The Renaissance

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Essential Question

Why do Renaissance ideas affect people's lives today?

About the Photo: Venice is an island city crisscrossed with canals, so its "streets" are actually waterways.

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HISTORY

VIDEOS, including...
- Italy's Rebirth
- Brunelleschi's Dome
- The Printing Press

✅ Document-Based Investigations

✅ Graphic Organizers

✅ Interactive Games

✅ Interactive Map: Major Trading Centers in Renaissance Italy

✅ Image with Hotspots: The Printing Press

✅ Image with Hotpots: The Globe Theater

In this module, you will learn how the Renaissance changed life in Europe. The Renaissance began in Italy's great trading cities like Venice.

What You Will Learn…

Timeline of Events 1271–1600

Module Events	World Events

1200

< 1271 Marco Polo travels to China.

1281 The *kamikaze* saves Japan from a Mongol invasion.

1300

1321 Dante completes *The Divine Comedy.*

1368 The Ming Dynasty begins in China. ∧

1400

∧ c. 1455 Gutenberg develops his printing press.

1453 The Ottomans conquer Constantinople.

1464 Sunni Ali founds the Songhai Empire in West Africa. ∨

1500

∨ 1508–1512 Michelangelo paints the ceiling of the Sistine Chapel.

1594–1595 Shakespeare writes *Romeo and Juliet.*

1600

Reading Social Studies

THEME FOCUS:

Geography, Science and Technology

This module takes you into Italy in the 1300s and 1400s. At that time, scholars, artists, and scientists built on classical Greek and Roman roots to make new advances in science and technology and the arts. You will read how Italy's geographic location, along with the invention of the printing press and the reopening of routes between China and Europe, made the Renaissance a worldwide event with effects far beyond Italy.

READING FOCUS:

Greek and Latin Word Roots

During the Renaissance, scientists and scholars became interested in the history and languages of ancient Greece and Rome. Many of the words we use every day are based on words spoken by people in these ancient civilizations.

Common Roots The charts below list some Greek and Latin roots found in many English words. As you read the charts, try to think of words that include each root. Then think about how the words' meanings are related to their roots.

Common Latin Roots		
Root	**Meaning**	**Sample words**
-aud-	hear	audience, audible
liter-	writing	literature, literary
re-	again	repeat, redo
-script-	write	script, manuscript
sub-	below	submarine, substandard
trans-	across	transport, translate

Common Greek Roots		
Root	**Meaning**	**Sample words**
anti-	against	antifreeze, antiwar
astr-	star	asteroid, astronaut
-chron-	time	chronicle, chronology
dia-	across, between	diagonal, diameter
micr-	small	microfilm, microscope
-phono-	sound	telephone, symphony

You Try It!

Read the following sentences from the module and then answer the questions below.

> 1. In their luggage these scholars carried rare, precious works of <u>literature</u>.
> 2. Among the ideas that Italian scholars wanted to <u>revive</u> were subjects that the Greeks and Romans had studied.
> 3. Later <u>astronomers</u> built on all of these discoveries to lay the foundation for modern astronomy.
> 4. Although the Catholic Church fought strenuously against it, the Bible was eventually <u>translated</u> and printed.
> 5. Also, straight lines, such as on floor tiles, appear <u>diagonal</u>.

Answer the questions about the underlined words. Use the Common Roots charts for help.

1. Which of the underlined words has a root word that means "writing"? How does knowing the root word help you figure out what the word means?
2. What does the root word *astr-* mean? How does that help you figure out the meaning of *astronomers*?
3. In the second sentence, what do you think *revive* means? How could this be related to the root *re-*?
4. What's the root word in *translation?* What does *translation* mean? How is that definition related to the meaning of the root word?
5. What does the word *diagonal* mean? How is that meaning related to the meaning of *dia-*?
6. How many more words can you think of that use the roots in the charts on the previous page? Make a list and share it with your classmates.

As you read this module, be on the lookout for words with Greek and Latin root words like those listed in the chart. Use the chart to help you figure out what words mean.

Origins of the Renaissance

The Big Idea

The growth of wealthy trading cities in Italy led to a new era called the Renaissance.

Main Ideas

- European trade with Asia increased in the 1300s.
- Trade cities in Italy grew wealthy and competed against each other.
- As Florence became a center for arts and learning, the Renaissance began.

Key Terms and People

Marco Polo
interest
Cosimo de' Medici
Renaissance

If YOU were there . . .

You are a historian living in Florence, Italy, in the late 1300s. In your writing you describe the wonders of your city. But the place was very different only about 50 years before. At that time, the Black Death was sweeping through the city. In fact, your own grandfather was killed by the terrible disease. Some 50,000 of the city's other citizens also died from plague. Now, though, Florence is known for its beauty, art, and learning.

How did your city change so quickly?

Trade with Asia

It seems strange that the Black Death could have had any positive results, but that is what happened. You may remember that workers who survived this plague that killed approximately 25 million people in the 1300s could charge more money for their labor. In addition, the disease didn't damage farmland, buildings, ships, machines, or gold. People who survived could use these things to raise more food or make new products. They did just that. Europe's economy began to grow again.

As more goods became available, prices went down. People could buy more of the things they wanted. Trade increased, and new products appeared in the markets. Some of these goods came from India, China, and other lands to the east. How did these items move thousands of miles over high mountains and wide deserts? To learn more, we need to go back in time.

The Silk Road Reopens The Chinese and Romans did business together from about AD 1 to 200. Products moved east and west along the Silk Road. This caravan route started in China and ended at the Mediterranean Sea.

When the Roman Empire and the Han dynasty fell, soldiers no longer protected travelers between Europe and Asia. As a result, use of the Silk Road declined. Then in the 1200s

The Polo family as pictured on a map from the 1300s.

the Mongols took over China. They once again made the roads safer for travelers and traders. Among these traders were a remarkable man from Venice named **Marco Polo** and his family.

Marco Polo's Journeys Look at the map to follow the route of the Polo family's trip. Part of the journey was along the old Silk Road. When the Polos arrived in China, they met with the Mongol emperor Kublai Khan. He invited them to stay in his court and even made Marco Polo a government official.

The Polos saw many amazing things in China. For example, the Chinese used paper money in addition to the coins that Europeans used. The Polos were also fascinated by an unusual fuel source, which Marco Polo later described.

"Throughout this province there is found a sort of black stone, which they dig out of the mountains, where it runs in veins. When lighted, it burns like charcoal, and retains the fire much better than wood."

–Marco Polo, from *The Travels of Marco Polo the Venetian*

This is the first known description of coal by a European.

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Routes of Marco Polo, 1271–1295

Interpret Maps

1. **Location** From what city did Marco Polo begin his journey?

2. **Movement** How was his route to China different from his return route?

Marco Polo 1254–1324

Marco Polo was one of the greatest travelers in history. He went from Europe to China and spent 20 years living, working, and traveling in Asia. When he returned to Venice, his friends and family didn't even recognize him. They thought he had been dead for many years.

Draw Conclusions
Why might Marco Polo's friends and family have thought he had been dead for many years?

Reading Check
Find Main Ideas
What ancient trade route did the Polos travel?

While his father and uncle stayed in China, Marco Polo visited India and Southeast Asia. He traveled as a messenger for the Mongol emperor. Marco Polo spent 20 years living and traveling in Asia.

Eventually, the Polos returned to Italy. There, a writer helped Marco Polo record his journey. At the time, many people didn't believe Polo's stories. Some people thought he had never set foot in China! Over the years his reputation grew, however. Polo's description made many Europeans curious about Asia. As their curiosity grew, people began to demand goods from Asia. Trade between Asia and Europe increased. Italian merchants organized much of this trade.

Trade Cities in Italy

By the 1300s, four northern Italian cities had become trading centers—Florence, Genoa (JEN-uh-wuh), Milan (muh-LAHN), and Venice. These cities bustled with activity. Shoppers there could buy beautiful things from Asia. Residents could meet strangers from faraway places and hear many languages on the streets.

