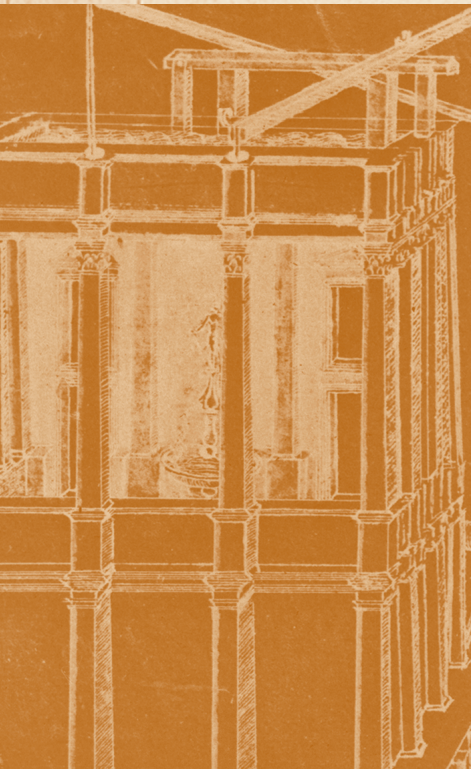


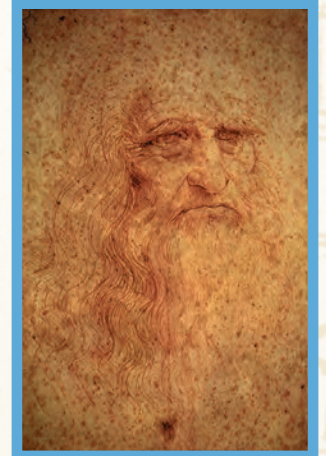
Leonardo da Vinci for kids



HIS **LIFE**
AND IDEAS



21 Activities



JANIS HERBERT

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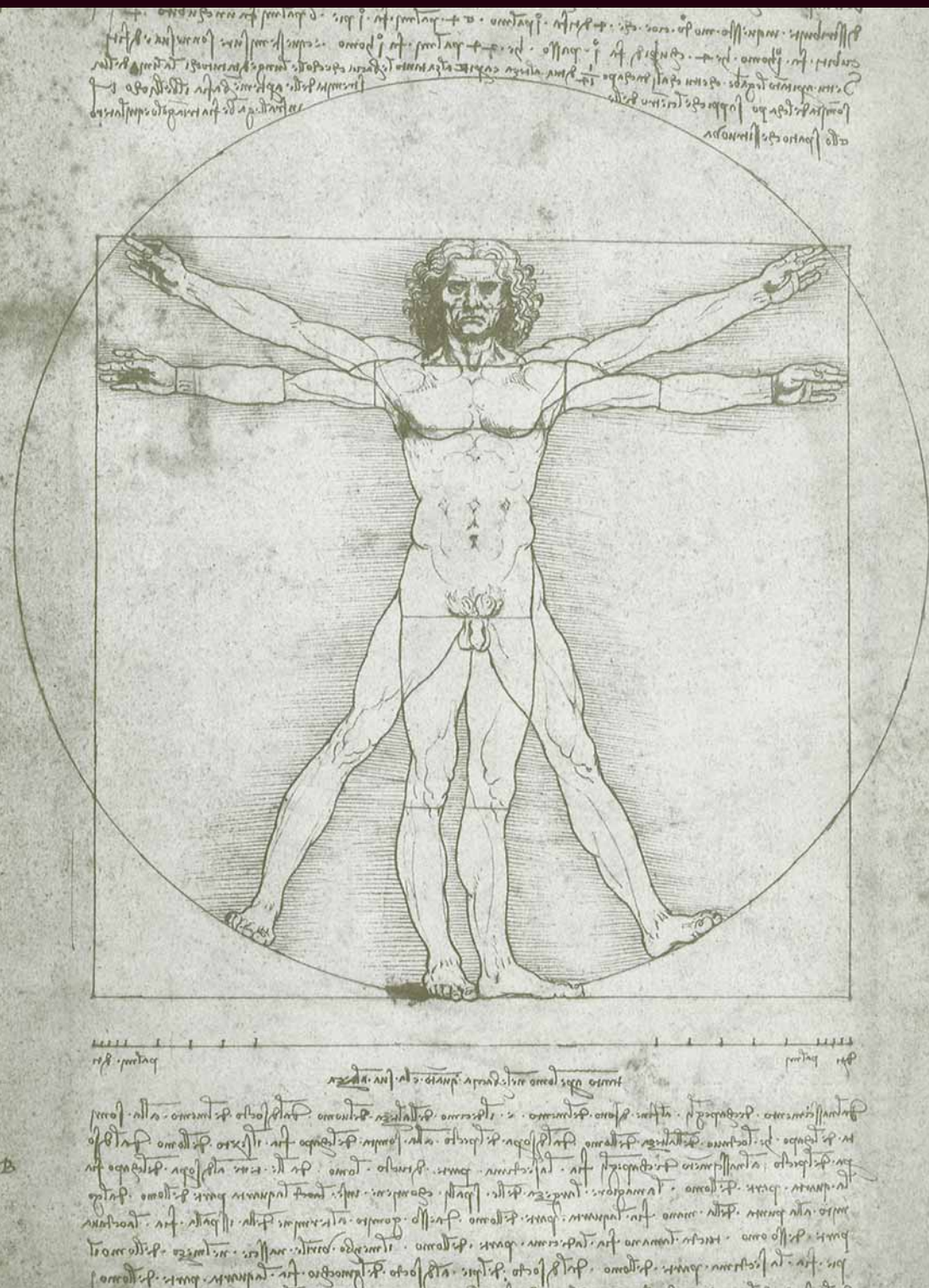
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CONTENTS



Acknowledgments viii

Note to Readers ix

Timeline x

ONE

A Boy in Vinci 1

Setting Up Your Studio 2

Observing Nature 3

Brush Up on Birds 4

TWO

The Young Apprentice 7

A Beaker for Brushes 8

Framed! 10

A Life Mask 13

Kitchen Clay 15

Perspective 16

The Renaissance 18

Animal Art 20

Well-Bannered 25

Pinpointing the Vanishing Point 27

THREE	A Genius at Work	29
	Leonardo's Letter to Ludovico	30
	Leonardo's Lute	31
	Mirror Writing	32
	A Discovery Notebook	33
	Measuring Up	35
	The Plague	38
	A Masque of the Planets	40
	Leonardo's Prophecies	41
	Eye Exercises	42
	Leonardo's Inventions	43
	Italy's Kingdoms and City-States	44
	Leonardo's Lunch	46
	For the Birds	47
	Salai's Aniseed Sweets	49
	Mental Exercise	50
	Leonardo's Lock	51
	Learn a Little Italian	52
	Flight	54

