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# art & man<sup>®</sup>

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## LEONARDO and the Art of Drawing

# The Most Important Art

*Leonardo da Vinci wasn't just one genius. He was 10 geniuses. What was the key to his unbelievable creativity?*



Cover: Leonardo da Vinci (1452)  
*An Antique Warrior*, c. 1475.  
British Museum.

How do you express what you're thinking? With a sentence, or a gesture? Most people think in words. Leonardo da Vinci thought with a pencil, a pen, a piece of charcoal or crayon. His hand was always moving. It would finish drawing a complex landscape. And, without stopping, the line of Leonardo's pen might move into a quick sketch of a horse and rider in action, then do a scientific study of the proportions of the human head. He might then design a terrible war machine built to slice people into little pieces (see pages 4-5) and right after that begin a drawing of a beautiful angel. He might never finish her, but go on to a new piece of paper to do a fanciful study of a fierce Roman soldier, using his own face as a model (see cover drawing). Finally, any empty spaces on the page would quickly be filled with a mysterious code, which seemed to make no sense. In addition to using shortened words, secret signs and strange spellings, Leonardo wrote all his notes backwards. They could only be read by holding the page up to the mirror.

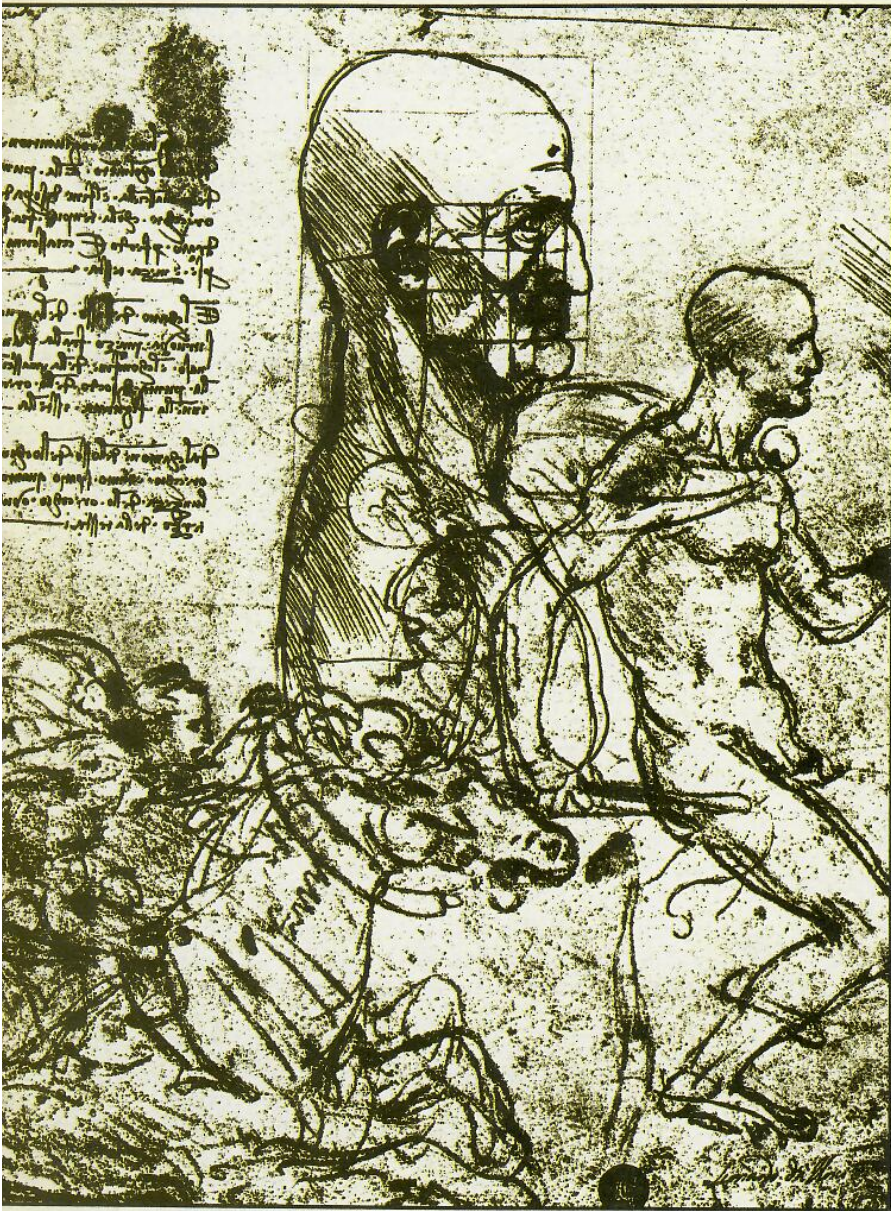
This issue will focus on drawing, one of the most important tools an artist needs to create. It is the best and most direct way to visualize your thoughts. It's the first step toward making your ideas "real." People draw for three main reasons. Drawings can record an event or show exactly how something looks. (Of course, cameras are much better at that these days.) Drawing is a way to

"think." It is a way to put down and develop your ideas. A drawing can also be a "plan" for a larger work. Many painters make a final drawing, then transfer it to their canvas in order to do a painting. Leonardo drew for all these reasons. He was also one of the first artists to make drawing as important an art as painting or sculpture.

Leonardo da Vinci was one of the most creative artists of all time. He wasn't just a great painter and sculptor. He was a master architect, an inventor, a decorator, a scientist, a musician, an engineer, a geologist and a mathematician. But perhaps his greatest achievements are his thousands of drawings.

Leonardo was born more than 500 years ago. He grew up in a small town in the north of Italy. He was curious about everything from the beginning. He collected so many animals, plants, flowers, leaves, bones, and rocks that he needed most of his father's house to keep them in. And he drew them all, over and over. When he was 14, his father sent Leonardo to study in an artist's workshop in the large city of Florence. After a few months, his teacher, a famous artist himself, said he was going to stop drawing. He couldn't compete with his teen-aged student.

Soon Leonardo began to establish his own reputation as a master artist. One of his first major projects was a large painting for a church in Florence (see page 14 for the story behind this painting). It was never finished.



Most of the paintings, sculptures and buildings Leonardo planned were never completed. Something always seemed to happen. He always had something else he'd rather do. Or he simply became bored when he worked on a project too long. Leonardo could do so many things that one lifetime wasn't long enough. But he was able to communicate all his ideas, schemes, and projects through his thousands of drawings.

From the drawings on these pages, you can see that Leonardo drew as easily and naturally as other people see. He was one of the first artists to draw directly from nature. He studied his subjects scientifically before painting or sculpting them. He studied the anatomy and muscles of a figure. He learned all the various proportions of humans and animals. He made studies of his subjects in all positions and from every point-of-view before painting them. He did quick gesture drawings so he could capture figures in a natural position. He established the science of perspective (see *Workshop*, pages 10-13 and "*Masterpiece of the Month*," pages 14-16), and many of the other principles artists use today in drawing. On the following pages, you'll learn more about Leonardo. You'll meet a young artist at the beginning of his career. And finally, you'll learn one of the most basic drawing tools developed by Leonardo himself, the art of perspective.