Ports and Manufacturing Centers Italian cities played very important roles in trade. One role was as ports on the Mediterranean Sea. Venice and Genoa were Italy's main port cities. Merchant ships brought spices and other luxuries from Asia into the cities' harbors. From there, merchants shipped the goods across Europe.

Cities like Venice were well positioned on some trade routes between Asia and Europe. Muslim traders had strong ties with Venetian rulers and merchants. These traders acted as middlemen to help move spices and other goods between Asia and Europe. In fact, Muslim officials often traveled to Venice, and Venetian diplomats were paid well when they traveled to the Middle East.

However, more than goods were exchanged. People from many cultures interacted on these trade routes. The interaction between different cultures naturally exposed people to other ideas. In this way, ideas developed after the Middle Ages would spread as well.

Major Trading Cities in Renaissance Italy

Milan
This castle in Milan was built in the mid-1400s. It shows the wealth and power of Italy's trading cities.

Genoa
Genoa is on the Mediterranean. This location enabled Genoa to become rich through overseas trade.

Venice
Venice is an island city. Like Genoa, Venice grew rich from its overseas trade.

Florence
Florence was a banking and trade center. The city's wealthy leaders beautified the city with impressive buildings and art.

Another role of Italian cities was as manufacturing centers. Cities specialized in certain crafts. Venice produced glass. Workers in Milan made weapons and silk. Florence was a center for weaving wool into cloth. All of this economic activity put more money in merchants' pockets. Some Italian merchant families became incredibly wealthy. Eventually, this wealth would help make Italy the focus of European culture. How did this happen?

Separate States and Rival Rulers In the 1300s, Italy was not a single country. Instead, it was made up of independent states. These states had different forms of government. For example, Venice was a republic, while the pope ruled the Papal States as a monarchy.

In most big Italian cities, a single rich merchant family controlled the government. This type of government was called a *signoria* (seen-yohr-EE-uh). The head of the family, the *signore* (seen-YOHR-ay), ruled the city. Under the *signori*, trade grew in Italy. In fact, the *signori* competed against one another to see whose city could grow richest from trade. They also competed for fame. Each one wanted to be known as powerful, wise, and devoted to his city.

Florence

In the 1300s, trade goods from Asia poured into Europe. Many of those items came through Italian ports. As a result, the merchant families in these cities made money. As the families grew rich and powerful, they wanted everyone to see what their money could buy. Although these factors affected most big Italian cities, one city—Florence—stands out as an example of trade and wealth at this time.

The Medici Family Although Florence's wealth began with the wool trade, banking increased that wealth. Bankers in Florence kept money for merchants from all over Europe. The bankers made money by charging interest. **Interest** is a fee that borrowers pay for the use of someone else's money. This fee is usually a certain percentage of the loan.

The greatest bankers in Florence were the Medici (MED-i-chee) family. In the early 1400s they were Florence's richest family, and by 1434 **Cosimo de' Medici** (KOH-zee-moh day MED-i-chee) ruled the city.

As ruler, Cosimo de' Medici wanted Florence to be the most beautiful city in the world. He hired artists to decorate his palace. He also paid architects to redesign many of Florence's buildings.

Florence

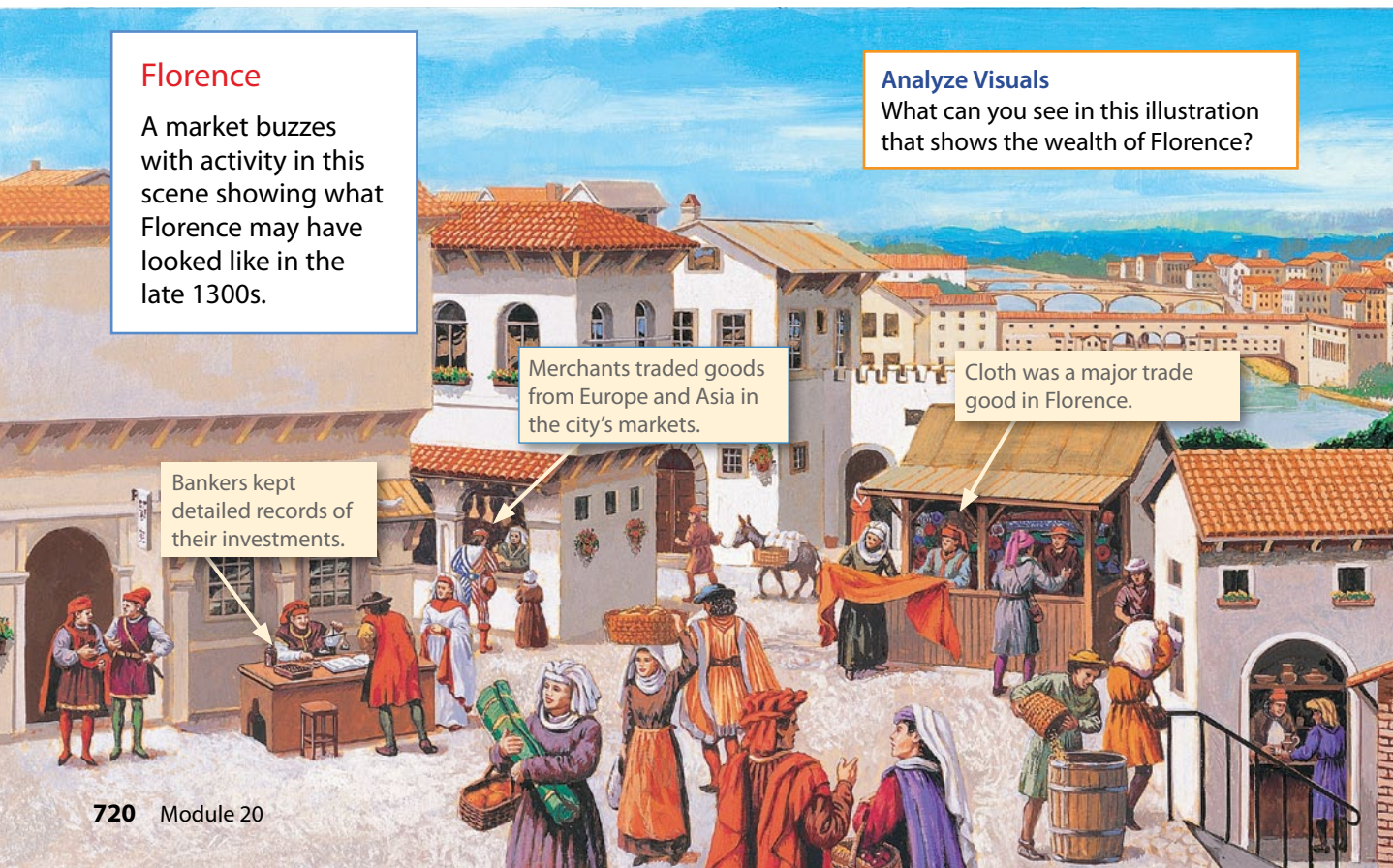A market buzzes with activity in this scene showing what Florence may have looked like in the late 1300s.

Analyze Visuals
What can you see in this illustration that shows the wealth of Florence?

Merchants traded goods from Europe and Asia in the city's markets.

Cloth was a major trade good in Florence.

Bankers kept detailed records of their investments.

Cosimo de' Medici also valued education. After all, his banks needed workers who could read, write, and understand math. To improve education, he also built libraries and collected books.

During the time that the Medici family held power, Florence became the center of Italian art, literature, and culture. In other Italian cities, rich families tried to outdo the Medicis—and each other—in their support of the arts and learning.

