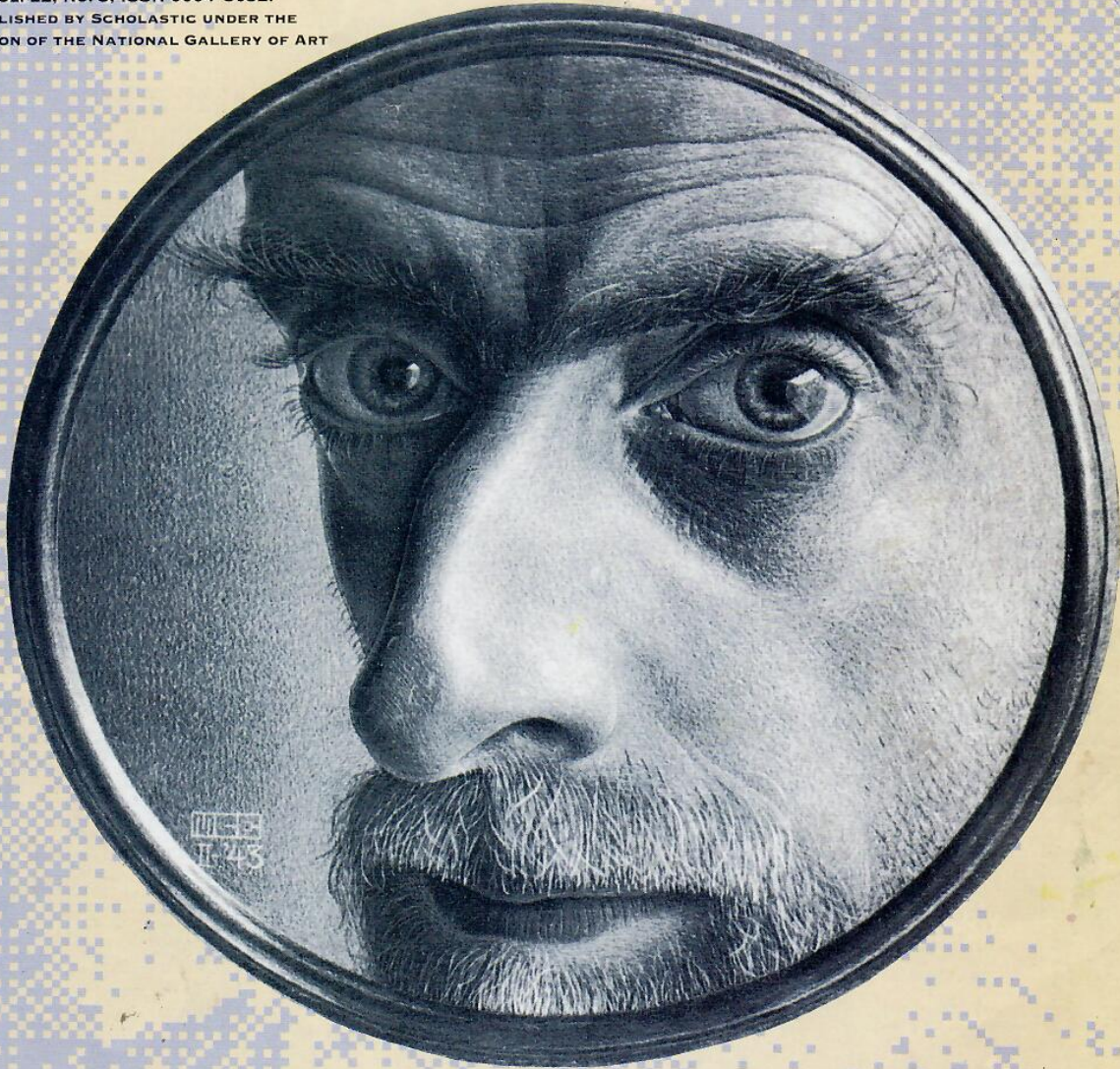


art & man[®]

DEC. 1991 / JAN. 1992,

VOL. 22, No. 3, ISSN 0004-3052.

PUBLISHED BY SCHOLASTIC UNDER THE
DIRECTION OF THE NATIONAL GALLERY OF ART



M.C. Escher

OPTICAL ART

 SCHOLASTIC



COVER: M.C. Escher (1898-1972). Self-portrait, 1943. Lithograph, 9 3/4" x 10".