	A Parachute Kite	55
	Restoring <i>The Last Supper</i>	58
	Missiles and Math	60
FOUR	"I Shall Continue."	61
	The Nature of Sound	63
	Art Detectives	64
	The Craft of Cartography	65
	How Tall Is That Tree?	66
	Simple Machines	68
	Who Was Mona Lisa?	70
	Looking at Art	72
	A Renaissance Herb Garden	77
	Glossary	80
	Biographies	82
	Resources	85
	Bibliography	87
	Credits	88

Left: Diagram of
human proportions,
Leonardo da Vinci,
1492



1438

— Gutenberg invents printing with movable type

Leonardo born in Vinci



1452

1466

— Leonardo apprenticed to Verrocchio

Copernicus born in Poland

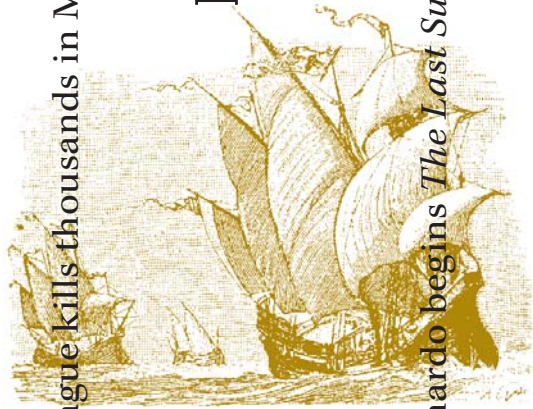
1473

1482

— Leonardo moves to Milan

The plague kills thousands in Milan

1485



1492

— Columbus sails the Atlantic and discovers the New World

Leonardo begins *The Last Supper*



1495

1499

— French capture Milan
Leonardo returns to Florence

Michelangelo creates statue of David

1501



1503

— Leonardo begins painting *Mona Lisa*

Leonardo returns to Milan — **1506**



1512 — Leonardo moves to Rome
Michelangelo finishes painting the
Sistine Chapel

Machiavelli writes *The Prince* — **1513**



1515 — François I becomes King of France

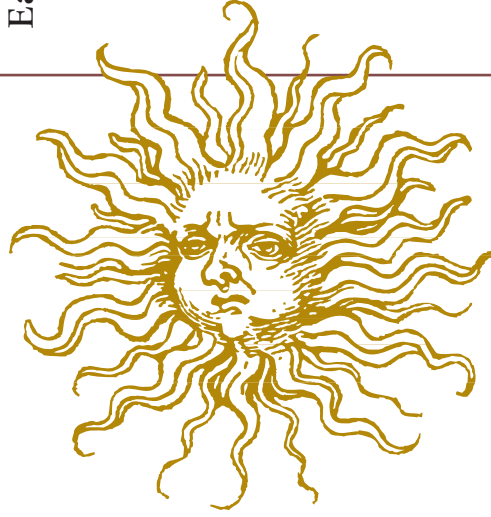
Leonardo moves to France — **1516**

1517 — Luther denounces the Catholic
church and the Reformation begins



Magellan's expedition begins its
voyage around the world
Leonardo dies — **1519**

1543 — Copernicus publishes theory stating
Earth revolves around the Sun



The Young Apprentice

The great city of Florence! High walls topped by great towers circled the town. As he approached, Leonardo could see the roofs, towers, and steeples of Florence and the great dome of a cathedral. He couldn't wait to explore. As the guards at the city gate inspected his meager belongings, he fidgeted with excitement.

Florence was a trading center, a big and prosperous town, and people and goods from many different lands could be found there. Vendors hawked their wares in loud voices. Their tables were piled with beautifully dyed cloth, silks, and spices from faraway lands. Donkeys pulled heavy carts

down the paved streets. Peasant folk shopped at stalls full of fruits and vegetables, meats and cheeses. The crowds parted as priests and great lords in velvet cloaks swept by. Leonardo gaped at all the people, the noise, and the confusion. He stared up at the large stone buildings of Florence, many topped with steep towers. He walked up the broad Via Larga on his way to his father's house, along with the donkeys and carts and throngs of people. The road took him past the famous Medici Palace and he wondered if he would ever see the powerful people who lived inside. The Medicis, a family of bankers and wealthy merchants, had ruled Florence for

over one hundred years. Leonardo's new home was a great city, so different from his quiet village in the hills.

When he reached his father's home, he discovered he wasn't to remain there for long. Ser Piero decided it was time for the young man to learn a trade. At that time, it was normal for a boy of twelve or thirteen years to

Left: Detail from
Baptism of Christ,
Andrea del
Verrocchio and
Leonardo da Vinci,
1472–75

Right: Detail from
*Adoration of the
Magi*, Leonardo da
Vinci, 1481–82



A Beaker for Brushes

work. Girls worked at home until they were married, but families sent their sons to work as apprentices to merchants or craftsmen for a period of years.

What could Leonardo do? He had no real education, having been brought up in the country. His illegitimate birth prevented him from entering his father's profession as well as many others. Children whose parents were not married were not allowed to become doctors or lawyers or even to attend the university. Many guilds would not accept a young man of Leonardo's background.

But when Ser Piero looked at the drawings his son carried in his knapsack, he knew what Leonardo should do. He put the drawings in a fold of his sleeve and carried them to the "bottega" (which is the Italian word for studio or workshop) of the famous artist Andrea del Verrocchio.

Verrocchio was the greatest sculptor of the time and the official sculptor of the powerful Medici family. He had a square face, dark curly hair, and a serious expression that showed that work was his life. His eyes missed nothing, and as he looked at Leonardo's drawings he knew that this young man would come to be an artist even greater than he was. Verrocchio's bottega on Via de Agnolo was as busy as the streets of Florence. His workshop received orders for paintings, sculpture, household decorations, armor, jewelry, and many other items.

This decorative jar for holding paintbrushes will look great in your bottega, or studio.

MATERIALS

Newspaper

Clear glass jar, empty and clean

Acrylic paints

Paintbrush

Spread newspaper out on your work surface. Hold the jar with one hand inside of it and paint a design on it. It's easiest to start at the bottom of the jar and work up. Let it dry for an hour. Use the jar to store brushes and pencils. (To help your brushes last longer, always clean them right after you've finished painting, then store them in your jar with the brush ends in the air.)

Leonardo's eyes opened wide when he saw Verrocchio's studio for the first time. The doors were open to the street and the teeming life of the city spilled inside. Playing children and their dogs ran through the rooms. Sometimes a pig or a chicken wandered in! Maestro Verrocchio stood in the middle of all the activity, alert to everything that was going on and directing the work of his young apprentices. Brushes and mallets and chisels hung on the walls, along with the sketches and plans of works in progress. One young man was firing up a kiln. Others hammered armor and pounded stone to powder. Easels, workbenches, and models stood everywhere.