Beginning of the Renaissance This love of art and education was a key feature of a time we call the **Renaissance** (REN-uh-sahns). The word *Renaissance* means "rebirth" and refers to the period that followed Europe's Middle Ages.

What was being "reborn"? Interest in Greek and Roman writings was revived. Also new was an emphasis on people as individuals. These ideas were very different from the ideas of the Middle Ages.

Summary and Preview Changes in Italy led to the beginning of an era called the Renaissance. In the next lesson, you'll learn about the Italian Renaissance—its ideas, people, and arts.

Lesson 1 Assessment

Review Ideas, Terms, and People

1. **a. Recall** What road did Marco Polo travel to Asia?

   b. Summarize How did the Polos affect trade with Asia?

2. **a. Identify** What were the four major trade cities of Italy?

   b. Analyze How were these cities important economically?

3. **a. Analyze** How did charging interest lead to the rise of the Medici family and the city-state of Florence?

   b. Draw Conclusions What is one reason why education was important to Cosimo de' Medici?

Critical Thinking

4. **Organize Information** Draw a graphic organizer like this one. Use it to describe the results of increased trade with Asia.
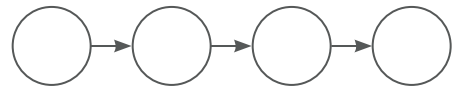
The Italian Renaissance

The Big Idea

New ways of thinking created a rebirth of the arts and learning in Italy.

Main Ideas

- During the Italian Renaissance, people found new ways to see the world.
- Italian writers contributed great works of literature.
- Italian art and artists were among the finest in the world.
- Science and education made advances during this time.

Key Terms and People

humanism
Dante Alighieri
Niccolo Machiavelli
Petrarch
perspective
Michelangelo
Leonardo da Vinci

If YOU were there . . .

You are an apprentice working in the studio of a famous painter. You admire him but think some of his ideas are old-fashioned. Most of the time, your job is to paint the background of the master's pictures. Now, though, you have finished a painting of your own. You are proud of it and want the world to know who made it. But the master says an artist should never put his name on a painting.

Will you sign your painting?

New Ways to See the World

During the Middle Ages, most people in Europe had devoted themselves entirely to Christianity. People looked to the church for answers to problems in their lives, and most of Europe's brilliant and influential thinkers were church figures.

By the late 1300s, however, scholars had begun to study subjects besides religion. They studied history, literature, public speaking, and art, subjects that emphasized the actions and abilities of humans. Together, these subjects are called the humanities. The study of the humanities led to a new way of thinking and learning known as **humanism**.

Humanism and Religion The humanists of the Renaissance were no less religious than people had been before. Like the people of the Middle Ages, they were devout Christians. At the same time, however, people in the Renaissance were interested in ideas besides religion. Medieval thought had mainly focused on Christian beliefs and teachings. Humanists liked to study ancient Greek and Roman writings. They wanted to learn more about ideas like ethics and responsibility, so they could lead honorable and successful lives. Followers of humanism were interested in the positive qualities that make us human.

People's newfound interest in the humanities led them to respect those who could write, create, or speak well. As a result, talented writers and artists won great fame and honor. This too was a great change from the Middle Ages, when most people had worked only to glorify God.

Rediscovering the Past The popularity of the humanities was due in large part to a new interest in ancient history. During the 1300s, Turks had conquered much of the Byzantine Empire. Scholars seeking to escape the Turks fled to Italy. In their luggage they carried rare, precious works of literature.

Many of the works these scholars brought to Italy were ancient **classical** writings, such as works by Greek thinkers. You may remember some of their names—Plato and Thucydides, for example. Europeans had thought many of these ancient writings had been lost. Excited by the return of these great works, scholars then went looking for ancient texts in Latin. They discovered many Latin texts in monasteries, where the monks had preserved works by Roman writers. As Italian scholars read the ancient texts, they rediscovered the glories of Greece and Rome. As a result, they longed for a renewal of classical culture.

Among the ideas that Italian scholars wanted to revive were subjects that the Greeks and Romans had studied. These subjects included grammar, speaking, poetry, history, and the Greek and Latin languages—the humanities.

Rebirth of Classical Ideas

These two statues were carved about 1,500 years apart, yet they share many features. To the left is an ancient Roman statue of the emperor Augustus. To the right is a statue of Moses by the Renaissance artist Michelangelo.

Features of Classical and Renaissance Statues
Both figures are shown in realistic, lifelike poses.
Both statues look as though the subject could start moving at any moment.
Both statues show the human body in great detail.
Both figures wear clothing that appears to drape and fold like real cloth.

Other ancient sources of inspiration for Renaissance artists and architects were all around. Roman ruins still stood in Italy. Fine classical statues were on display, and more were being found every day. Throughout the Renaissance, Italian artists studied these ancient statues. They tried to make their own works look like the works of the Romans and Greeks. In fact, some artists wanted their works to look ancient so badly that they buried their statues in the ground to make them look older!

Italian Writers

Many Italian writers contributed great works of literature to the Renaissance. The earliest was the politician and poet named **Dante Alighieri** (DAHN-tay ahl-eeg-YEH-ree), or simply Dante. Before Dante, most medieval authors had written in Latin, the language of the church. But Dante wrote in Italian, which was the common language of the people. By using Italian, Dante showed that he considered the people's language to be as good as Latin. Later writers continued to use common languages in their works of literature.

Dante's major work was *The Divine Comedy*. It describes an imaginary journey he took through the afterlife. On this journey, Dante meets people from his past as well as great figures from history. In fact, the Roman poet Virgil is one of the guides on the journey. In the course of his writing, Dante described many of the problems he saw in Italian society.

A later Italian writer was also a politician. His name was **Niccolo Machiavelli** (neek-koh-LOH mahk-yah-VEL-lee). In 1513, Machiavelli wrote a short book called *The Prince*. It gave leaders advice on how they should rule.

Machiavelli didn't care about theories or what *should* work. In his writings, he argued that rulers had to focus on the "here and now," not

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DOCUMENT-BASED INVESTIGATION   Historical Source

The Prince

In *The Prince,* Machiavelli offers advice for rulers on how to stay in power. In this famous passage, he explains why in his view it is better for rulers to be feared than to be loved.

"From this arises the question whether it is better to be loved more than feared, or feared more than loved. The reply is, that one ought to be both feared and loved, but as it is difficult for the two to go together, it is much safer to be feared than loved, if one of the two has to be wanting. . . . for love is held by a chain of obligation which, men being selfish, is broken whenever it serves their purpose; but fear is maintained by a dread of punishment which never fails."

–Niccolo Machiavelli, from *The Prince*

Analyze Historical Sources
Do you think that Machiavelli gave good advice in this passage? Why or why not?

theories, to be successful. He was only interested in what really happened in both war and peace. For example, Machiavelli thought that sometimes rulers had to be ruthless to keep order. However, one of his later works seemed to support a republican government in which citizens elect their leaders and representatives. This idea became popular in Florence. Machiavelli's writings serve as a good example of how interest in human behavior affected Renaissance politics and society.

An Italian poet known as **Petrarch** (PEH-trahrk) also had a lot to say about human behavior. He believed that God set humans at the center of that world. Petrarch explored classical thought and Christian teachings. He thought both concepts were connected and could exist together. Some historians believe that humanism would not have developed without Petrarch's ideas.

Italian Art and Music

During the Renaissance, Italian artists and composers created some of the most beautiful artistry in the world. Rich families and church leaders hired artists to create these works. New techniques made their work come alive.

New Methods for a New Era Renaissance ideas about the value of human life are reflected in the art of the time. Artists showed people more realistically than medieval artists had done. Renaissance artists studied the human body and drew what they saw. However, because artists often used classical statues as their guides, many of the human beings they drew were as perfect as Greek gods.