Studies for the *Battle of Anghiari*, c. 1504.  
Academy, Venice.

## Adventures of the Artist

# Diary of a Young Artist

*What was it like to learn to draw with one of the most famous artists in history?*

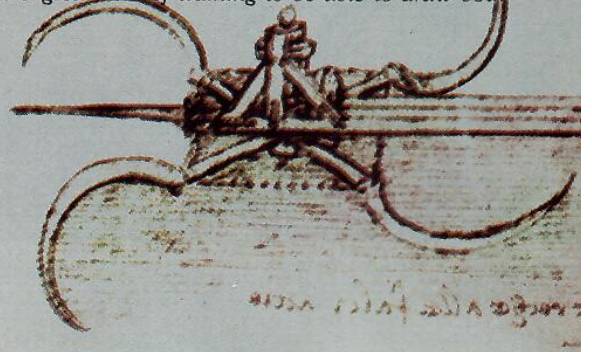


Caricature study of head,  
c. 1480-85. Academy, Venice.

While he was in his teens, Leonardo studied in the studio of a famous artist. When he became a recognized master, he also taught students the arts of drawing and painting. The following is the kind of journal a young artist of the time might have kept in the first days of his studies under Leonardo da Vinci.

March 25, 1494. Today I became a pupil of the great master Leonardo da Vinci here at his workshop. This morning we woke up at 6 and started our classes. Leonardo told us we would be working 12 hours a day, every day. We began by studying perspective, then spent several hours learning some of the proportions of the human body. After that, we drew from the works of the great masters. Master Leonardo then took us outside the city walls and we spent the rest of the day drawing nature. On the way back, we stopped in the marketplace. Each of us filled an entire notebook drawing the people we saw. Most of our drawings were terrible, but Master Leonardo told us to keep the notebooks. He said we should draw in them every day. In a year we should compare our drawings with those we did today. He said we would be amazed at the difference.

March 27. This morning I admired a drawing Master Leonardo was working on. It was the head of an angel, done in red chalk. Only her face was finished, but her features were perfect. I asked him how he could draw people so beautifully. He laughed and turned the page. I was horrified. There was the picture of a horrible hag. Her nose was flat, and her chin stuck out impossibly. She was drawn with wide, thick, heavy lines and dark shadows which made her look more hideous. Leonardo said that great beauty can be drawn by learning the ideal proportions of the human body. Great ugliness can also be shown by increasing and decreasing these proportions. He said it takes a great deal of training to be able to draw both ways.



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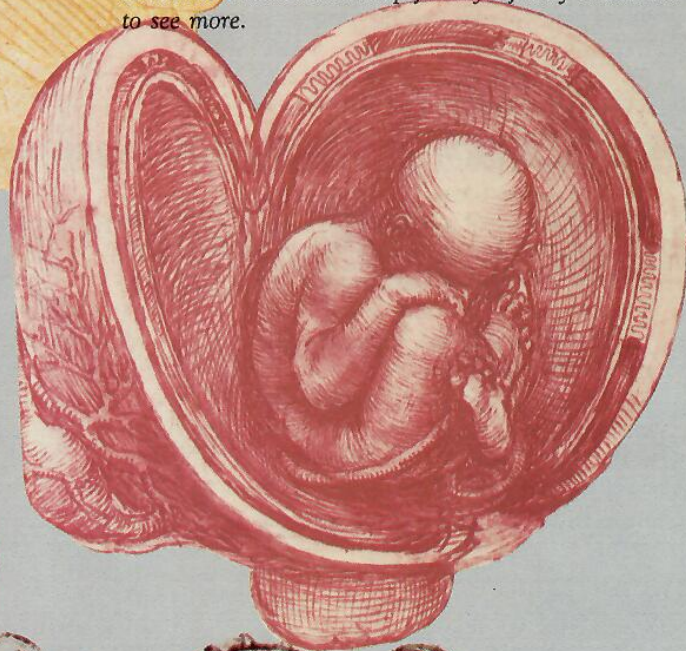


Drawing of angel's head for the painting,  
*Virgin of the Rocks*, c. 1480.  
Royal Library, Turin.

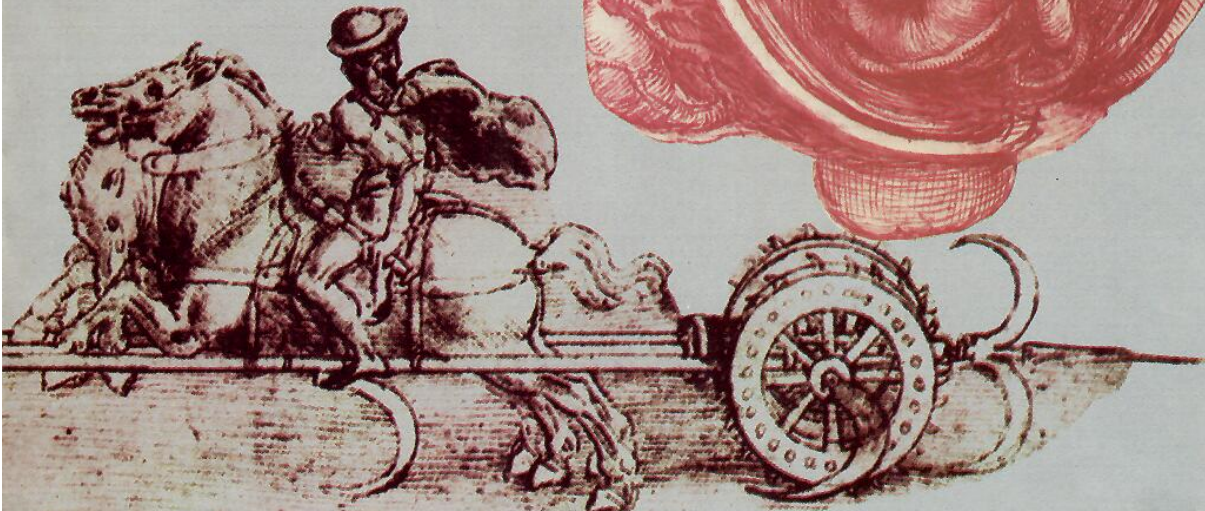
April 5. Ever since I've been here, I've heard stories about our master's private studio where he does his own work. No one I know has been in there. He never lets us students even look in the door. This evening, after Leonardo left, Cesare and I watched where he hid the key. We crept into the dark room and lit a candle. We both gasped at what we saw. Wheels, levers, pipes, shafts, rods, gears and pistons filled every part of the room. Here was the skeleton of a horse, there a diving machine, beside me a huge model of a human eye, a stuffed crocodile and what looked like a jar with a human embryo in it. The embers from the furnace Leonardo used for his experiments glowed with a frightening pink light.