Leonardo's father and Verrocchio shook hands. Young Leonardo was now apprenticed to the great artist. He would be a "discepolo" (which is the Italian word for an apprentice) and would spend many years learning to be an artist under the direction of Verrocchio.

Those years flew by. Leonardo grew up to be a handsome and strong young man. He worked long days and slept at night in the upstairs living quarters with the other apprentices. Maestro Verrocchio was kind but strict, and his apprentices worked very hard. For the first few months Leonardo did

nothing but sweep the floor, clean paintbrushes, and listen to the talk of the other apprentices and

*Portrait of a
Musician, Leonardo
da Vinci, 1490*



Pretend you're an apprentice in Verrocchio's bottega and make a picture frame. With these instructions you can make a frame for a small photograph of yourself or a friend.

MATERIALS

Scissors

Aluminum pie tin

Ruler

Pen (optional)

Piece of cardboard, 8 1/2 by 11 inches

(you can use the back of an empty cereal box)

Photograph, about 3 by 2 1/2 inches

White glue

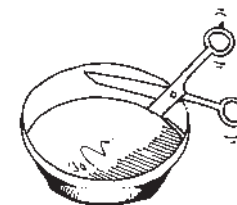
Stapler

Cut out the bottom circle from an aluminum pie tin. (Be very careful not to hurt yourself on the sharp edges of the tin.) Cut a rectangle in the center of the circle measuring 3 by 2 1/2 inches. This will be the front of your frame. Many pie tins have a design on them, but if yours doesn't, make a design on your frame by punching the tin from the back with a pen, being careful not to push the pen all the way through. Make a pattern all around the frame.

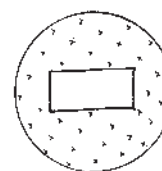
For the back, cut a piece of cardboard the same size as the front circle. Cut another piece of cardboard into a rectangle measuring 3 by 2 1/2 inches. This will be the backrest for the frame. Center and glue your photograph onto the cardboard back. Place the tin front over the cardboard back, centering it over your photo. Staple the two pieces together along the edges of the circle. Glue 1/2 inch of the cardboard backrest to the back of the frame, about a third of the way from the bottom.



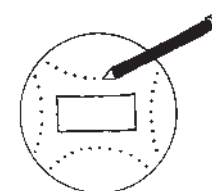
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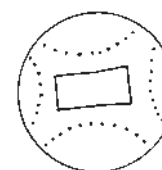
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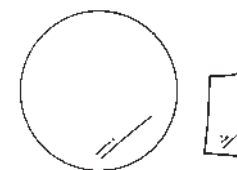
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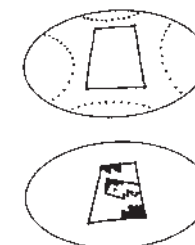
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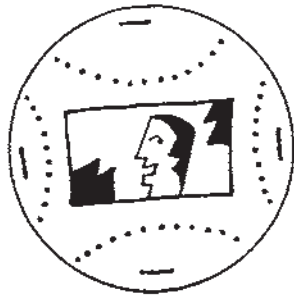
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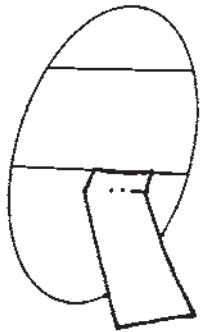
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8



9



10

craftsmen. He watched everything that was going on. And in Verrocchio's bottega, there was so much going on! The wealthy people of Florence would come in to have their portraits painted. They asked Verrocchio to make items of silver and gold, armor and coats of arms, statues, dishes, and furniture. Verrocchio and his apprentices even made bells for churches and cannons used to guard the town. This work was done by the older apprentices.

Leonardo cleaned and swept. Eventually he was given the daily task of grinding pigments to make paint. After he mastered each task he was given a harder one. He polished bronze statues. He learned how to make paintbrushes. He prepared wooden panels for painting. He longed for the day when he would be able to use these materials and not just prepare them for another artist. In the meantime he sketched whenever he had time.

One day Verrocchio received a very important commission. Florence's cathedral, Santa Maria del Fiore, was nearly finished after almost two hundred years of construction. The final touch needed was a great bronze globe to be placed on the top. It would be a challenge to create, for the globe was to be twenty feet across and weigh over two tons. And not only would it be difficult to make—Verrocchio and his apprentices

also had to figure out a way to install it on the top of the cathedral! Leonardo learned there was more to art than holding a paintbrush. The artists had to cast the globe in bronze, develop architectural plans, and even design the cranes and pulleys needed to install it. For this commission, art and engineering went hand in hand. In the workshop the apprentices calculated and designed for months. Plans covered the walls. On the spring day when it was installed, the whole town turned out to watch.

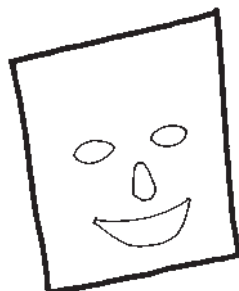
Meanwhile, there were still tombstones to create out of marble, death masks to make out of plaster, and coats of arms and banners to design. Leonardo was finally allowed to help on small assignments and he was happy to be using the brushes he had made. He painted the backgrounds of pictures. He also posed for a statue by Verrocchio. The Maestro captured Leonardo's fine features and thick, wavy hair in a figure of David.

The bottega was a favorite place for artists to gather and talk. Verrocchio's great talent attracted many artists who came to learn from him. Sometimes one of the apprentices would pick up a lute and sit in a corner and play. The young men argued about their ideas, teased each other about their progress, and taught each other new techniques.



Statue of David,
Andrea del
Verrocchio, 1476

People often asked Verrocchio to make death masks, masks of the faces of people who had died, as keepsakes of their loved ones. This is a life mask, one that displays your inner self—your interests, hobbies, and dreams.



MATERIALS

Scissors

Piece of cardboard, 8 1/2 by 11 inches

(you can use the backing from a pad of paper)

Old magazines, postcards, and photographs

White glue

Crayons or colored markers

Paints (optional)

Paintbrush (optional)

Stapler

10-inch length of string



Cut out holes for the eyes, a nose, and a mouth from the cardboard. Cut out pictures, words, and phrases that represent the things you love from the magazines, postcards, and photographs. If you like sports, you might cut out pictures of people playing basketball. Do you have a pet? Maybe you will want to use a picture of your dog or cat. If you love nature, go out and collect leaves and flowers to include on your mask. Also, cut out words that describe you.

Make a collage of all of these pictures and words on the face of your mask, gluing them onto the cardboard. You can use crayons, markers, or paints to decorate the mask as well. Cover every part of the cardboard. Staple each end of the string to the back of the mask, about 3 inches from the top. Hang your mask on a wall.