Artists also used a new discovery—**perspective**, a method of showing a three-dimensional scene on a flat surface so that it looks real. Perspective uses various techniques. For example, people in the background are smaller than those in front. Also, straight lines, such as on floor tiles, appear diagonal. Colors could also show distance. So mountains in the background of a picture are a hazy blue.

Great Works In the work of the greatest Italian artists, the people shown are clearly individuals. In this way, the art reflects the Renaissance idea of the value of human beings. For example, the figures in the painting by the artist Raphael have clear personalities.

Sandro Botticelli (bot-ti-CHEL-lee), a painter from Florence, also showed respect for people. Many of his paintings show scenes from Roman myths. But he painted everyone—whether ancient gods, saints, angels, or farmers—in fine detail.

The work of Titian reflects interest in the past. Like Botticelli, he often painted scenes from classical myths. For Venice's churches, though, Titian painted colorful scenes from Christian teachings.

Renaissance ideas also influenced music, which was an important part of religious life. New types of music were composed, or written, for the

Titian's works reflect a variety of subject matter and include portraits, landscapes, and religious scenes. He painted the portrait *Violante*, shown here, in about 1515.
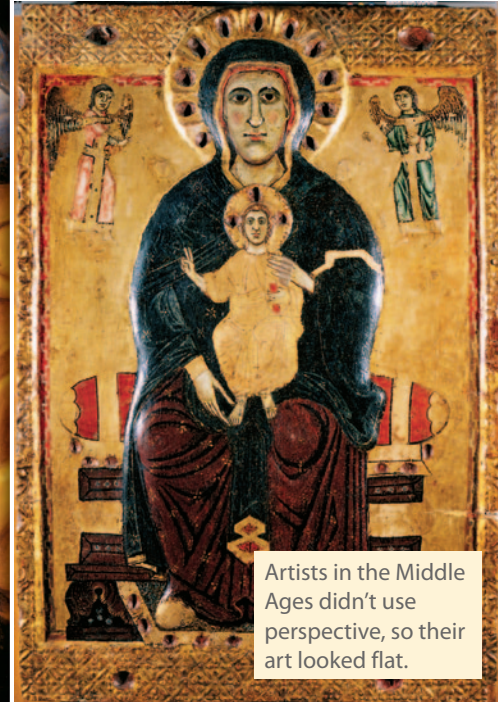
The people in this painting appear larger and have more detail than the mountains in the distance, creating a sense of depth.

Renaissance art was very different from medieval art. Renaissance artists used new techniques to make their paintings more realistic.

Artists in the Middle Ages didn't use perspective, so their art looked flat.

Analyze Visuals
How are these two paintings similar and different?

Church during this time. Giovanni da Palestrina composed many works of church music. Palestrina's pieces were designed for use in a Catholic mass. Some pieces allowed listeners to hear different melodies at the same time.

Italian music also influenced composers in other European nations. Thomas Tallis composed music for the Church of England. His music was similar to Palestrina's in that both used different melodies simultaneously.

The Master Michelangelo Of all the Italian Renaissance artists, two stand above the rest. Each is what we call a Renaissance person—someone who can do practically anything well.

One of the greatest Italian artists was **Michelangelo** (mee-kay-LAHN-jay-loh). He had many talents. Michelangelo designed buildings, wrote poetry, carved sculptures, and painted magnificent pictures. Perhaps his most famous work is a painting that covers the ceiling of the Sistine Chapel in the Vatican. The muscular human figures in this immense painting remind the viewer of Greek or Roman statues.

This painting by Michelangelo decorates part of the ceiling of the Sistine Chapel in Rome.

Michelangelo's amazing work on the ceiling of the Sistine Chapel is not one large painting—it is actually a collection of smaller paintings on plaster panels. These panels show religious imagery from the Bible. For example, some figures represent God and Adam. Another scene shows Noah escaping the epic flood.

Michelangelo also sculpted the *David*. This towering marble statue of the Biblical hero now stands in a museum in Florence. Other artists had shown David in victory over Goliath, but Michelangelo chose to sculpt David before the battle occurs. David appears to be focused, and his muscles are tense. The slingshot with which David beat Goliath is difficult to notice because David carries it over his left shoulder.

Michelangelo created some of the most famous works of art in world history for the Roman Catholic Church. Church officials hired him to decorate churches with his brilliant statues and paintings.
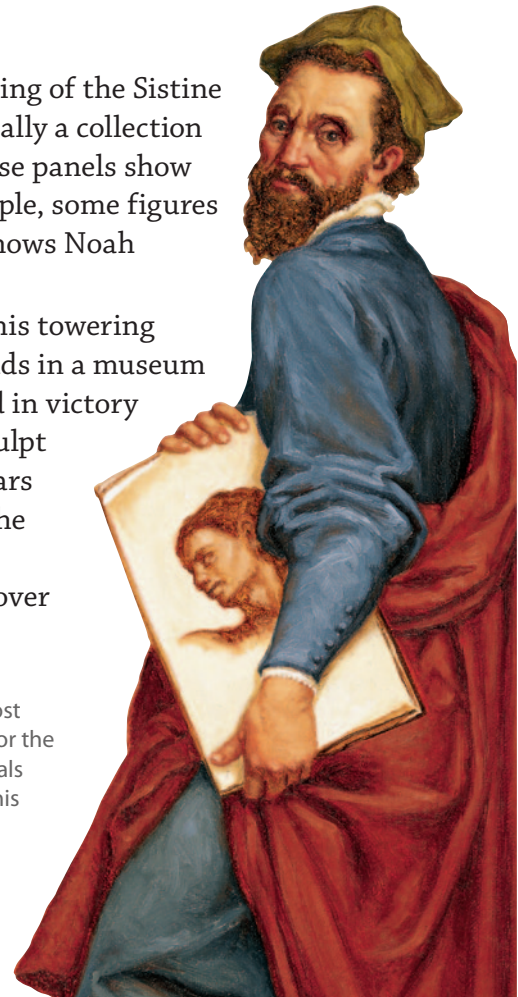
The Genius of Leonardo da Vinci The true genius of the Renaissance was **Leonardo da Vinci**. In fact, some call him the greatest genius that has ever lived. Leonardo was a sculptor, painter, architect, inventor, and engineer. He was even a town planner and map maker.

Like Michelangelo and many artists during the Renaissance, Leonardo created works with religious themes. One of the works Leonardo is known for is *The Last Supper. The Last Supper* is a painting that shows Jesus eating a meal with his apostles.

Leonardo da Vinci's work included many nonreligious subjects as well. Both nature and technology fascinated Leonardo. Detailed drawings of plants, animals, and machines fill his sketchbooks. To make his art more real, Leonardo studied anatomy, or the structure of human bodies. He dissected corpses to see how bones and muscles worked. Yet Leonardo's paintings also show human emotions, which was common during the Renaissance. For example, people who see his *Mona Lisa* can't help wondering what made the lady smile. Some think this smile was Leonardo da Vinci's way of showing the harmony between humanity and the painting's natural background.

Leonardo da Vinci's quest to learn more about anatomy benefited more than just his art. He left an illustrated set of unpublished papers that show what he had learned about the human body. For example, Leonardo found that the heart, not the liver, controlled the flow of blood through the body. He also described medical conditions, including one he called "hardening of the arteries" and another called cirrhosis, a disease of the liver. Leonardo's observations led to further advancements in anatomy and medicine.

Science and Education

There were many advances in fields of science during the Italian Renaissance. One reason for these advances was Europeans could read works by ancient Greek and Roman scientists and build on those ideas.

Islamic scholars had preserved many of these texts through prior centuries. The texts were translated from the original Greek and Latin into Arabic. Italian achievements were in part due to the previous efforts of Islamic scholars in what is now southern Spain. From approximately AD 1000 to 1200, Islamic, Christian, and Jewish scholars in Spain worked closely together to make new discoveries and to translate texts from Arabic into other languages. These scholars of different faiths worked together in a state of peaceful coexistence.

