ahhhhhhh!

At last Leonardo's horse was home.



Share a Historical Perspective with Jean Fritz and Hudson Talbott



Jean Fritz lived in China until she was 13. “Having to wait to get to America,” she says, “I needed to make up for lost time.” That’s one of the reasons she writes stories about America’s history. When she gets letters from children saying she added the “fun” to history, she says she didn’t add anything. There was as much fun in the past as there is today. One of the most exciting writing adventures she had was going to Italy for the celebration of the bronze horse in this story.

Another book by Jean Fritz: *Can't You Make Them Behave, King George?*



Hudson Talbott's

books have taken him to Africa, England, Ireland, and to the heart of the Amazon rainforest — by dugout canoe! What he loves the most about traveling is sharing his experiences with others.



Find out more about
Jean Fritz and Hudson Talbott at
www.macmillanmh.com

Author's Purpose

What details in the selection suggest that Jean Fritz admires the artists of the Italian Renaissance, particularly Leonardo da Vinci? Explain.



Comprehension Check

Summarize

Summarize the story of *Leonardo's Horse*. Remember to include the most important details and retell them in your own words.

Think and Compare



1. What generalizations can you make about the method used to make the horse— from clay to plaster to bronze? Use your Generalizations Chart. **Generate Questions: Make Generalizations**
2. Do you think Charles Dent and Nina Akamu created the horse that Leonardo had **envisioned**? Use examples from the text. **Analyze**
3. How does the author describe a Renaissance person? Think about the talents and skills you possess today. What more do you think you would need to learn to be called a Renaissance person? **Synthesize**
4. The building of Leonardo's horse was meant to be a gift of friendship from the American people to the Italian people. Can great works of art bring cultures closer together? How? **Evaluate**
5. Read "Artists of the Past" on pages 598-599. What characteristics do Michelangelo, Leonardo da Vinci, and Nina Akamu have in common? **Reading/Writing Across Texts**

| Important Information | Generalization |
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