We buy paint at the art supply store, but when Leonardo was an apprentice in Verrocchio's workshop he had to make his own. Oil paints were brought to Italy by visiting Flemish artists. Earlier artists used tempera paints and water-based paints. Painting with oil allowed artists to create different shades and to paint one layer over another without mixing up colors. The paint went on surfaces smoothly and didn't run.

Pigments (or colors) were made from many things, such as ground rocks, precious stones, and plants. Artists ground these into a fine powder and then mixed them with liquids like oil or water to make paint. The color ultramarine, a bright blue, was made from grinding up a precious stone called

lapis lazuli. Artists made bright yellow by crushing crocuses. They even made brown paint using crushed mummies from Egypt! Black pigment came from burnt wood and soot, green from copper, and purple from crushed shellfish.

Before the introduction of oil paints, artists used tempera paint

made by grinding the pigments into powder and mixing them with egg yolk. In Leonardo's time, they usually used this type of paint on wooden panels covered with linen. When painting murals with the "fresco" technique (see explanation on page 80), they used water-based paint. For a time, gold leaf was very popular. Artists would beat the gold into thin sheets and then press it on the surface of the painting.

Top: *The Tribute of Money*, Masaccio, 1427

Bottom: Detail of *Madonna Enthroned* (front of Maestra Altar), Duccio, 1308–11



Kitchen Clay

Oil painting had just been introduced to Italy by visiting artists from northern Europe and Verrocchio's students were very excited about the new medium. Leonardo spent a lot of time mixing different materials to see what would make the best paint. He ground up different substances for pigments and mixed them with linseed or walnut oils. He tried new techniques to use with the oil paints. Leonardo had such great skill using the new medium that he soon surpassed all the others.

Another new idea the artists discussed was how to show perspective and depth in painting. Before Leonardo's time, objects and people in paintings were shown as flat and two-dimensional. The artists in Florence developed techniques to portray objects and people as having depth and as living in space. Leonardo learned to carefully calculate the placement of lines in his drawings and paintings to create this illusion of perspective. He used math and geometry to create his art.

It was an exciting time and the perfect place to be an artist. Florence was a great center for art and sculpture, and whenever Leonardo could leave the studio he went to look at these works of art. Leonardo spent many hours studying the frescoes and shrines and statues of Florence. He also sought out teachers in the fields of science, mathematics, and philosophy.

In Verrocchio's studio, Leonardo learned how to make statues from bronze, marble, and terra-cotta. You can carve sculptures out of wax or soap, shape them from modeling clay from the store, or make this clay in your own kitchen.

MATERIALS

4 cups flour

1 cup salt

Bowl

1 1/2 cups water

Combine flour and salt in a bowl. Add water and mix together. Knead with your hands until it is smooth. If you'd like color, you can divide it up and add a couple of drops of food coloring to each piece, kneading until the color is incorporated. Your clay is now ready for molding into shapes, or it can be saved up to a week if you wrap it in plastic and store it in the refrigerator.



In paintings from the Middle Ages, objects and people looked flat and out of proportion. It was during the Renaissance that artists began to use perspective in their paintings and drawings. Artists began to draw things as they saw them in nature.

When you think about it, showing depth and space in a picture on a flat surface is no easy thing. Leonardo wrote about perspective in his notebooks. He said, “Among objects of equal size, that which is most remote from the eye will look the smallest.” In the real world, the farther away things are, the smaller they look. Just look down a row of telephone poles and see for yourself. The poles closest to you look bigger than the ones farther away, even though they are the same size. In Renaissance art, like real life, the closer figures look larger and the farthest ones look smaller. You can see another example of perspective in the illustration of railroad tracks on page 27. The parallel lines seem to come together as they become more distant from you. In art, that point where the lines come together is called the vanishing point.

Top: Detail from *The Month of August* in *The Book of Hours*, The Limbourg Brothers, 1413–16

Perspective also refers to the way an object appears to change when you look at it from different points of view. If you look at a box straight on, you will see a square. If you look at it from another angle, you will see that it is a box, with depth and width.

Bottom: *Christ Giving Keys to St. Peter*, Perugino, 1481

Leonardo and his fellow artists used mathematics to plot the placement of objects in their paintings and drawings. They used other techniques to show perspective too, like shading and colors. They painted more distant objects and people in a blurry, unfinished way, which is what things look like when they’re far away. The effect of greater distance was also created by using colors that were paler or with a blue tone.

Leonardo thought it was important for painters to understand how to use math and color to create a painting instead of just copying from other artists. He said that artists who painted without this knowledge were like sailors who get into a ship without a rudder or compass.



Detail from
*Madonna with
Child and Vase of
Flowers*, Leonardo
da Vinci, late
1470s

Leonardo lived in an exciting time during an era known to us as the Renaissance. The Renaissance began in Italy and spread to the rest of Europe, spanning the years from around 1400 to 1600.

The word Renaissance refers to the fascination people had at this time with ancient Greece and Rome. It is a French word meaning “rebirth” or “reawakening.” People were rediscovering ideas about philosophy and art from these ancient times. They were also examining new ways of thinking and of expressing themselves.

Previous to this time, the Middle Ages (sometimes called the Dark Ages) stretched for many centuries. Pirates on the seas and robbers on land kept everyone frightened and close to their homes. People kept their heads down and questioned nothing. They lived their entire lives in the same village and were uninformed about events in the world.

Warfare was constant and brutal. Leaders rose from the villages and became lords of larger domains, with knights to serve them. As time went by only the great lords with large armies could hold their lands, and smaller kingdoms began to fall. Eventually nations formed. As the nations became larger and wealthier, systems of law became established, economies prospered, and the arts and sciences flourished.

Suddenly, people began to look beyond the superstitious and fearful world of the village. There was a renewed interest in the world and in mankind that became known as humanism. During the Renaissance there were great breakthroughs in anatomy, medicine, astronomy, and mathematics. The printing press was invented and books became available to people for the first time. It was also a time of world exploration and the beginning of modern science. Nicolaus Copernicus determined that the earth revolved around the sun. Many explorers sailed the seas in search of trade routes to the Far East. Christopher Columbus crossed the Atlantic to land in America. Vasco da Gama sailed around Africa and reached India. Magellan’s voyagers circled the globe.

The artists of the Renaissance also explored new ways. Inspired by the spirit of the age, they experimented with many different techniques. They created the greatest art the world has ever known. Some of the early Renaissance artists Leonardo admired were Giotto and Masaccio. Many of the finest artists of Leonardo’s time, such as Botticelli and Perugino, worked with him in Verrocchio’s studio. Michelangelo lived at the Medici court. He created the magnificent sculpture of David and painted the ceiling of the Sistine Chapel in Rome. Other Renaissance painters include Titian and Raphael, whose creations are noted for their use of perspective and for their celebration of the individual and of nature.