Scholars in Italy and other parts of Europe then had the opportunity to read Greek and Roman texts on many scientific subjects. After reading these works, Italian Renaissance scholars went on to make their own scientific advances.

Mathematics Some scholars thought mathematics could help them understand the universe. They studied ancient math texts and built upon

Leonardo da Vinci's Accomplishments

Leonardo was born in Vinci, a small town near Florence. He showed artistic talent at a young age. But no one could know that Leonardo would become one of the great geniuses of history.
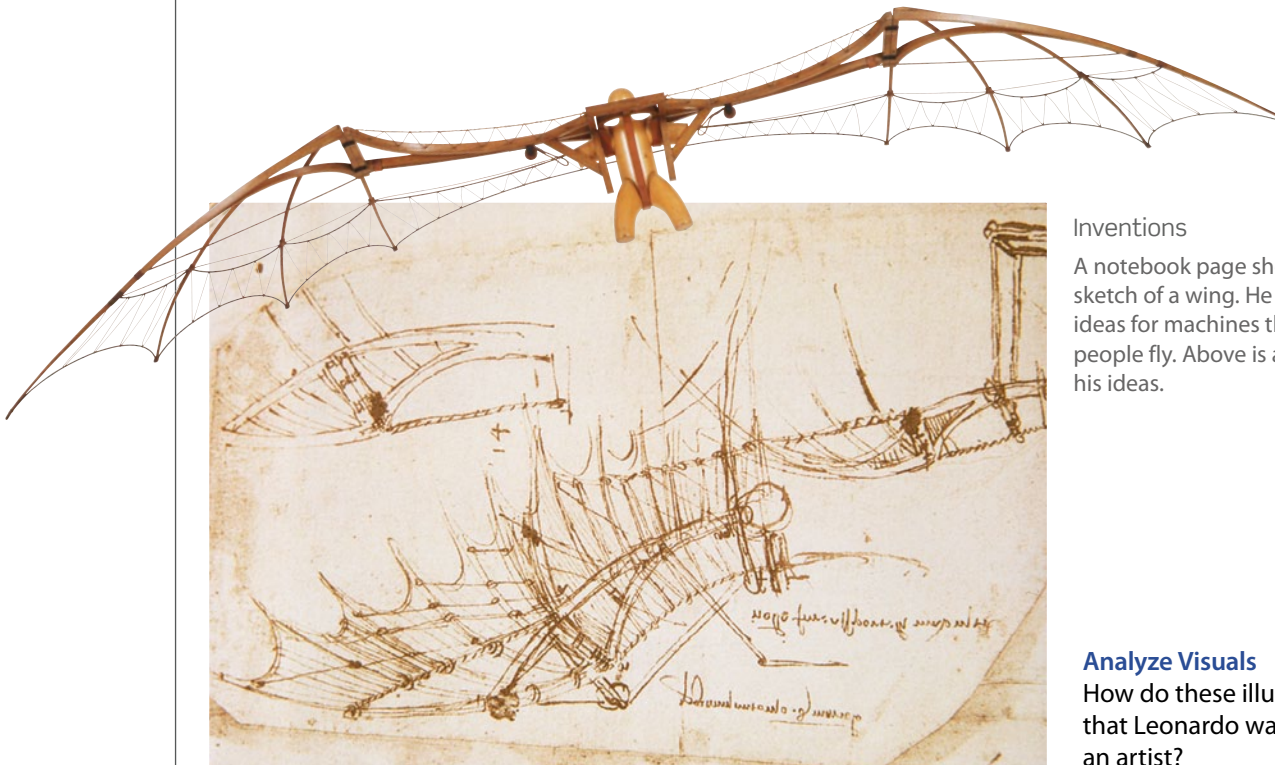
Art

Leonardo was one of the great artists of the Renaissance. His *Mona Lisa* is one of the most famous paintings in the world.

Anatomy Studies

This page from one of Leonardo's notebooks shows how he studied the human body.

Inventions

A notebook page shows Leonardo's sketch of a wing. He sketched many ideas for machines that would let people fly. Above is a model of one of his ideas.

Analyze Visuals
How do these illustrations show that Leonardo was more than just an artist?

the ideas in them. Mathematicians from the Muslim world helped to develop algebra. They also worked with measuring in degrees and creating tables for advanced math like trigonometry. All of this study led to the creation of symbols we still use in math today. For example, scholars created symbols for the square root ($\sqrt{\ }$) and for positive (+) and negative (–) numbers. In turn, Italian scholars used these mathematical ideas to make other scientific advancements.

Engineering and Architecture Advances in math led to advances in other fields of science. For example, engineers and architects used new mathematical formulas to strengthen buildings.

One Renaissance architect who used these new ideas was Filippo Brunelleschi (broo-nayl-LAYS-kee). He designed a huge dome for a cathedral in Florence. But Brunelleschi ran into a problem. The dome that he wanted to build was so big that it would be too heavy for the cathedral's walls to support. To solve the problem, he built the dome out of two thin, light layers instead of one thick, heavy one.

Astronomy and Cartography Renaissance scientists also wanted to know more about the sky and what was in it. They studied astronomy to learn about the sun, stars, and planets.

In the Middle Ages, scientists had thought that the sun and stars revolved around the earth. They thought that the earth was the center of the universe. But Renaissance scientists learned that the earth moves around the sun. Astronomers in Spain theorized about other solar systems with planets that might exist in the universe. Later, Italian astronomers during the Renaissance built on all of these discoveries to lay the foundations for modern astronomy.

Some scholars were less interested in the stars and more curious about the earth itself. They wanted to know the exact size and shape of the earth and its lands. Many thought that the Earth was flat. However, scholars in Spain wrote almanacs based on the idea that the planet was round. Other European scholars later used measurements and calculations made by merchants and sailors to create better, more accurate maps.

Medicine Leonardo da Vinci studied anatomy, but his ideas were based on prior advances in medicine. For example, Muslim scholars, such as Avicenna, changed the way questions about medicine were investigated. These Muslim scholars based their ideas on the even earlier work of Aristotle and other Greek and Roman philosophers.

Changes in Education In time, these changes in literature, art, science, and technology would spread beyond Italy. For these changes to spread, however, required changes in education.

During the Middle Ages, students had concentrated on religious subjects. During the Renaissance, students learned about the humanities

Reading Check

Make Inferences How do you think Renaissance ideas would change as they spread to other countries?

as well. History was one subject that received more attention. Petrarch wrote about the importance of knowing history.

> "O inglorious age! that scorns antiquity, its mother, to whom it owes every noble art. . . . What can be said in defense of men of education who ought not to be ignorant of antiquity [ancient times] and yet are plunged in . . . darkness and delusion?"
>
> —Francesco Petrarch, from a 1366 letter to Boccaccio

Petrarch's ideas would **affect** education for many years to come. Education and new ways of spreading information would take the Renaissance far beyond Italy.

Summary and Preview A great rebirth of art, literature, and learning began in Italy in the late 1300s. In the next lesson, you will learn about how Renaissance ideas changed as they spread across Europe.

Lesson 2 Assessment

Review Ideas, Terms, and People

1. **a. Identify** What are some basic ideas of humanism?
   b. Summarize How did ancient texts and statues affect Renaissance scholars?

2. **a. Recall** What set Dante apart from earlier Italian writers?
   b. Draw Conclusions Why may a historian call Niccolo Machiavelli "the first modern Italian"?

3. **a. Identify** What are three techniques for showing perspective?
   b. Summarize What are some characteristics of the Sistine Chapel and the *David*?
   c. Summarize What features help you to identify the painting *Mona Lisa* as a Renaissance work of art?

   d. Evaluate Which artist would you rather have met in real life—Michelangelo or Leonardo da Vinci? What is the reason for your choice?

4. **a. Categorize** Name one Renaissance achievement in each of these five categories: mathematics, architecture, astronomy, cartography, and medicine.
   b. Summarize How did the choice of school subjects change during the Renaissance?

