Breaking the Codex

About the Show

Jodie and Freddi unexpectedly grab Joe and warp him to 1503 in Italy at the height of the Renaissance. Their mission? To rescue the brilliant inventor Leonardo da Vinci from Mad Jack, who has somehow gotten the idea that da Vinci can help him create his own time traveling book.

Introduction

Leonardo da Vinci's accomplishments as an artist and an inventor will fascinate students. They may be familiar with his name through various popular culture references, but they don't really know what Leonardo did to gain his fame. This lesson also introduces students to the remarkable Renaissance period.

Historical Background

The period that became known as the Renaissance (a French word meaning rebirth) began in Italy in the 14th century. In addition to a renewed interest in the classical works of Greece and Rome, the Renaissance inspired an explosion of trade, art, science, architecture, and literature.

During the Renaissance, Italy was made up of several independent city-states. Florence, which was ruled by the powerful and wealthy Medici family, became a mecca for painters, sculptors, philosophers, scientists, and poets largely because of the Medicis' eagerness to sponsor the work of such artists. One of the most famous of these artists, both in his own time and today, was Leonardo da Vinci.

In 1452, Leonardo was born in a village near the town of Vinci. He showed a talent for drawing early on and was taken to Florence as an apprentice to the painter Andrea del Verrocchio.

Curriculum Connections

- art
- biography
- inventions
- Leonardo da Vinci
- Renaissance
- writing

Subject Areas

- art
- language arts
- science
- social studies



Breaking the Codex

Historical Background *continued*

Although only a few of his paintings survive—the most famous of which is the *Mona Lisa*—Leonardo's superb use of color, perspective, and line make each of them a masterpiece.

In addition to being a master painter, Leonardo was an extraordinarily brilliant sculptor, thinker, architect, scientist, and inventor, as well as a musician and an engineer. Among the many inventions he created or envisioned—hundreds of years ahead of his time—were the submarine, tank, helicopter, bicycle, and telescope. Many of Leonardo's creations were never finished, but he left behind thousands of pages of drawings, records, experiments, observations, and plans in dozens of notebooks. Unfortunately, many more pages were lost. They were each in Leonardo's distinctive script, written from right to left and requiring a mirror to read them. It is not known why Leonardo wrote this way, but some theorize that he used backward writing to keep his ideas secret.

Although Leonardo experienced great success throughout his life, he was constantly in search of a patron. One of the most unlikely of his patrons was Cesare Borgia, the son of the corrupt Pope Alexander II. A brilliant but ruthless general, Borgia's goal was to seize control of central Italy from the French who then ruled it. Leonardo traveled with Borgia for a year as a military engineer, inspecting fortresses and making maps.

Around 1516, Leonardo left Italy for France, where he lived out his final days in the court of Francis I. He took with him his notebooks and three paintings, including the *Mona Lisa*. In 1860, historian Jacob Burckhardt referred to Leonardo as the "universal man," because he had excelled in so many areas. Today we often refer to such a genius as a "Renaissance man" or a "Renaissance woman."



Want students to get even more excited about history?

Check out the Leonardo adventure for kids at

www.timewarptrio.com/adventures/leonardo/

Put It Back, Jack! and other interactive games to play.

Plentifax 487—the ultimate time traveler's guide—gives facts about Leonardo, the Renaissance, Italy, and more!

Cool Books that kids will love.

Activity 1

The Da Vinci "Code"

As Freddi, Jodie, Fred, and Joe discover in "Breaking the Codex," Leonardo kept copious notes of his inventions, ideas, and visions written in handwriting that could only be read by reflecting it in a mirror. In this activity, students will enjoy copying Leonardo's special writing technique.

Instructions

1. Explain to students that they will try writing as Leonardo da Vinci did in his notebooks. It is a mystery why he did it, but he used "mirror writing" (writing backwards and across the page from right to left) and wrote with his left hand. The best way to read this type of writing is by holding a mirror up to it so the reflection allows you to see the words correctly. Ask students to try writing their letters backwards, from right to left, using their left hands.
2. Have them try writing the alphabet forward and backward.
3. Distribute mirrors or arrange a mirror station. Have students hold up their backward writing and see if it looks normal.
4. Ask volunteers to write a backward message to a classmate and see if he or she can read it with a mirror.
5. Discuss other writing systems that are not written and/or read left to right. For instance, in Hebrew words and sentences are read from right to left. Chinese writing is read from top to bottom starting at the right hand side of the page.