With his questioning spirit and thirst for knowledge, Leonardo was entirely suited to this time. He explored so many new ideas in art and science that he is often referred to as a “Renaissance man.”

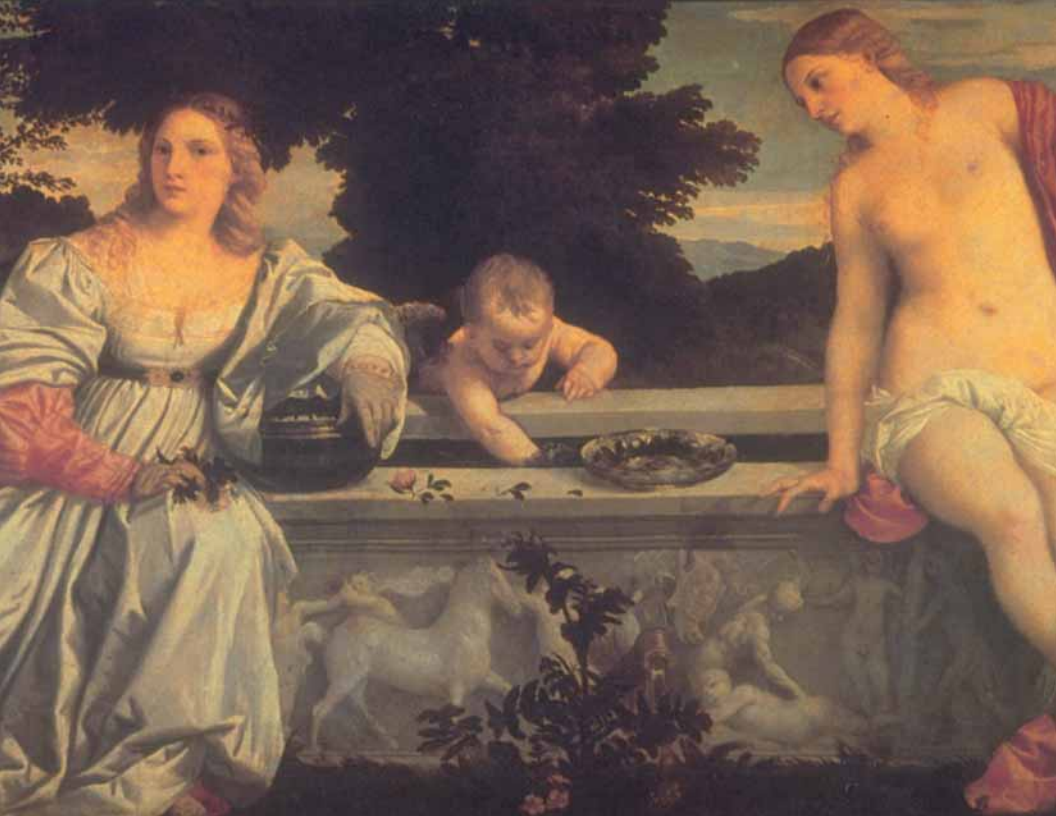




Opposite page,
top: Detail from
*Expulsion of Adam
and Eve*, Masaccio,
1425–28



Opposite page,
bottom: Detail
from *St. Michael
Victorious*,
Raphael, 1518



Top left: Detail
from *Adoration
of the Magi*,
Botticelli, 1475



Top right: Detail
from *Marriage
of the Virgin*,
Raphael, 1504

Bottom left: Detail
from *Sacred and
Profane Love*,
Titian, 1514

Bottom right:
Detail from
The Holy Family,
Michelangelo,
1503

Leonardo began to think that everything was connected in some way, and he wanted to learn it all. He used what he learned in his paintings and drawings. And just like he did as a child, he took paper and chalk with him everywhere and sketched everything he saw.

Some of the things that Leonardo liked to sketch most were animals. He studied birds' wings so he could paint the wings of angels in a realistic way. Leonardo loved horses and spent hours at stables watching the way they moved and sketching them.

Leonardo felt strongly that an artist must learn from nature and draw inspiration from what he or she observes. He thought it was important to thoroughly understand a thing in order to paint it.

This passion for observation began to show in Leonardo's work. The plants and flowers in his paintings looked exactly as they did in the fields. His portraits were so realistic, it was as if the people were right there. Eventually he graduated from his apprenticeship and became a "garzone," or journeyman.

His father stopped by the bottega one day and asked Leonardo for a favor. "Would you paint something on the front of a shield for a friend of mine?" he asked. Leonardo took the wooden shield and smoothed it down and prepared its surface. He thought carefully about the use of a shield while trying to decide what to paint on it. A shield held

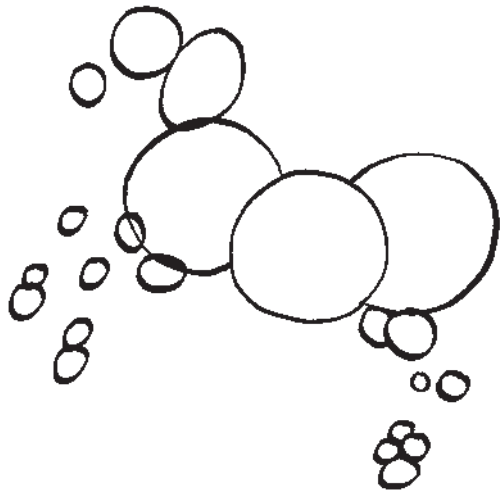
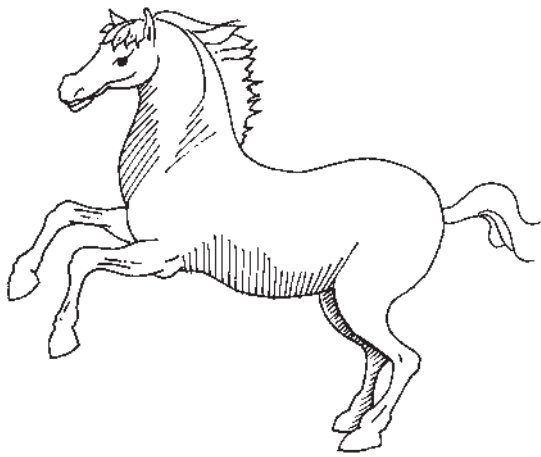
When Leonardo was a young apprentice in Florence, he spent all of his spare time drawing. Often, he went to the Medici family's private zoo and drew the animals there. Take a trip to the zoo to sketch the animals or draw your pet at home.