Cesare pulled a notebook out from under a huge pile on the worktable. We hid behind the table and opened the book. There were drawings inside of the most marvelous things – iron war machines with sharp steel blades like a spider's arms, women turning into swans, plans for giant cities of the future, fantastic musical instruments, monsters and dragons. There were pictures of skeletons, muscles, dead bodies and hundreds of diagrams of men in flying machines. We tried to read some of the strange code written on each drawing. But just then we heard a noise. Quickly we rushed for the door. Our candle went out and we made so much noise tripping over things that Leonardo must have heard us. We escaped just in time, but I wished I could have stayed longer. Seeing Leonardo's secret workshop for myself only makes me want to see more.

Embryo, c. 1512. Windsor.



War machine, c. 1485. Windsor.



INNOVATION OF THE ARTS  
AND THE SCIENCE OF THE  
MIND

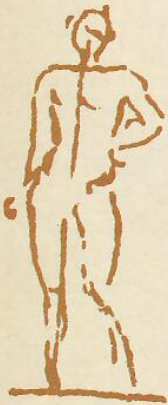
# Catching the Action

*Would you like your drawings to look more realistic? The secret is in the way you begin.*

Have you ever tried to draw people or animals? You put down a few lines, look up again and your subject is in a completely different position. The first step in drawing figures is to try and capture the action as fast as you can.

Look at the drawings by Leonardo on this page, and on pages 2 and 15-16. See how he sketches figures. They almost look like scribbles. He's not concerned with structure at all, just movement. He keeps his pen on the paper, never lifting it and makes wide, loose sketches. The line follows the direction an arm moves in, the way a figure runs or an animal twists. Look at the figures Leonardo drew in the large foldout perspective drawing toward the end of the magazine, pages 15-16. If Leonardo didn't like the way a figure or an arm or leg was coming out, he drew right on top of it, again and again. When you look at the people running up and down the stairs or fighting on horseback, it's hard to tell if there is one person or many.

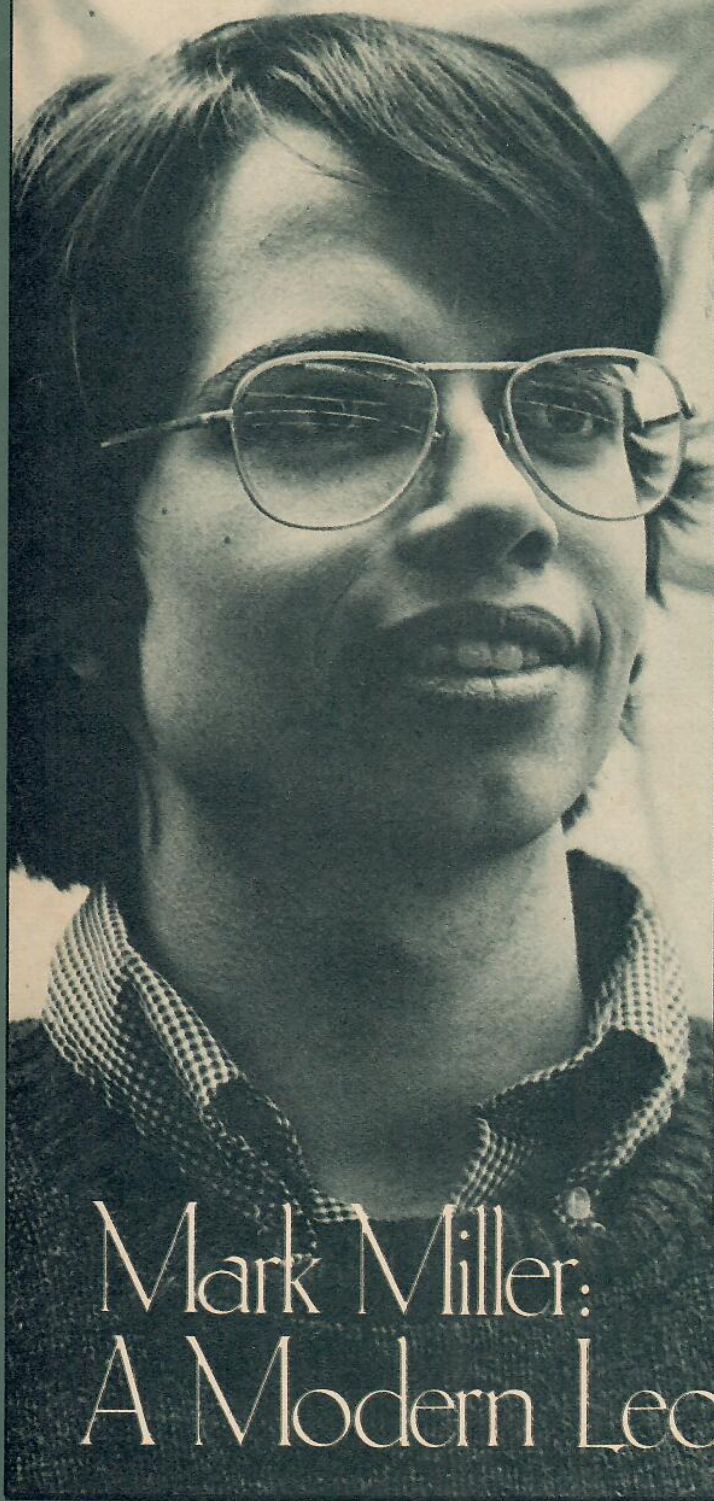
Gesture or action drawings are most effective if you work on a large scale. You should use the same materials Leonardo did — chalk, charcoal, brush, or pen and ink (felt-tip pen or magic markers are also good). Don't try to outline or block in the figure. Once you succeed in capturing the action, *then* you can work on structure, proportion, and background.



Leonardo da Vinci. Studies of moving figures, c. 1510.



## Artist of the Month



Does this drawing look familiar? It's from an early sketchbook done by this month's feature artist. Since Mark Miller did this sketch 5 years ago, he has won many awards. In this interview he reveals some of his drawing secrets.

# Mark Miller: A Modern Leonardo

What eighteen-year-old Mark Miller likes to draw best are trees — trees from his imagination and real trees he finds around his home in Wilton, Connecticut. Using pen and ink, he works a kind of magic with lines and dots. He creates enchanted-looking forests, sky-reaching trees, and sturdy, earthbound trees.

If you look carefully at his drawings, you will see the wonderful patterns he has created. “Real” nature is not made up of lines and dots. Then why do his trees and landscapes look

so real? In this interview Mark talks about some of the drawing techniques he uses.

Mark is now studying at Washington University in St. Louis on an art scholarship. For the drawing of arched trees, and the print of rocks (both below), he won medals in the Scholastic Art Awards program.

**How long have you been drawing?**

I can't remember when I haven't been drawing. My father is a high school art teacher, so there were always art materials around the house.

**Did your father give you drawing lessons when you were growing up?**

No, not really. It's just that he was there if I had a question. My mother used to be an illustrator and my older sister studies art, so there was always someone around if I needed some help. They all gave me confidence in what I was doing.