THE IMPOSSIBLE

Universe

OF M.C. ESCHER

art & man

Maurice R. Robinson, founder of Scholastic, Inc., 1895-1982

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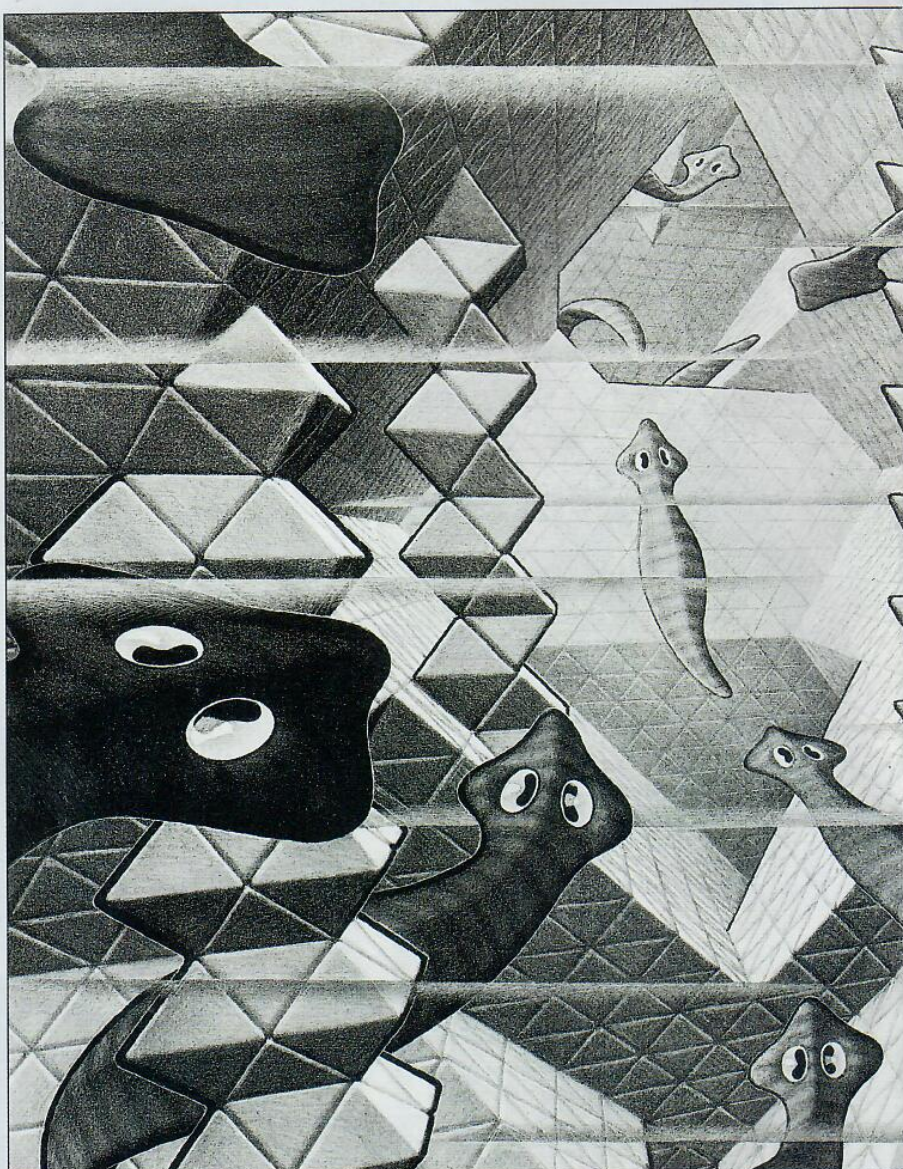
POSTAL INFORMATION

Art & Man (ISSN 0004-3052; in Canada, 2-c no. 9360) is published six times during the school year, Sept./Oct., Nov., Dec./Jan., Feb., Mar., Apr./May, by Scholastic Inc., 351 Garver Rd., P.O. Box 2700, Monroe, OH 45050-2700. Second-class postage paid at Monroe, OH 45050-9998 and at additional mailing offices. POSTMASTERS: Send notice of address changes to ART & MAN, 2931 East McCarty St. P.O. Box 3710 Jefferson City, MO, 65102-3710.

PUBLISHING INFORMATION

U.S. prices: \$6.95 each per school year, for 10 or more subscriptions to the same address. 1-9 subscriptions, each \$13.50 student, \$22.00 Teachers' Edition, per school year. Single copy \$1.75 student, \$3.50 Teachers'. (For Canadian pricing, write our Canadian office, address below.) Second-class postage paid at Monroe, OH 45050-9998 and at additional mailing offices. Communications relating to subscriptions should be addressed to ART & MAN, Scholastic Inc., 2931 East McCarty Street, P.O. Box 3710, Jefferson City, MO 65102-9957. Canadian address: Scholastic-TAB Publications, Ltd., 123 Newkirk Rd., Richmond Hill, Ontario L4C 3G5. Available on microfilm through Xerox University Microfilms, Inc. 300 N. Zeeb Rd., Ann Arbor, MI 48106. Also available on microfiche through Bell & Howell Micro Photo Division, Old Mansfield Rd., Wooster, OH 44691. Printed in U.S.A. Copyright © 1991 by Scholastic Inc. All Rights Reserved. Material in this issue may not be reproduced in whole or in part in any form or format without special permission from the publisher.