MATERIALS

pencils (see page 2 for recommendations)
Sketch pad

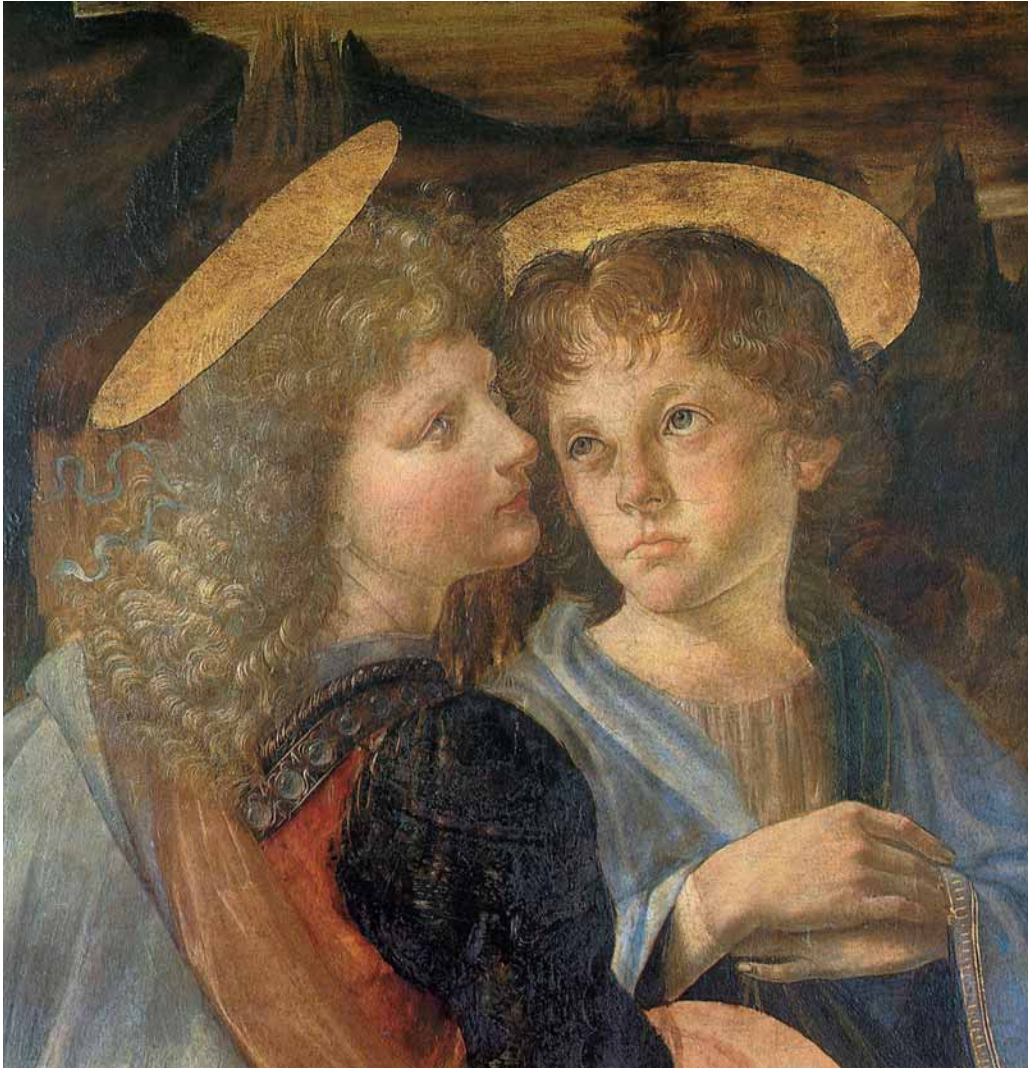
The most important thing to do when learning how to draw is to learn how to look. Study Leonardo's sketches of horses. What is special about the shape? The parts of the body? Note the horse's rounded haunches, barrel-shaped body, and powerful muscles. These are the features you will want to emphasize. The second most important thing to do is practice. Even if you think you can't draw, give it a try. Can you draw circles and ovals? That's all you need to start.

Draw the animal using geometric shapes. For the horse, you might start by lightly drawing a large circle for his rear, a long oval for his body, and another circle for his chest. Draw his neck and head as ovals. Draw narrow cylinders for his legs and small ovals for his feet. While making this preliminary sketch, notice proportion (for instance, the size of the head compared to the body). Go over the shapes, building on them with heavier lines. Hold and move the pencil in different ways to get different effects. Draw soft, shaded lines lightly with the side of the pencil. Press down hard and move it back and forth for a hard, jagged line. Pencil in the distinctive features, such as the hooves and tail. For the horse, use soft, short strokes with the pencil held slightly at an angle to capture the texture of his hair. Use longer lines of different sizes for his flowing mane.



*Make yourself
a master of
perspective, then
acquire perfect
knowledge of the
proportions of
men and other
animals.*

—Leonardo



Detail from
Baptism of Christ,
Andrea del
Verrocchio and
Leonardo da Vinci,
1472–75

up to an enemy in battle should present a terrifying image, he thought. He decided to decorate it with a painting of a menacing dragon.

Whenever he could get away, Leonardo wandered out to the countryside and came back to his room with his pockets full of the strangest things. He collected lizards and beetles, the skeletons of birds, scorpions and toads, bats and snakes. He used parts of all of these creatures as models to draw a monstrous dragon, a frightening mix of horns and tail, teeth and wings. He painted the dragon coming out of a cave with fierce eyes and fire flaring from its nostrils. When he finished he placed the shield on an easel and pulled a curtain over the window so that only a shaft of sunlight fell on it. Then he called on his father to tell him the shield was finished.

When Ser Piero walked into the dark room his eyes fell on the sun-lit dragon. He stood frozen with fear. Leonardo knew then that his work was good. The shield would stop any enemy in his tracks.

Maestro Verrocchio put Leonardo to work on part of a painting that he was working on, *Baptism of Christ*. He had Leonardo paint one of the angels in this work. When Verrocchio saw the angel that Leonardo painted, he was stunned. It was so beautiful and so much better than his own work that Verrocchio vowed he would never touch a paintbrush again.



In 1472, when Leonardo was twenty years old, he became a master craftsman of his trade. He had earned the right to the title of Maestro. He stayed at Verrocchio's bottega and worked with him for a few more years. He started to receive a few commissions of his own. He painted *The Annunciation*, a beautiful painting of the angel Gabriel appearing to Mary. He took special care to paint the wings of the angel so that they resembled the birds he studied so carefully. He painted a portrait of a Florentine lady, Ginevra, encircling her head with a halo of juniper. This was a visual play on words.

Ginevra's name was similar to the Italian word for the juniper bush, "ginepro."

But life wasn't all work. There was plenty of opportunity for fun in Florence, where nearly every month there was a carnival, tournament, or parade. Leonardo enjoyed parties and liked to wear fine clothes. He loved to ride horses and play music. He wrote poems and riddles and jokes.