**Were you always serious about drawing and becoming an artist?**

Well, I was always pretty good, but I never really put my mind to it until the summer of my freshman year in high school. I was kind of depressed then, very unsure of myself, and it was comforting to sit back and draw. Drawing always makes me feel better.

**What did you draw?**

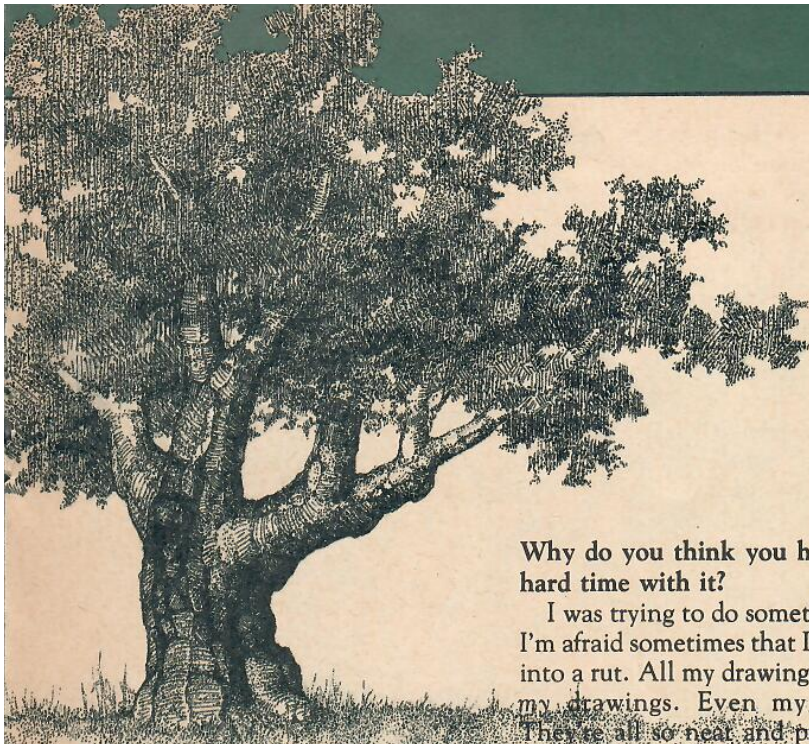
I copied stuff by Leonardo da Vinci and Michelangelo and started getting into trees and landscapes like the ones my father does.

**Why did you copy the drawings of Leonardo?**

I had seen them in art books we had at home, and I was amazed at how accurate they were. He has real sensitivity for everything. Copying his drawings was like an exercise. I would use the same medium and try to get the best likeness I could. I was surprised that I could do as well as I did. It gave me courage.







I'm curious about the drawing you did of the arched trees. Were these trees drawn from life?

Yes. I got lost one day driving around in Connecticut. I saw these trees and said, "Hey! I've never seen trees growing like that before." So I stopped and did a couple of quick sketches in pencil. When I got home, I did the detailed drawing.

How long did this drawing take?

About five hours. At one point, I thought I had ruined it. I hated it when I finished and almost threw it out.

Why do you think you had such a hard time with it?

I was trying to do something new. I'm afraid sometimes that I'm getting into a rut. All my drawings look like my drawings. Even my doodles. They're all so neat and precise and very stylized.

I took a drastic approach in this one. The lines are haphazard. The top of the drawing is just vertical lines that I added on. The trees are so dark. I did it quickly with little attention to how neat it looked. It's probably the most experimental drawing I've done.

How does your drawing compare with the actual scene?

The trees and the stone wall are the same. Everything else is made up.

Part of what makes this drawing so strong is all the white space. Did you plan it that way?

Yes. I didn't want to put too much in. It would take away from the important part of the drawing, the arching trees. For example, the lines at the top: You know they are there, but they don't really hold your attention. They don't take you away from the trees. I always keep direction in mind — where I want to lead the viewer's eye.

How did you know what to put in and what to leave out? How did you start the drawing?

Usually I start with the center of interest because I want everything

else to relate to it. So I did the trees first. I tend to outline and then fill in, slowly building up tone.

That drawing is such a comedy of errors. There are splotches that I had to cover up with branches. I can't believe it worked out.

You say you were experimenting in this drawing. What other kinds of "experiments" have you made?

Well, you just try to discover new techniques. In pen and ink, you manipulate lines and dots to get different textures and patterns. In one of my trees, I created a new foliage pattern (see tree above). I started with straight vertical lines and roughly put in the shadows. Then I went over it with dots, which takes a long time.

Have you sold any of your work?

Yes, people have seen my work at exhibitions. They ask for a price on a certain piece. I think of something, and I sell it. I sold a few more than I wish I had. I'm sort of missing them.

How does the art that you do relate to your drawing?

No matter what I do — sculpture, ceramics, or painting, drawing has been a big help. I really like watercolor painting, maybe because it's more like drawing. You can do it whenever you want. It's not a big laborious process to pull out your watercolors. I often make paintings out of my drawings, but even when I plan to paint, I will always sketch out what I'm doing first.

Could you describe why you draw?

I enjoy it. Since first grade I've been trying to get to the point where I can draw everything I see realistically. This will probably become less important to me in art school. I mean the graduate students here are doing such far-out things. You wonder why you're even drawing at all. It seems so unrelated to art today.

For now, though, drawing is very satisfying. It's self-expression. Not everyone gets that.



## Art & Man Workshop

# Creating Space

This workshop will introduce you to a tool you'll use for the rest of your artistic career.

Imagine, for a moment, that you are walking across the railroad tracks. You stop in the center and look straight down the tracks. Have you ever wondered why they seem to get smaller as they go toward the horizon?

This photo illustrates "perspective." Perspective is a tool that helps the artist put the real three-dimensional world onto a two-dimensional surface, like paper or canvas. Using perspective, the artist can create the illusion of depth (space) and show the proper proportions between objects. Without perspective, a painting or drawing will appear "flat."

Look at the painting at the top of the next page. Does it look "real" to you? Do the trees in the back look any farther away than those in front? Does the road look like it is really going away from you? Artists before Leonardo's time didn't know about perspective. They knew things got smaller as they got farther away. But they didn't know what else to do to give the feeling of space.

Now look at the painting of the hunters on the opposite page. Do *these* hills and trees, roads and figures look "real"? Do you think this painting was done in perspective?

This month our workshop focuses on a few of the basic laws of perspective that Leonardo helped to discover. With these laws, you will be able to draw the physical world in a more accurate way.

Photo by Russ D'Anna

## Getting Started

Sassetta and Assistant (active 1423-1450).  
*The Meeting of Saint Anthony and Saint Paul*, c. 1440.  
The National Gallery of Art, Samuel H. Kress Collection.