Critical Thinking

5. **Organize Information** Draw a graphic organizer like the one shown here. Use it to show the societies involved in the transmission of knowledge from the ancient Greeks to the Renaissance.

The Renaissance Beyond Italy

The Big Idea

The Renaissance spread far beyond Italy and changed in the process.

Main Ideas

- Paper, printing, and new universities led to the spread of new ideas.
- The ideas of the Northern Renaissance differed from those of the Italian Renaissance.
- Literature beyond Italy also thrived in the Renaissance.

Key Terms and People

Johann Gutenberg
Christian humanism
Desiderius Erasmus
Albrecht Dürer
Miguel de Cervantes
William Shakespeare

If YOU were there . . .

You are a student from Holland, studying law at the university in Bologna, Italy. Life in Renaissance Italy is so exciting! You've met artists and writers and learned so much about art and literature. You can hardly wait to tell people at home about everything you've learned. But now a lawyer in Bologna has offered you a chance to stay and work in Italy.

Will you stay in Italy or return to Holland?

Spread of New Ideas

Travelers and artists helped spread the Renaissance throughout Europe. But the development of printing was a giant step in spreading ideas. For the first time ever, thousands of people could read books and share ideas about them.
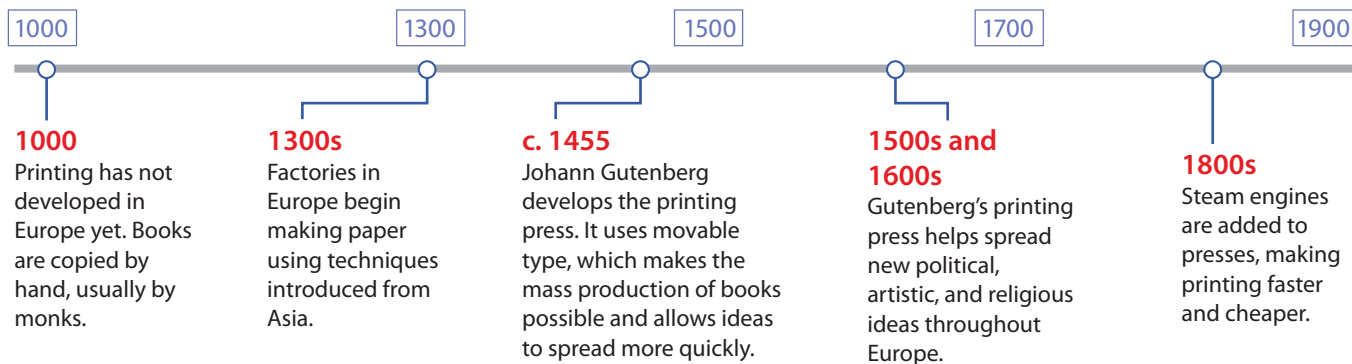
Paper and Printing By the late 700s, papermaking had spread from China to the Middle East. From there it came to Europe. European factories were making paper by the 1300s. Because it was cheaper and easier to prepare, paper soon replaced the animal skins on which people had written before.

Then in the mid-1400s a German man, **Johann Gutenberg** (GOOT-uhn-berk), developed a printing press that used movable type. That is, each letter was a separate piece. A worker could fit letters into a frame, spread ink on the letters, and press a sheet of paper against the letters. In this way, an entire page was printed at once. Then the worker could rearrange letters in the frame to create a new page. How much faster printing was than writing!
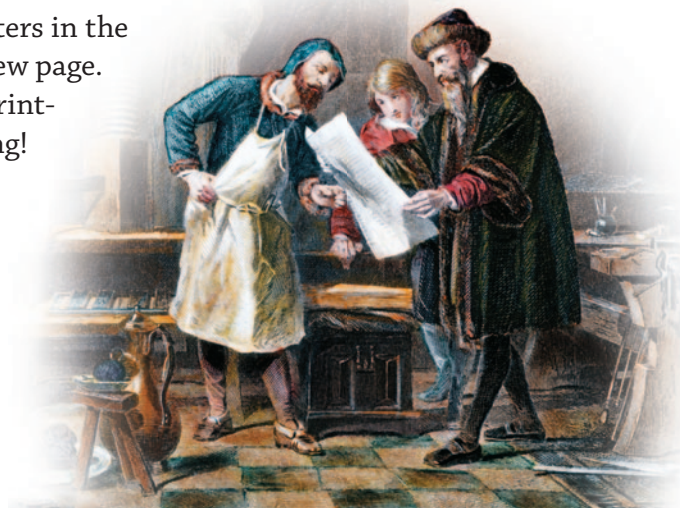
The letters used in movable type are arranged in a frame to make a page. The letters can later be reused for different pages.

Timeline: Printing in Europe

1000	1300	1500	1700	1900

1000
Printing has not developed in Europe yet. Books are copied by hand, usually by monks.

1300s
Factories in Europe begin making paper using techniques introduced from Asia.

c. 1455
Johann Gutenberg develops the printing press. It uses movable type, which makes the mass production of books possible and allows ideas to spread more quickly.

1500s and 1600s
Gutenberg's printing press helps spread new political, artistic, and religious ideas throughout Europe.

1800s
Steam engines are added to presses, making printing faster and cheaper.

> **Interpret Timelines**
> From where was papermaking introduced into Europe?

The first printed book was a Bible printed in the Latin language in about 1455. Soon, some thinkers began to call for the Bible to be translated into common languages. Although the Catholic Church fought strenuously against it, the Bible was eventually translated and printed. Church leaders objected on the grounds that some wording was not accurate. They also did not want people to interpret the Bible on their own without guidance from the Church.

In spite of the Church's objections, Bibles were suddenly available to more people. Because the Bible was available to read, more people learned to read. Then, they wanted more education.

Before the invention of the printing press, books were usually copied by hand, as shown in this illustration.

New Universities Students from around Europe traveled to Italy to study at Italian universities. By the early 1500s, most of the teachers in these universities were humanists. Students from northern Europe who studied with these teachers took Renaissance ideas back with them to their home countries.

Over time, many of the new scholars became teachers in Europe's universities. In addition, new universities opened in France, Germany, and the Netherlands. Because these schools were set up by humanists, Renaissance ideas about the value of people spread throughout Europe.

Although only men could attend universities, women also helped spread these ideas. Many noble families educated their daughters at home. They encouraged young women to study classical literature, philosophy, and the arts. Some educated women became powerful political figures. They married nobles from around Europe and encouraged the spread of Renaissance ideas in their husbands' lands.

Reading Check
Analyze Causes
How did travel and marriage spread Renaissance ideas?

The Northern Renaissance

As humanism spread, scholars in northern Europe became more interested in history. Northern scholars, however, focused not on Greece and Rome but on the history of Christianity. The resulting combination of humanist and religious ideas is called **Christian humanism**.

Many northern scholars felt that the church was corrupt and no longer true to the spirit of Jesus' teachings anymore. They began to call for church reform.

A Northern Scholar A Dutch priest named **Desiderius Erasmus** (des-i-DEER-ee-uhs i-RAZ-mus) was the most important of these scholars. Erasmus believed in the idea that humans had free will. They could choose the path in their lives that would lead them to salvation when they died. However, this did not mean that people could reach salvation without God's help. Humans had the power to decide how they wanted to live, but they still needed God.

In 1509, Erasmus published a book, *The Praise of Folly*, in which he criticized corrupt clergy. He also wanted to get rid of some church rituals that he considered meaningless. Instead of rituals, he emphasized devotion to God and the teachings of Jesus.

Northern Renaissance Art Northern Europeans also changed some Renaissance ideas about art. For one thing, the humans in northern paintings don't look like Greek gods. Instead, they are realistic, with physical flaws.