Objective

- to experiment with writing and writing systems

Materials

- writing supplies
- mirrors

Curriculum Standards

- **NCSS**
  Culture: The students will be able to describe ways in which language, stories, folktales, music and artistic creations serve as expressions of culture and influence behavior of people living in a particular culture.
- **NCTE/IRA**
  The students will develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.

Activity 2

See It Now!

In this activity, students create an advertisement in honor of one of Leonardo da Vinci's inventions or innovations.

Instructions

1. Have students research Leonardo da Vinci's many inventions and innovations. Create a list on the board.
2. Discuss the elements of a good billboard or advertisement: image, title, tagline, etc. If possible, bring in some samples to share with students.
3. Working in teams, have students create an ad featuring one of Leonardo's inventions from the classroom list. They will need to decide the most important feature or function of the invention and then figure out how to show it in the advertisement.
4. Have each team present their ad or billboard to the class. Discuss why they selected the invention and the process they went through to develop the ad. Display the ads in the classroom.

Take It Further

Leonardo da Vinci was called a "Renaissance man" because he was talented in so many different areas. Discuss with students what the term means and then have students nominate their choice for "Renaissance man/woman" of today.



Objectives

- to become familiar with Leonardo da Vinci and his inventions
- to create an advertisement or billboard
- to become more media literate

Materials

- large tag board, at least 24" x 36"
- art and writing supplies

Curriculum Standards

- **NCSS**
  Science, Technology, & Society: Students will identify and describe examples in which science and technology have changed the lives of people.
- **NCTE/IRA**
  Students use a variety of technological and information resources to gather and synthesize information and to create and communicate knowledge.

Resources

Recommended Books

For Teachers

Florence: The Golden Age 1138–1737 by Gene Adam Brucker. (University of California Press, 1998)
A chronicle of the social, economic, religious, and cultural factors that led to Florence's preeminence during the Renaissance.

The Greenwood Encyclopedia of Daily Life, Volume 3 edited by Joyce E. Salisbury. (Greenwood Press, 2004)
A comprehensive look at the lives of ordinary people in the 15th and 16th centuries—their clothes, food, culture, customs, beliefs, etc.

Inventing Leonardo by Richard A. Turner. (University of California Press, 1994)
A study of Leonardo's life and works and an analysis of how his reputation has grown and changed in the last four centuries.

The Italian Renaissance, 2nd edition by Peter Burke.
(Princeton University Press, 1999)
An introduction to the period.

The Italian Renaissance
by J.H. Plumb. (Mariner Books, 2001)
An overview of the period, with contributions from leading historians.

Leonardo by Martin Kemp.
(Oxford University Press, 2004)
A comprehensive biography of the man and the artist, with illustrations and reproductions of paintings.

The Notebooks of Leonardo da Vinci, Volume I by Leonardo da Vinci. (Dover, 1970)
The first of a two-volume set, these are Leonardo's musings on painting, sculpture, architecture, anatomy, music, and more. In Italian and English.

For Students

Fiction

The Amazing Thinking Machine
by Dennis Haseley. (Dial, 2002)
Roy is an inventor. When his answer-what-it-is-asked machine actually seems to work, it has a surprising effect on his life.

The Apprentice by Pilar Molina Llorente. (Farrar, 1989)
While serving as an apprentice to a famous artist in Renaissance Florence, Aarduino's courage is tested in ways that he could never have imagined.

Da Wild, Da Crazy, Da Vinci
by Jon Scieszka.
The Trio travel to 16th century Italy where they meet Leonardo, outwit Machiavelli, and learn about famous inventors.

Leonardo and the Flying Boy
by Laurence Anholt. (Barron's, 2000)
Leonardo's student Zoro is intrigued by the room with the locked door, but would never open it. The mischievous Salai convinces him to enter and they are amazed at what they find.

Midnight Magic by Avi.
(Scholastic, 1999)
In this ghost story, a princess, a smart servant, and a magician who no longer believes in magic team up to solve a mystery in the castle of King Claudio of Pergamontio.