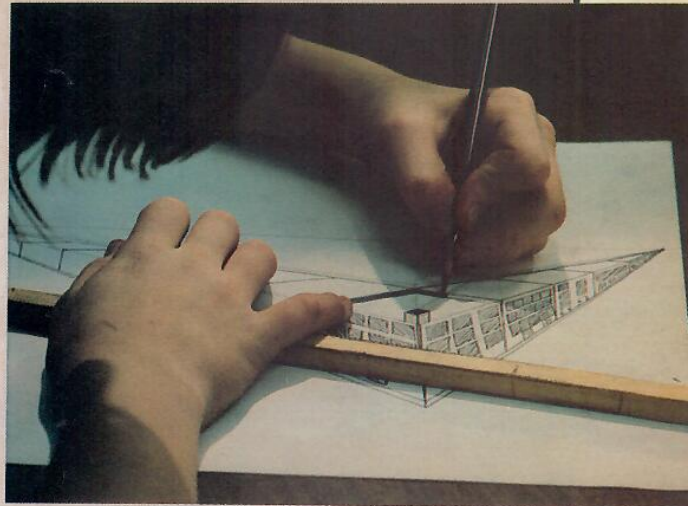


BEFORE PERSPECTIVE

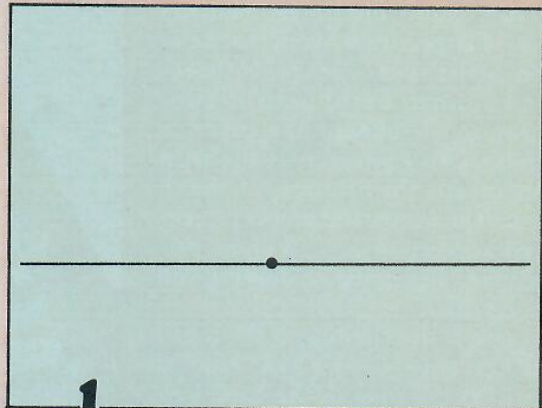
AFTER PERSPECTIVE



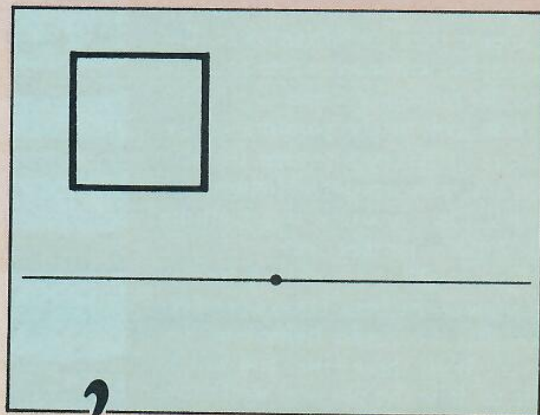
Pieter Bruegel the Elder (c. 1525-1569).  
*The Return of the Hunters*, 1565.  
Kunsthistorisches Museum, Vienna.



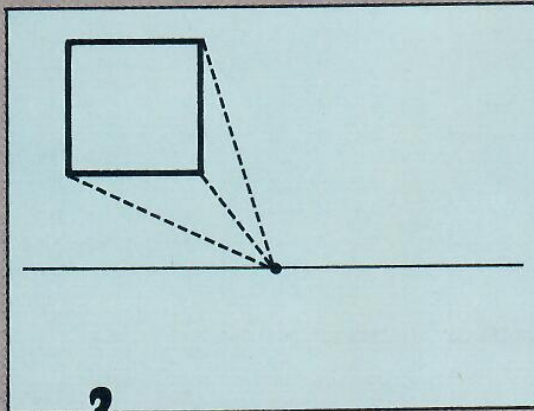
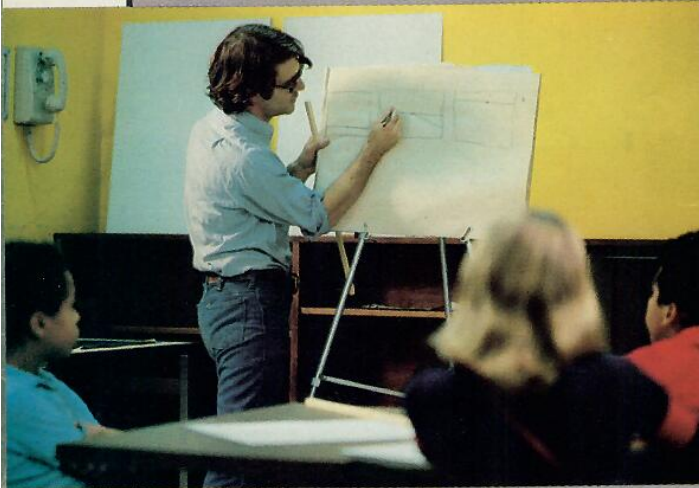
All that you will need is some drawing paper, a pencil, and a straight edge. Then follow these steps:



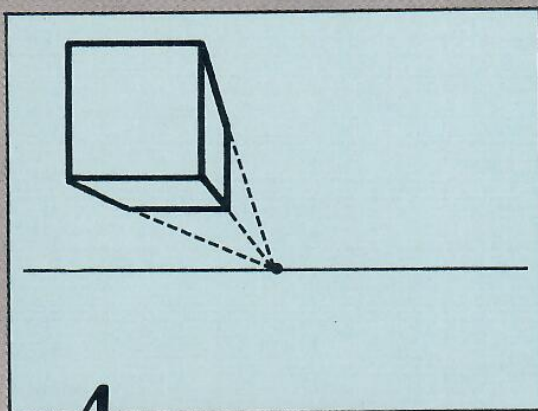
**1** Draw a horizon line and place a vanishing point near the center of it.



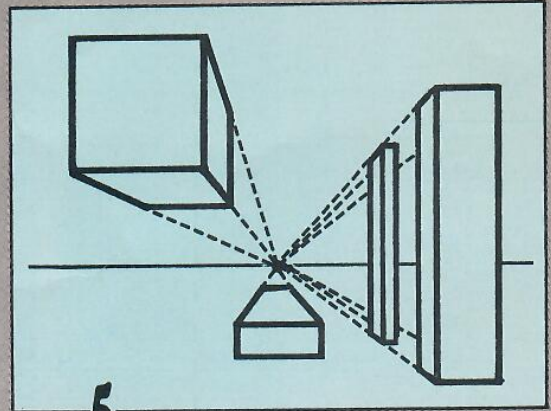
**2** Place a square or rectangle above the horizon line, somewhere in the sky.



**3** Use construction lines to connect the corners of the square to the vanishing point. You now have a "box" that goes all the way to the horizon.