Northern artists embraced realism in another way, too. They painted objects, from rocks to flowers, so clearly that the objects don't look like they were painted at all. They almost appear to be the real thing, glued to the painting.

Historical Source

The Praise of Folly

Erasmus disagreed with some of the practices of the Catholic Church, including Church officials' desire for money. Folly is the narrator in his text. Her name is also a word that means "behavior that lacks good sense or judgment." Erasmus is criticizing the greed of some friars. The word *frier* can be used as another name for a monk.

Analyze Historical Sources
How would you summarize the relationship between monks and merchants?

"*But the most foolish and basest of all others are our merchants . . . who though they lie by no allowance, swear and forswear, steal, cozen, and cheat, yet shuffle themselves into the first rank, and all because they have Gold Rings on their Fingers. Nor are they without their flattering Friers that admire them and give 'em openly the title of Honorable, in hopes, no doubt to get some small snip of 't themselves.*"

—from *The Praise of Folly* by Desiderius Erasmus

Biblical scenes and classical myths were the traditional subjects of Italian Renaissance art. In contrast, northern artists painted scenes of daily life. For example, consider the painting of hunters returning home. It was painted by Pieter Brueghel (BROY-guhl) the Elder, an artist from what is now Belgium. Some of Brueghel's other paintings show people working in fields, dancing, or eating. His son, called Brueghel the Younger, later used his father's ideas in his own works.

Albrecht Dürer (AWL-brekt DYUR-uhr) was a famous northern artist from Germany. Like Italian artists, Dürer studied anatomy so he could paint people more realistically. Like his fellow northerners, Dürer showed objects in great detail. A lover of nature, Dürer even drew a patch of weeds so clearly that today scientists can identify the plant species.

Northern Renaissance Art

Northern Renaissance artists often painted realistic scenes from daily life, like *Return of the Hunters*, painted by Pieter Brueghel in 1565. Albrecht Dürer created *The Four Horsemen of the Apocalypse,* shown here, in 1597 and 1598. It is a woodcut—a print made from a detailed carving in a block of wood.

Analyze Visuals
What scenes of daily life can you see in Brueghel's painting?

Dürer created religious paintings for churches. But he is most famous for his prints. A print is a work of art reproduced from an original. First, Dürer carved the image into either a metal sheet or a wooden block. Then he covered the image with ink and pressed a sheet of paper down onto it. The image transferred to the paper. Dürer sold his prints at fairs and markets.

Among other great artists of the Northern Renaissance were two portrait painters—Hans Holbein (HAWL-byn) and Jan van Eyck (yahn van YK). Holbein grew up in Switzerland but moved to England. There he painted a portrait of King Henry VIII. Among Jan van Eyck's works are many religious scenes. Van Eyck worked in oil paints, a new invention. The colors in his paintings seem to glow from within.

Don Quixote

In one of the most famous scenes from *Don Quixote*, the confused knight tilts, or charges, at a windmill that he believes to be a fierce giant. Because of this scene, we still use the phrase "tilting at windmills" to describe someone attempting a foolish or impossible task.

Analyze Visuals
How does this scene mock medieval ideas of bravery and knighthood?

Literature Beyond Italy

Writers in other countries besides Italy also included Renaissance ideas in their works. Many were inspired by how different life had become since the Middle Ages.

In Spain, **Miguel de Cervantes** (mee-GEL day ser-VAHN-tays) wrote *Don Quixote* (kee-HOH-tay). In this book, written in Spanish, Cervantes poked fun at romantic tales of the Middle Ages. His main character is an old man who decides to become a knight, a decision that Cervantes mocks.

> "In fine, having quite lost his wits, he fell into one of the strangest conceits that ever entered into the head of any madman; which was, that he thought it expedient and necessary, as well as for the advancement of his own reputation, as for the public good, that he should commence knight-errant, and wander through the world with his horse and arms, in quest of adventures."
>
> —Miguel de Cervantes, from *Don Quixote*, translated by Charles Jarvis

Like many writers of his day, Cervantes thought his own time was much better than the Middle Ages.

In France, too, writers poked fun at the ideas of the Middle Ages. The greatest of these French Renaissance writers was François Rabelais (fran-swah RAB-uh-lay). Like many Renaissance figures, Rabelais was a person of many trades. In addition to being a writer, he was a doctor and a priest. But it is for his writing that he is best known. Rabelais wrote a series of novels about characters named Gargantua and Pantagruel. Through his characters' actions, Rabelais mocks the values of the Middle Ages as well as events that had happened to him in his own life.

Readers around the world consider **William Shakespeare** the greatest writer in the English language. Although he also wrote poems, Shakespeare is most famous for his plays. Shakespeare wrote more than

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BIOGRAPHY

William Shakespeare
1564–1616

Many people consider William Shakespeare the greatest playwright of all time. His plays are still hugely popular around the world. Shakespeare was such an important writer that he even influenced the English language. He invented common phrases such as *fair play* and common words such as *lonely*. In fact, Shakespeare is probably responsible for more than 2,000 English words.

Make Inferences
How do you think Shakespeare invented new words and phrases?

The Globe Theater was home to most of William Shakespeare's plays. The Globe playwrights were often involved in the production of their plays. Shakespeare also acted in some of them.

30 comedies, tragedies, and histories. London audiences of the late 1500s and early 1600s packed the theatre to see them. Ever since, people have enjoyed the beauty of Shakespeare's language and his understanding of humanity. The following passage reflects the Renaissance idea that each human being is important. Shakespeare compares people to the actors in a play who should be watched with great interest.

> "All the world's a stage, And all the men and women merely players: They have their exits and their entrances; And one man in his time plays many parts, His acts being seven ages."
>
> –William Shakespeare, from *As You Like It*, Act 2, Scene 7

The works of Cervantes, Rabelais, and Shakespeare have been translated into dozens of languages. Through these translations, their Renaissance spirit lives on.

Summary The making of paper, the printing press, and new universities helped spread the Renaissance beyond Italy into lands where its ideas changed.

Reading Check

Compare How does the choice of language used by Cervantes and Shakespeare compare to that of Italian writers?

Lesson 3 Assessment

Review Ideas, Terms, and People

1. **a. Identify** What two inventions helped spread the Renaissance beyond Italy?

   b. Explain How did Johann Gutenberg's machine work?

2. **a. Summarize** How did Erasmus define free will?

   b. Describe What was Erasmus's position on church rituals?

   c. Contrast How did Christian humanism differ from the earlier form of humanism that developed in Italy?

   d. Synthesize What is the connection between humanism and painting people working in the fields?

3. **a. Compare** What is one thing that Miguel de Cervantes and William Shakespeare had in common with Dante?

   b. Draw Conclusions Why have Shakespeare's works remained popular around the world for centuries?

Critical Thinking

4. **Summarize** Copy the chart below to describe the works of Northern Renaissance artists. Add rows as needed.

Artist	Artist's Work

Social Studies Skills

Speak and Listen

Define the Skill

The topics you study in social studies are all important, but these topics are also terrific for having a discussion. Discussions help you learn to speak and listen to others. They are also a way to practice using vocabulary words.

Learn the Skill

Follow these steps to have a discussion about a social studies topic.

1. Pronounce new or unfamiliar words and names slowly and clearly. Try to use specific vocabulary and names instead of words like "thing" or "person."

2. Listen for information that helps you to understand definitions. A speaker might say, "Many artists during the Renaissance created works with religious themes. *The Last Supper* is a painting that shows Jesus eating a meal." The second sentence helps to define *religious theme* in context. Ask clarifying questions if you are confused.

3. Show that you are listening by giving a response or asking for more information. For example, the response "What other parts of *The Last Supper* show a religious theme?" repeats important information. It also asks a question that tells the speaker and others that this listener has been paying attention to the discussion and wants to know more.

4. Allow one speaker to finish talking before another person speaks. It is difficult for listeners to pay attention to more than one speaker at the same time, and it is not polite to interrupt.