The Second Mrs. Giaconda
by E. L. Konigsburg. (Atheneum, 1975)
Based on actual events, this novel attempts to answer the question of why Leonardo da Vinci chose to paint a portrait of the second wife of a little-known merchant—the *Mona Lisa*—instead of the royals who begged him to paint their portraits.

The Stolen Smile by J. Patrick Lewis and Gary Kelley. (Creative Editions, 2004)
In 1911, the most famous painting in the Louvre Museum goes missing. Who has taken the *Mona Lisa*?

Uh-Oh, Leonardo! by Robert Sabuda. (Atheneum, 2003)
When Providence Traveler finds what appears to be Leonardo da Vinci's previously undiscovered sketch for a mechanical mouse, she makes the machine herself. Suddenly she is transported back to Florence, Italy in 1503. For younger readers.

Nonfiction

The Atlas of the Renaissance World
by Neil Grant. (McGraw-Hill, 2003)
Learn all about the Renaissance in Europe during the 15th and 16th centuries.

Florence in the 1400s by Marco Zelasco and Pierangelo Zelasco. (Harcourt, 2001)
Journey to the Past series. This "traveler's guide" will introduce you to the sights and sounds of Florence.

Resources

Leonardo, Beautiful Dreamer by Robert Byrd. (Dutton, 2003)
Many detailed pictures, quotes from Leonardo's notebooks, and facts about life in Italy add to the story of Leonardo's life and work.

Leonardo da Vinci by Diane Stanley. (Morrow, 1996)
Sketches and pictures from Leonardo's notebooks and paintings illustrate this biography of the great artist, inventor, and scientist.

Leonardo da Vinci and the Renaissance in World History by Allison Lassieur. (Enslow, 2000)
Leonardo's life is described in the context of the Renaissance.

Leonardo da Vinci for Kids: His Life and Ideas by Janis Herbert. (Chicago Review Press, 1998)
Learn about Leonardo and choose from 21 activities based on his work.

Leonardo's Horse by Jean Fritz. (Putnam, 2001)
Not only a study of Leonardo's commission from the Duke of Milan to create a huge sculpture of a horse, this is also the story of an American, Charles Dent, who revived the project in the 1970s.

Lorenzo de Medici and Renaissance Italy by Miriam Greenblatt. (Marshall Cavendish, 2003)
Lorenzo de Medici's power, political and financial skills, and interest in literature and the arts made Florence the center of the Renaissance.

The Mona Lisa by Jill Kalz. (Creative Education, 2005)
What in the World series. Leonardo's most famous painting is put into historical context.

Renaissance by Andrew Langley. (Knopf, 1999)
Eyewitness Books series. Covers an extensive range of topics, including religion, the arts, government, life at home, and trade.

The World in the Time of Leonardo da Vinci by Fiona MacDonald. (Chelsea House, 2001)
Leonardo's life and work is described, as well as important events around the world.

Poetry

Here's What You Do When You Can't Find Your Shoe by Andrea Perry. (Atheneum, 2003)
Ingenious contraptions are described in these silly poems.

Web Sites

LEONARDO DA VINCI
mos.org/leonardo/
A virtual tour of the 1997 exhibit Leonardo da Vinci: Scientist, Inventor, Artist presented by Boston's Museum of Science. Also offers details about da Vinci's painting techniques, inventions, mirror writing, and more.

DRAWINGS OF LEONARDO DA VINCI
visi.com/~reuteler/leonardo.html
Thirty-nine examples of Leonardo's drawings.

LEONARDO DA VINCI: MASTER DRAFTSMAN
www.metmuseum.org/special/Leonardo_Master_Draftsman/draftsman_splash.htm
A Metropolitan Museum of Art site that offers online access to Leonardo's masterpieces, his drawings, a chronology of his life and work, and more.

NATIONAL MUSEUM OF SCIENCE AND TECHNOLOGY LEONARDO DA VINCI—MILANO
www.museoscienza.org/english/leonardo/
This site showcases many of Leonardo's machines and manuscripts, and shows models of some of his drawings.

LEONARDO DA VINCI THE MAN AND THE INVENTOR
www.lairweb.org.nz/leonardo/
This site offers detailed information about individual paintings and drawings by Leonardo da Vinci.

Please note:
Although these sites were verified at the time of publication, Web site addresses and content are frequently subject to change.

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