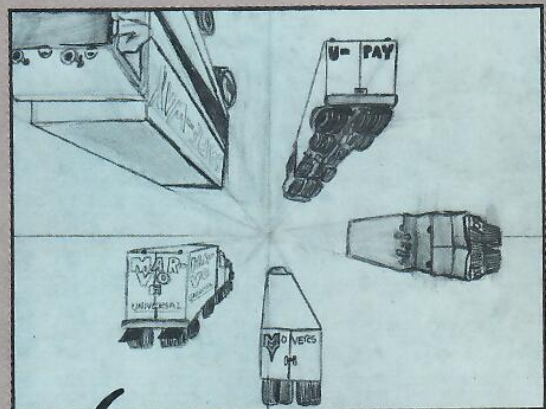


**4** Decide how deep you want the box to be and end it with a vertical and a horizontal line.

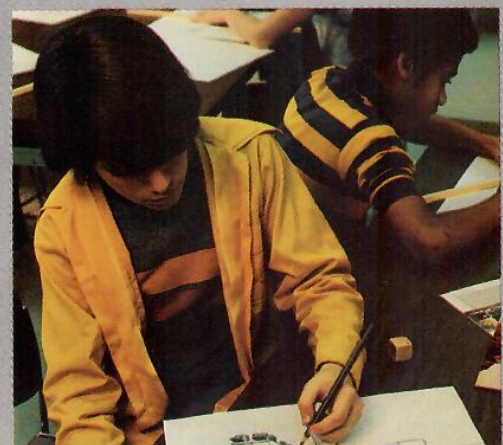


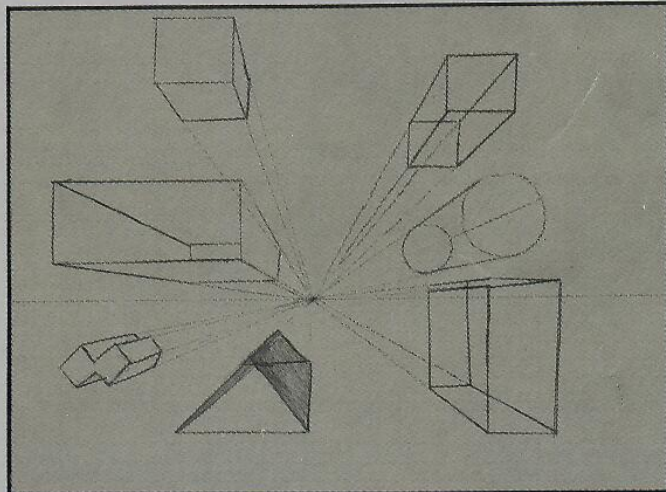
**5** Place more boxes and other objects below and above the horizon line. Give them depth by extending their sides toward the vanishing point. All these objects must have one side directly facing you. That way they will all converge at the same vanishing point.

Drawing by Jonathan Latham

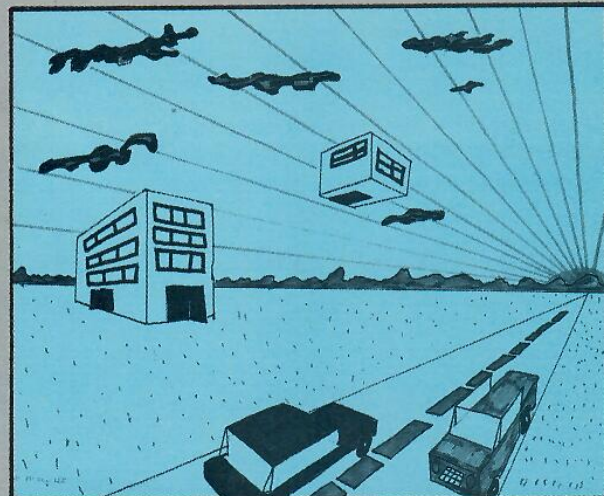


**6** Elaborate on your drawing by making the constructions into real objects or creating an entire scene. You may want to erase some of the construction lines.



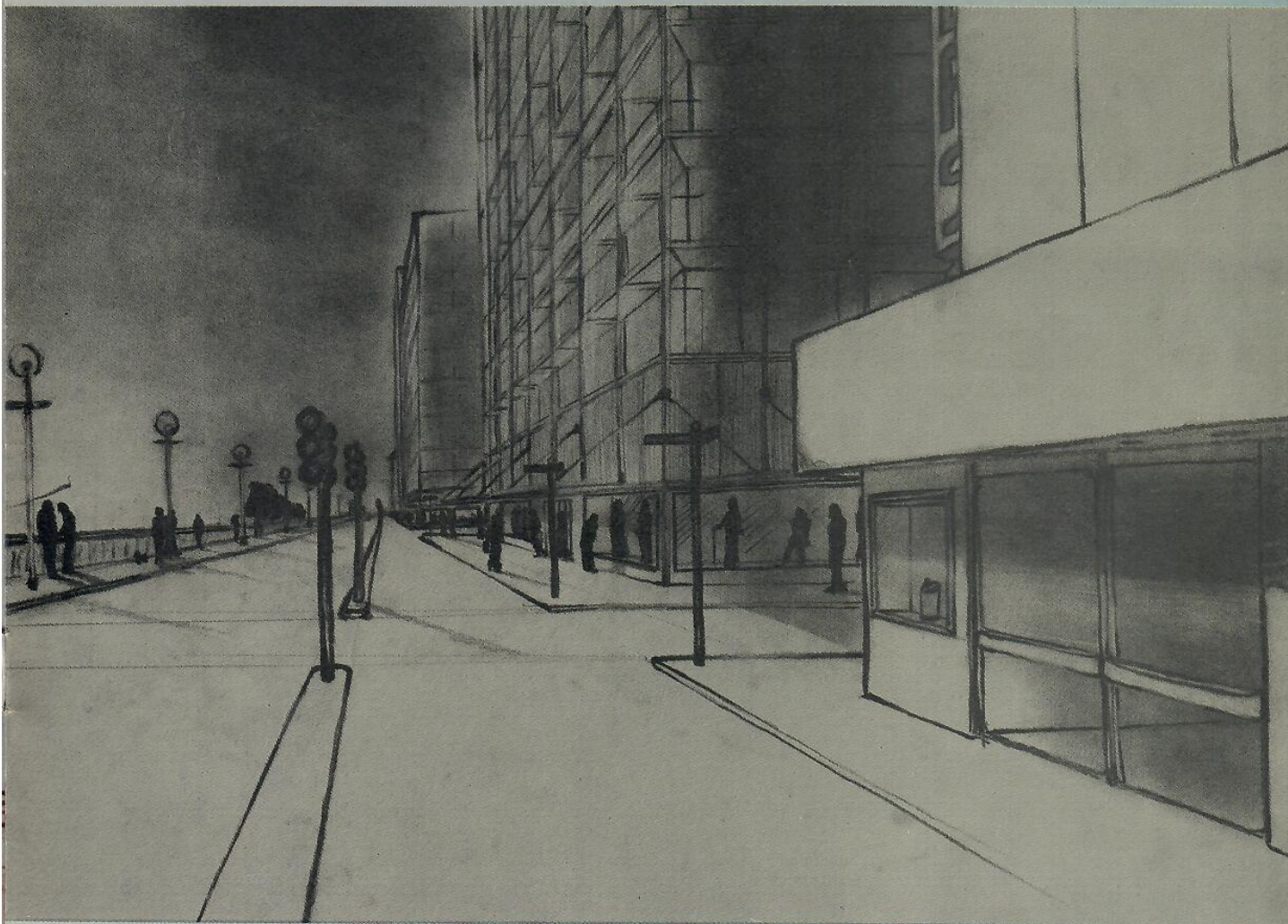


Drawing by Phoebe Stringer



Drawing by R. Michael Lee

## STUDENT PERSPECTIVE DRAWINGS



Drawing by Bing Chin, 17, 12th grade,  
Taft School, Watertown, CT

## Masterpiece of the Month 4

# The Masterpiece That Never Was

These are hard questions to answer because Leonardo da Vinci rarely finished any of his projects. When he was 25, Leonardo was given his first major assignment as an artist. A church wanted him to paint a large religious work. Leonardo was told to paint a scene from the Bible. He was told to show the three kings bringing presents to the Christ-child.