Lorenzo de Medici was the powerful head of the ruling family of Florence. He was young and handsome and he liked hunting, dancing, and poetry. He was known throughout Florence as Lorenzo the Magnificent.

The Annunciation,
Leonardo da Vinci,
1473–75

Lorenzo often held great parties and tournaments and always hired Verrocchio and his apprentices to create wonderful backdrops and floats for these events. They also made carnival masks and disguises for people attending the parties.

On the days when carnivals were held, all of Florence left work to celebrate. From every window tapestries and garlands of flowers hung down the stone walls. All of the church bells rang. Friars sang ballads in the streets. Banners in the city's colors of red and white flew in the wind. Everyone dressed in their finest clothes and stood on their balconies and roofs to watch the event. Falconers with hawks on their wrists and dog keepers, each with ten panting dogs to a leash, paraded by. Fine lords and ladies in carriages waved. Trumpets blared and horses and riders filed by, led by pages carrying banners. These were the competitors for the tournaments, the "jousts," on their fine horses. The jousting went on all day in the Piazza Santa Croce. Leonardo watched it all with great excitement. At the end of the day Lorenzo would lead dancers through the streets.

The townspeople loved the tournaments, but they didn't all love the Medici family. Another great family of Florence, the Pazzi family, plotted against Lorenzo. One day Lorenzo and his brother Giuliano attended mass at the cathedral. As the bell rang for

the end of the service, the Pazzi conspirators entered the church with swords in their hands and attacked the Medici brothers. Giuliano was killed immediately, but Lorenzo drew his sword and kept the killers at bay until people heard his cries and came to help.

Leonardo was asked to create an altarpiece for a monastery. The monks chose the subject of the painting, and Leonardo drew many preliminary sketches for *the Adoration of the Magi*. In this painting, the three "Magi," or wise men, come bearing gifts to the Christ child. Other men and animals stand looking on in wonder. Leonardo experimented with various compositions. He calculated lines of perspective. Though he worked on this painting for a very long time, he never finished it. It was perhaps the first, but not the last, time that Leonardo would leave a work unfinished. Although unfinished, the painting showed Leonardo's great talent. He placed the main figures in the painting—Mary, the Christ child, and the three magi—in a pyramid, which gave balance to the work. Also, while most of the artists of his time showed their subjects clearly outlined, Leonardo painted his subjects by using a subtle combination of light and shadow. The people in his paintings seemed to emerge from the shadows into the light. This technique of Leonardo's, the use of light and dark, is known as "chiaroscuro."

Great families, knights, and guilds (associations of merchants or craftsmen) all had banners, each with colors and patterns of special significance. Many showed animals symbolizing qualities such as strength (a bear) and courage and generosity (a lion). The Medici emblem showed six pills (historians think that's because someone in the family was a doctor). Create a special banner for your family.

MATERIALS

Pencil

Several sheets of drawing paper, 8½ by 11 inches

Ruler

Scissors

Felt fabric in your favorite color, about 3 by 2½ feet

Assorted smaller pieces of felt in a variety of colors

Needle

Thread

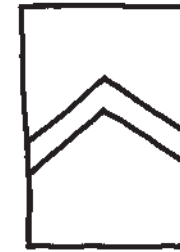
Dowel rod, ¾ inch in diameter and 36 inches long

Assorted buttons, ribbons, beads, or sequins (optional)

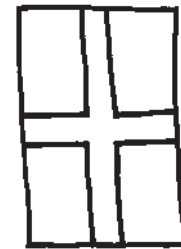
Piece of string, about 48 inches long

With your pencil, draw your designs on paper. You could use a pattern from the Middle Ages, such as an upside-down "v" called a "chevron," a cross, or a "fess," which is a wide band running across the middle. Animal symbols were often used on shields and banners during the Middle Ages. You might think of other images that are good symbols for your family. Do you all have big feet? Make a giant shoe! A design for an artistic family might include a palette with 4 or 5 circles of paint on it.

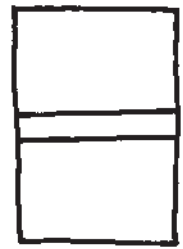
After you have drawn your designs on paper, cut them out to use as stencils. Fold the large felt piece down 1 inch at the top (the top should be about 2½ feet wide). Use your needle and thread to baste, or sew, this flap down all the way across the top to create a tunnel to run the dowel rod through. At the bottom, cut a triangle so that your banner will have two tails. Place the stencils over the smaller felt pieces and cut out your designs. Sew them on the banner. You can also sew on decorative buttons, ribbons, beads, or sequins if you like. Slide the dowel rod into the top of the banner. Tie the string to each end of the dowel rod and hang your banner up on a wall.



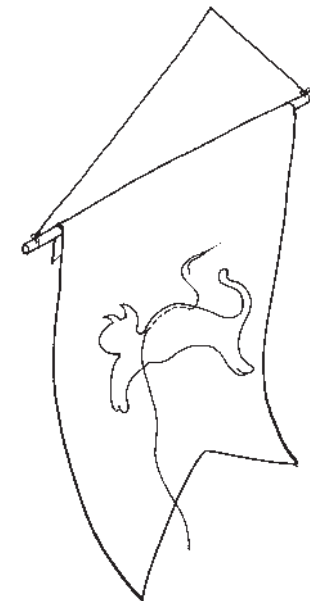
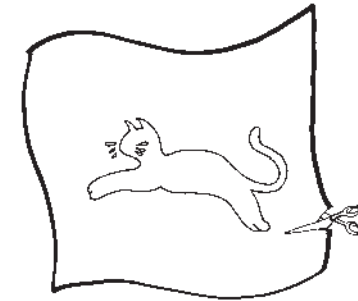
chevron



cross



fess





Leonardo was still learning and his work was excellent, but he began to feel discouraged. He was having problems getting paid by the monks. Other young artists were advancing and getting better commissions. He felt unappreciated in Florence and began to wonder if he could ever make his own way there. He had been happy during his stay with Verrocchio, but now he felt confined. He wanted to stretch his wings.