5. Write down the main ideas that you hear during the discussion. Include at least one supporting detail for each. This shows that you are actively listening, and the notes will help you respond to others with appropriate points.

6. Support other people's opinions with facts, or, if you disagree, do so politely using facts and logic.

Practice the Skill

Have a discussion with four to five people about a topic from the module. You will answer questions based on this discussion in the Module Assessment.

Possible questions about which you may have a discussion include:

- Were Leonardo da Vinci's contributions to arts or sciences more important?

- How has Johann Gutenberg affected your life?

1. Speak clearly. Think about how you will say specific names or terms that could be used in the discussion. Examples are names like *Johann Gutenberg* or terms like *perspective*.

2. Use words that you have read, like *anatomy, printing press,* and *movable type,* but do not just tell their definitions.

3. Write down main ideas and supporting points as you listen to others speaking.

4. Participate by responding to at least one comment that someone else says during the discussion. If possible, repeat a part of the comment in your response or ask the speaker a question.

5. Have a polite discussion.

Literature in History

Renaissance Literature

About the Reading Shakespeare's plays spotlight an enormous range of human experiences—including love, loss, and everything in between. Even though *Romeo and Juliet* ends in disaster, its message is a hopeful one. Its main characters, two teenaged members of warring families, meet at a party and fall instantly in love. In this scene, which takes place later that evening, a troubled Romeo spies Juliet on her balcony.

As You Read Notice the words Romeo uses to describe Juliet's beauty.

from *Romeo and Juliet*
by William Shakespeare

> *Rom*. But soft! what light through yonder window breaks?
> It is the east, and Juliet is the sun. ❶
> Arise, fair sun, and kill the envious moon,
> Who is already sick and pale with grief,
> That thou, her maid, art far more fair than she. . . .
> Two of the fairest stars in all the heaven,
> Having some business, do entreat her eyes
> To twinkle in their spheres till they return.
> What if her eyes were there, they in her head?
> The brightness of her cheek would shame those stars,
> As daylight doth a lamp; her eyes in heaven
> Would through the airy region stream so bright
> That birds would sing and think it were not night.
> See, how she leans her cheek upon her hand!
> O that I were a glove upon that hand,
> That I might touch that cheek!
>   *Jul*.   Ay me!
>   *Rom*.   She speaks:
> O, speak again, bright angel! for thou art
> As glorious to this night, being o'er my head,
> As is a winged messenger of heaven
> Unto the white-upturned wond'ring eyes
> Of mortals that fall back to gaze on him
> When he bestrides the lazy puffing clouds
> And sails upon the bosom of the air.
>   *Jul*. O Romeo, Romeo! wherefore art thou Romeo? ❷
> Deny thy father and refuse thy name;
> Or, if thou wilt not, be but sworn my love,
> And I'll no longer be a Capulet.

doff remove
counsel secret thoughts

❸ Juliet says that she could be with Romeo if he were from a different family. *What does she ask him to do?*

  Rom. [*Aside.*] Shall I hear more, or shall I speak at this?
  Jul. 'Tis but thy name that is my enemy;
Thou art thyself, though not a Montague.
What's Montague? it is nor hand nor foot,
Nor arm, nor face, nor any other part
Belonging to a man. O, be some other name!
What's in a name? That which we call a rose
By any other word would smell as sweet;
So Romeo would, were he not Romeo call'd,
Retain that dear perfection which he owes
Without that title. Romeo, doff thy name,
And for that name, which is no part of thee
Take all myself. ❸
  Rom.   I take thee at thy word:
Call me but love, and I'll be new baptiz'd;
Henceforth I never will be Romeo.
  Jul. What man art thou that thus bescreen'd in night
So stumblest on my counsel?
Rom.   By a name
I know not how to tell thee who I am:
My name, dear saint, is hateful to myself,
Because it is an enemy to thee;
Had I it written, I would tear the word.
  Jul. My ears have not yet drunk a hundred words
Of that tongue's utterance, yet I know the sound:
Art thou not Romeo, and a Montague?
  Rom. Neither, fair saint, if either thee dislike.

A painting of Romeo and Juliet from the 1800s

Connect Literature to History

1. Evaluate Renaissance humanists believed that people can achieve great goals if they are willing to work hard. How do the characters of Romeo and Juliet reflect this humanist idea?

2. Analyze Medieval writings often focused on religious topics. But the Renaissance humanists believed that people could write about many different subjects without discussing religion. Based on this passage, what new topic did some humanist writers explore?

Module 20 Assessment

Review Vocabulary, Terms, and People

Match the "I" statement with the person or thing that might have made the statement.

1. "I wrote many comedies, tragedies, and histories in which I examined human emotions."
2. "I am a group of ideas about the value of people and their achievements."
3. "I traveled the Silk Road to China."
4. "I was a rich banker in Florence who paid for great works of art."
5. "I wrote a political book called *The Prince.*"
6. "I became famous for printed pictures that I sold at markets and fairs."
7. "I painted the ceiling of the Sistine Chapel."
8. "I thought that the church should give up practices that don't help people."
9. "I wrote *Don Quixote.*"
10. "I filled my notebooks with drawings of plants, animals, and machines."

a. Cosimo de' Medici
b. Leonardo da Vinci
c. Desiderius Erasmus
d. Miguel de Cervantes
e. humanism
f. Albrecht Dürer
g. Marco Polo
h. Niccolo Machiavelli
i. William Shakespeare
j. Michelangelo

Comprehension and Critical Thinking

Lesson 1

11.   a. **Identify** Who was Marco Polo, and how did he affect trade?
   b. **Compare** How were the four great trading cities of northern Italy similar?
   c. **Draw Conclusions** Why was Florence an important city during the early Renaissance?

Lesson 2

12.   a. **Describe** What contributions did Dante Alighieri and Niccolo Machiavelli make to the Renaissance?
   b. **Compare** What are some characteristics that Michelangelo and Leonardo da Vinci shared?
   c. **Elaborate** A historian has said that the Renaissance "created something new from something old." What does this statement mean?

Lesson 3

13.   a. **Recall** What were two main ways that the Renaissance spread beyond Italy?
   b. **Contrast** How was Northern European art different from Italian art?
   c. **Evaluate** William Shakespeare is often called the greatest writer in the English language. Why is this so?

Review Themes

14. **Geography** How did the location of Italy's port cities help them develop trade networks?

15. **Science and Technology** How did the development of the printing press change daily life for many Europeans?

Reading Skills

Greek and Latin Roots *Use the Reading Skills taught in this module to answer the following questions about the Greek and Latin roots of words from this module.*

16. Based on the definition of *perspective*, what do you think the Latin root *spec-* means? Hint: Think about other words that use this root, such as *spectator* and *spectacles*.
  a. to feel
  b. to see
  c. to hear
  d. to understand

17. The prefix *per-* in perspective means "through." Based on this meaning, what do you think the word *permeate* means?
  a. to spread through
  b. to dissolve in
  c. to disappear from
  d. to climb over

Social Studies Skills

Speak and Listen
Use the Social Studies Skills taught in this module to answer the questions about the group discussion you had. Discuss the questions with your group.

18. Make a list of the vocabulary words that were used in the discussion. Were any words used more than once? Based on the list, does the group think every person spoke during the discussion? Why does the group feel this way?

19. Estimate how many responses were given during the discussion and how many questions were asked. Do group members think they showed that they listened to the speakers? Would they agree or disagree that the discussion was polite to both speakers and listeners? Why does the group feel this way?

Focus on Writing

20. **Summarize a Discussion** Now that you have had a discussion, summarize your discussion in one paragraph. Be sure to include a main idea and supporting points you heard during the discussion. Include a topic sentence in your paragraph. This sentence should take a position on the discussion question that is supported by the ideas in the paragraph. Use vocabulary from the module.