Leonardo began this project as he always did — by drawing. He did hundreds of sketches like the one shown far right. He took some of the figures directly from his sketchbooks. Then he did several drawings of the whole painting, as he wanted it to look. As usual, he wasn't happy with the results. He realized he was just sticking figures and sketches together without any overall plan or "composition." He decided to make a scientific plan, so everything he put in his painting would be placed in a *real* space. To accomplish this, he developed the art of perspective, which you learned about on pages 10-13.

Even though the large drawing (right) looks very complex, it is based on the simplest type of perspective, with one vanishing point. Compare it with the photo on page 10. Can you find the horizon line? (Hint: It's *not* where the tile floor ends.) Can you find the vanishing point? (Follow the construction lines.) Once Leonardo established his horizon line and vanishing point he could place everything. He constructed his space just the way you did when you did your own perspective drawing. He made it even easier for himself by turning the construction lines at the bottom into a tile floor. He then set the entire scene inside a ruined palace.

*Look at the three works on these pages. How are they related? Which came first? Which one do you think is the final masterpiece?*

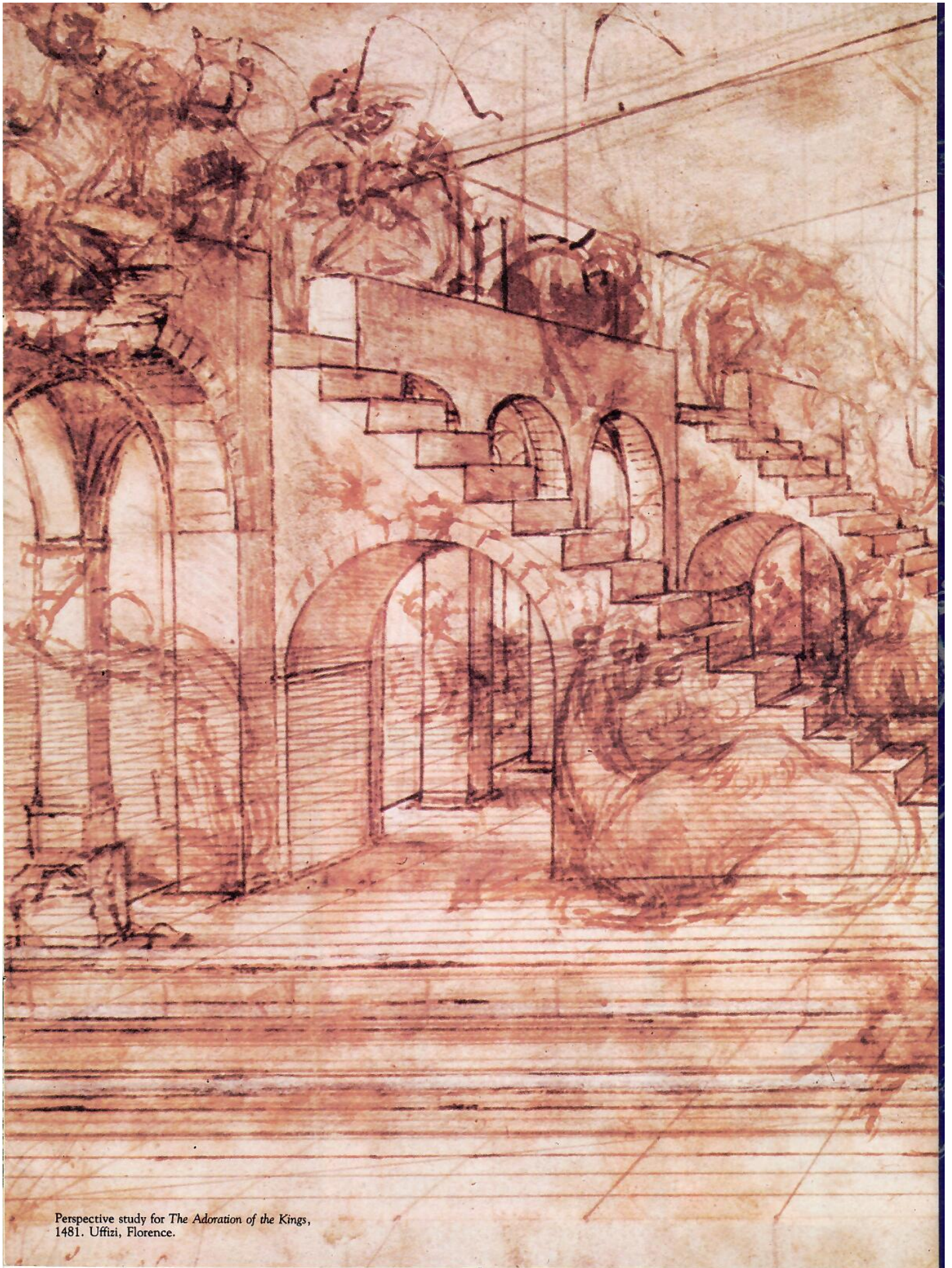


Leonardo da Vinci, *The Adoration of the Kings*, 1481-2. Uffizi, Florence.

Two staircases and an upstairs hall are all that remains of the palace. After he "built" his space, Leonardo could then add figures and animals.