*Adoration of the
Magi, Leonardo da
Vinci, 1481–82*

Pinpointing the Vanishing Point

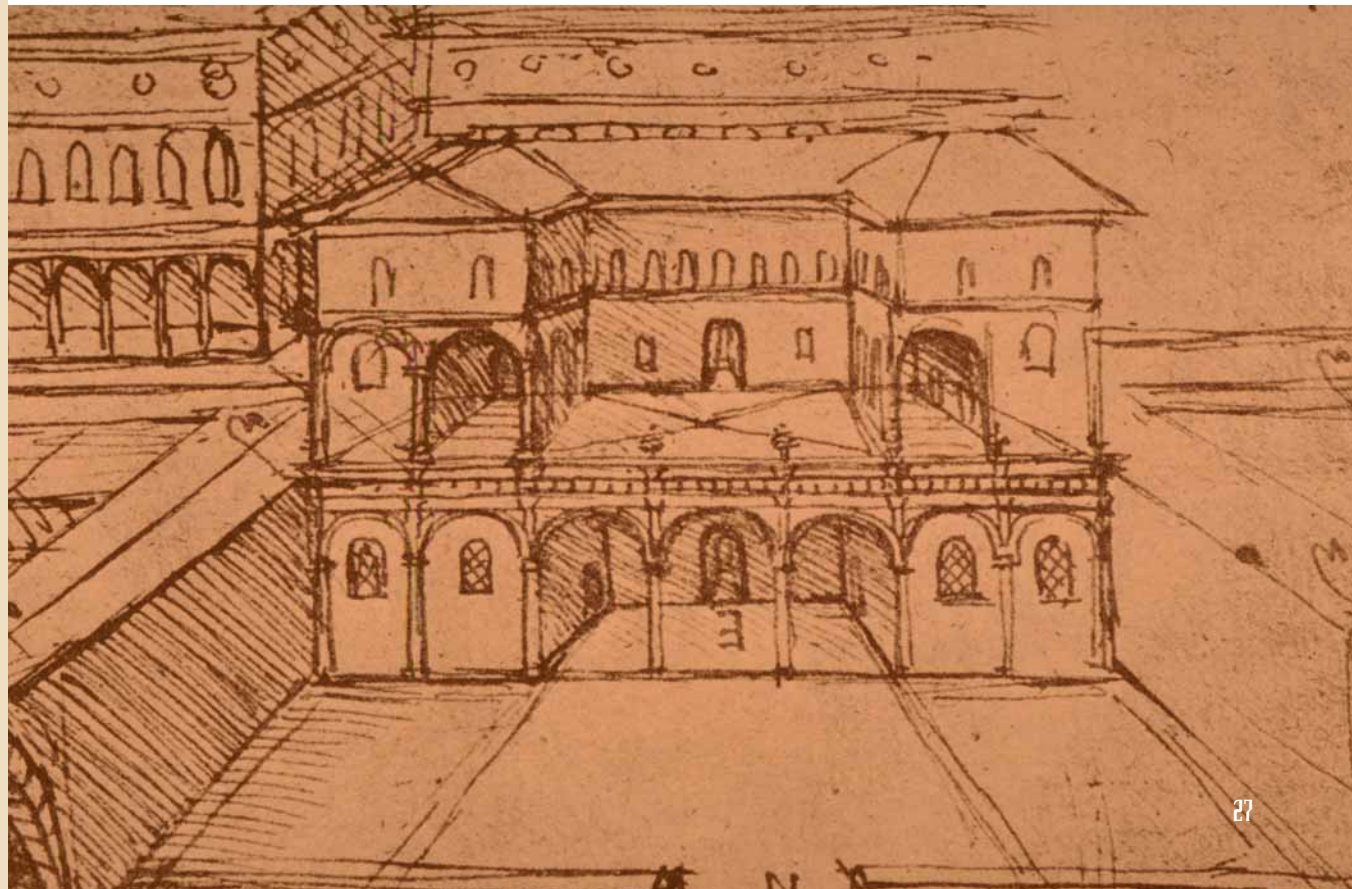
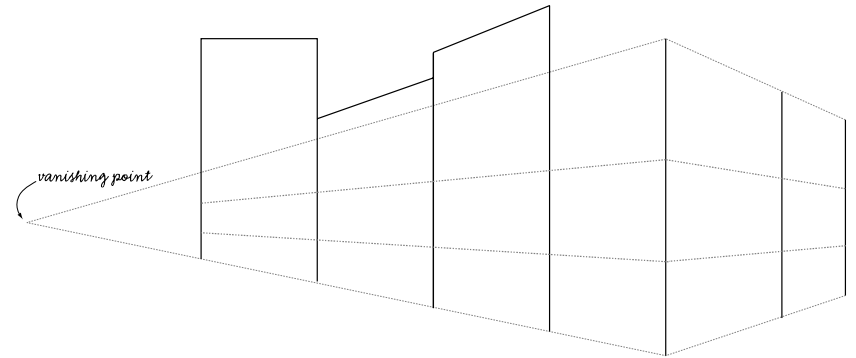
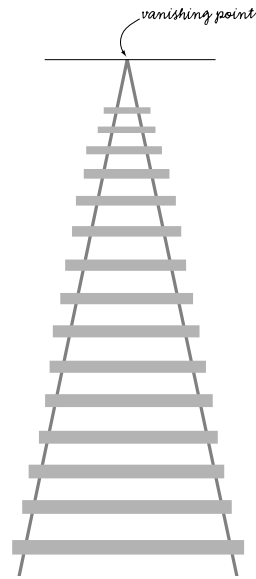
Look at the drawing of the railroad tracks. It's easy to find the vanishing point in this picture. It's the spot where the parallel lines of the tracks appear to come together in the distance.

Now look at this drawing of buildings. Does something look odd? Out of place? You can probably tell that the building on the left is drawn incorrectly. It is out of perspective. If you drew an imaginary line along the tops and bottoms of the buildings into the distance, those lines would all come together at one place—the vanishing point. However, the line drawn from the top of the left building would not.

See if you can find the vanishing point in other drawings. Look at the illustration of *The Last Supper* (see page 56). If you draw imaginary lines along the tops of the doors toward the middle of the painting, they will meet at the top of Jesus' head. Lines that follow the angle of the ceiling do the same. Leonardo designed this painting

so that the vanishing point would be directly at the head of Jesus. The viewer's eyes are automatically drawn to the vanishing point.

Right: Drawing for a city on two levels, Leonardo da Vinci, early 1490s





Detail from
The Benois Madonna,
Leonardo da Vinci,
1480

\$16.95

ages 8 & up



Leonardo da Vinci was a great inventor, military engineer, scientist, botanist, and mathematician, as well as a consummate painter and sculptor. Children will love learning about the man who painted the *Mona Lisa* and invented the bicycle among countless other machines—the armored tank, diving suit, and airplane—centuries before they were built. History, science, and art come alive in this book as children learn about the Renaissance and the Plague, simple machines and the mystery of flight, and the use of perspective and vanishing point in painting. Da Vinci's interests and accomplishments are explored in engaging and fun activities where children can:

- ✦ Sketch birds and other animals as Da Vinci did as a child
- ✦ Test perceptions of height and distance and then measure the actual height of a tree
- ✦ Determine the launch angle of a catapult, like a military engineer, and hit a target on the first shot
- ✦ Make a map from a bird's-eye view
- ✦ Try mirror writing as Da Vinci did in his notebooks
- ✦ Make a lute like his gift to Ludovico, the ruler of Milan



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