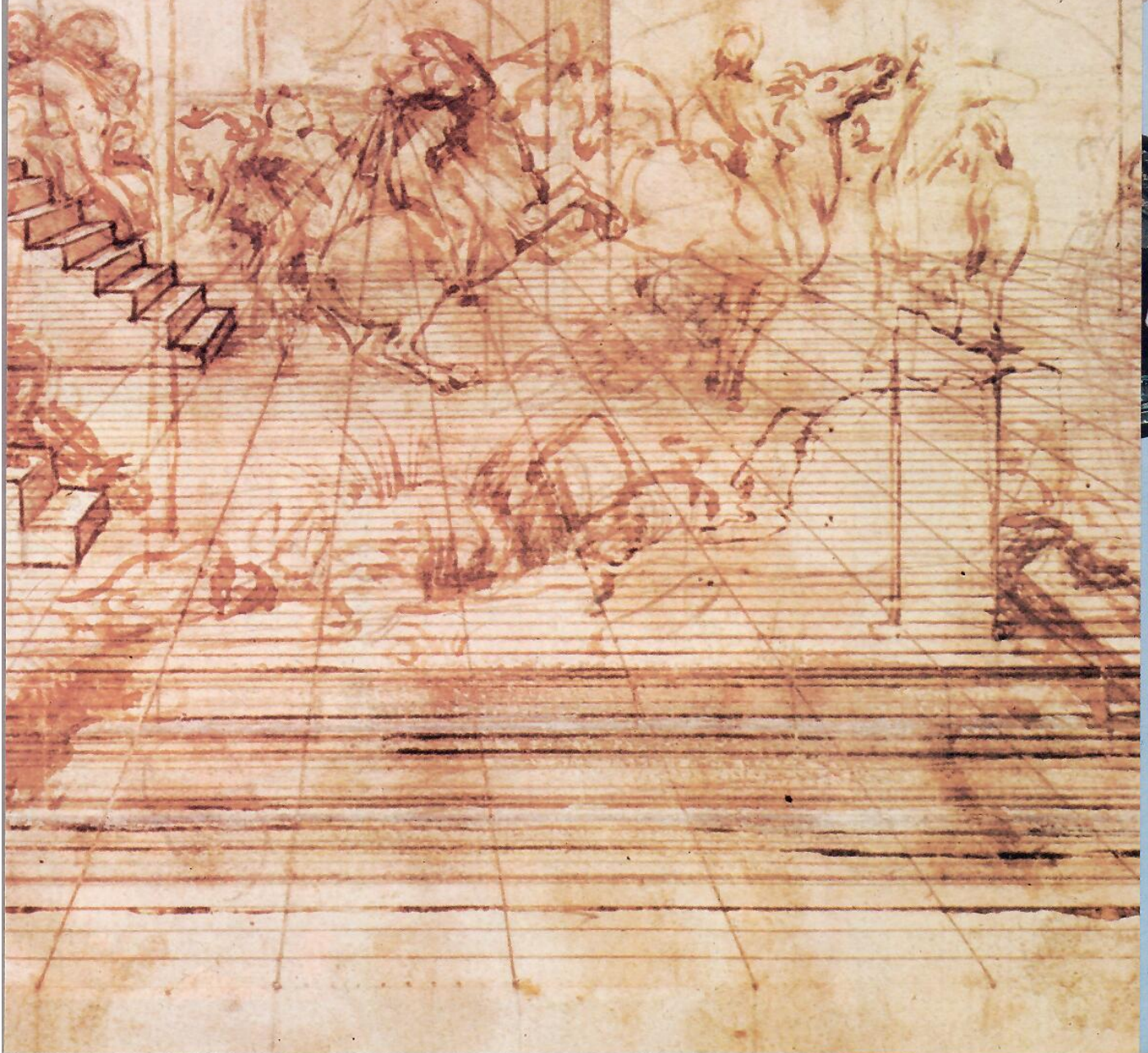
Now, look at the final painting, above. What has happened to the building, the tiles, and all the perspective lines? Leonardo almost completely abandoned his careful "plan" when he got to the actual painting. Leonardo never finished this painting. No one knows exactly why. He disappeared from the city one day and never returned to complete it. The

church people who hired him waited 15 years before giving up and hiring another painter. The painting above is really only a rough drawing. Look at all the details Leonardo has sketched in. How long do you think it would have taken to do the whole painting in oil colors? From what you've read about Leonardo, what do you think he was most interested in? Why do you think the work above is so different from the drawing for it at the right? Why didn't Leonardo ever finish this painting?



Perspective study for *The Adoration of the Kings*,  
1481. Uffizi, Florence.

Study for *The Adoration of the Kings*, 1478-80. Musée Bonnat, Bayonne.





# ARTS ALIVE

WHAT'S NEW IN THE ART WORLD DURING THE MONTH OF FEBRUARY.



**Three from France**  
Imagine yourself living on a French farm in the Alps or in a magnificent castle outside Paris surrounded by beautiful objects.

If you are in Washington, DC, Providence, Rhode Island or New York City this month, you'll get a chance to see three special shows. These exhibitions will show you just how all kinds of French people lived 200 years ago. Two of the shows feature priceless objects from the court of the Emperor Napoleon. The works range from rich costumes, jeweled wallpaper and lavish paintings to the actual death-mask of Napoleon himself. The third show offers quite a contrast. It contains items such as handmade clothes designed to be worn for a lifetime, carved shop signboards, and handmade shoes, considered a great luxury at that time.

Whichever show you see, you'll get a better idea of how people in Europe lived at the time our American Revolution was taking place.

*Napoleon: His Taste and Times.* Museum of Art, Rhode Island School of Design, Providence, Rhode Island. February 23 to March 26.

*The Arts Under Napoleon.* Metropolitan Museum of Art, New York City. April 6 to July 30.

*French Folk Art.* Renwick Gallery, Smithsonian Institution. Continuous to June 4.

### Why Are There So Few Women Artists?

The painting on the left is by Susan Eakins. The painting on the right was done two years later, by Thomas Eakins.

Thomas Eakins was a famous 19th-century American painter. He married the most famous woman artist of the century. Thomas' reputation has been growing steadily since his death, but his wife's name has been forgotten. How come? Susan Macdowell Eakins did

many paintings, most of which were sold after her death. A little while later, they reappeared, just signed "Eakins." Since her style was very much like that of her husband, this "mistake" was not discovered until recently.

Several shows of her work have been held recently and now Susan Eakins is beginning to get the recognition she deserves. Perhaps there aren't so few women artists after all.



Susan Macdowell Eakins (1845-1925), Spinning, 1870



Thomas Eakins (1845-1916), Spinning, 1881

### Art to Wear

Did you ever think that the clothes you're wearing right now might end up in a museum? The Metropolitan Museum of Art is currently exhibiting all kinds of clothing which was considered "ordinary" at the time. An outfit worn by a Samurai Warrior in 17th-century Japan is as exotic today as your clothing would seem to people living in 2178.

*Vanity Fair* is a show of thousands of costumes from the museum's collection which are being shown for the first time. The Metropolitan Museum of Art, New York City. December 1977 through August 1978.



Illustrations by George Gershinowitz

### Portrait of the Future?

Does this look like a baseball card? Well, it's actually a new work of art. Famous pop artist Andy Warhol (best known for his Campbell's Soup cans — See *Art & Man* February 1977 issue) is working on a new series of paintings. In addition to the portrait, left, of Tom Seaver, he's doing Muhammad Ali, Chris Evert, and Dorothy Hamill. Warhol believes that sports figures will be the only lasting symbols of the 1970's.



Andy Warhol (b. 1930), Tom Seaver, 1977. Coe Kerr Gallery.

### Art on Wheels

Perhaps you've been driving down the highway and suddenly you pass something that looks just like a painting on wheels. It probably belongs to one of a new group of artists called "vanners." Vanners are people who buy regular truck-like campers, or vans, and paint them in every way possible — inside and out.

Vanners paint their



Photo by Dale Moyer

fantasies and dreams on the outside of their wagons. They picture exotic tropical landscapes, scenes of the Wild West, huge hypnotic faces, savage animals and

bright *op* art designs.

All art movements begin somewhere. The next painted van you see on the road may end up in your history book.