2 ART & MAN



Issue designed by Nicholas E. Torello

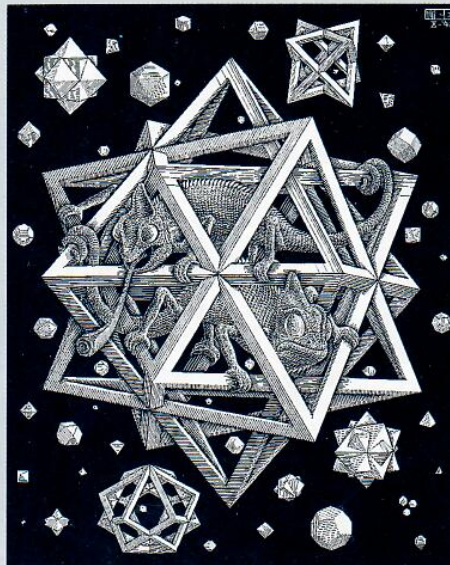
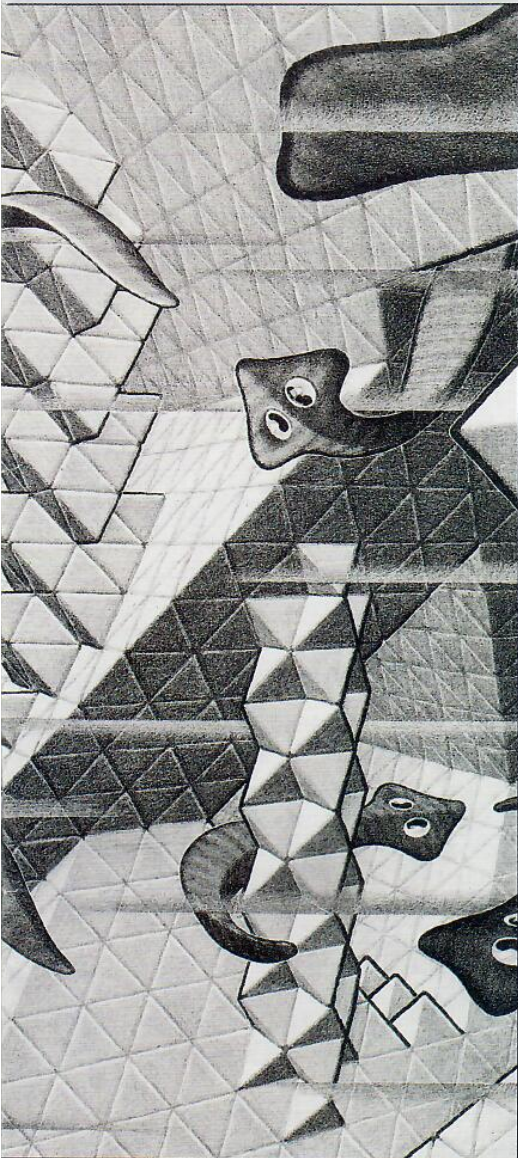
“While drawing, I sometimes feel as if I were being controlled by the creatures I am conjuring up. They ignore me during their birth and I cannot much influence their development. They are difficult beasts.”

These words were written by the artist whose haunted-looking face stares out at us from the cover. Best known for fantastic graphic images like the two scenes shown below, Maurits Cornelis Escher was born in 1898 in a small town in Holland. Escher, the son of a hydraulic engineer, was not a very good student. He managed to graduate from high school largely because the work he did in his art classes was so outstanding. His father sent him to architectural school and Escher immediately transferred to the graphic art department. He left school in 1922 and

moved to Italy. For the next few years he traveled extensively, eventually moving back to Holland in 1935.

Throughout all his travels, the artist had been searching for a way to visualize a concept that had been haunting him—the idea of many different worlds existing in the same place at the same time. In 1936, while sketching in the Alhambra (Al-HAM-bra), a Spanish palace decorated with elaborate tile work, Escher was struck by the way the Moorish artists worked with pattern. Their tile work contained no recognizable images; they used only abstract geometric shapes repeated in mathematical variations. Escher finally saw how he was going to visually express his ideas about time and space.

After 1936, Escher's art and life changed completely. He traveled very little, spending most of his time working in his studio in Holland. He combined ideas about shape and pattern from Moorish art with his interest in mathematics and began to create a unique new world. For years Escher worked on his own, virtually unknown, making prints depicting a fantastic inner world filled with impossible situations and bizarre creatures. He made little money from his work, which was ignored by art critics until the mid 1950s. In 1968, a large show was held in one of Holland's leading museums, and M.C. Escher's prints became known all over the world. The artist died four years later in 1972.



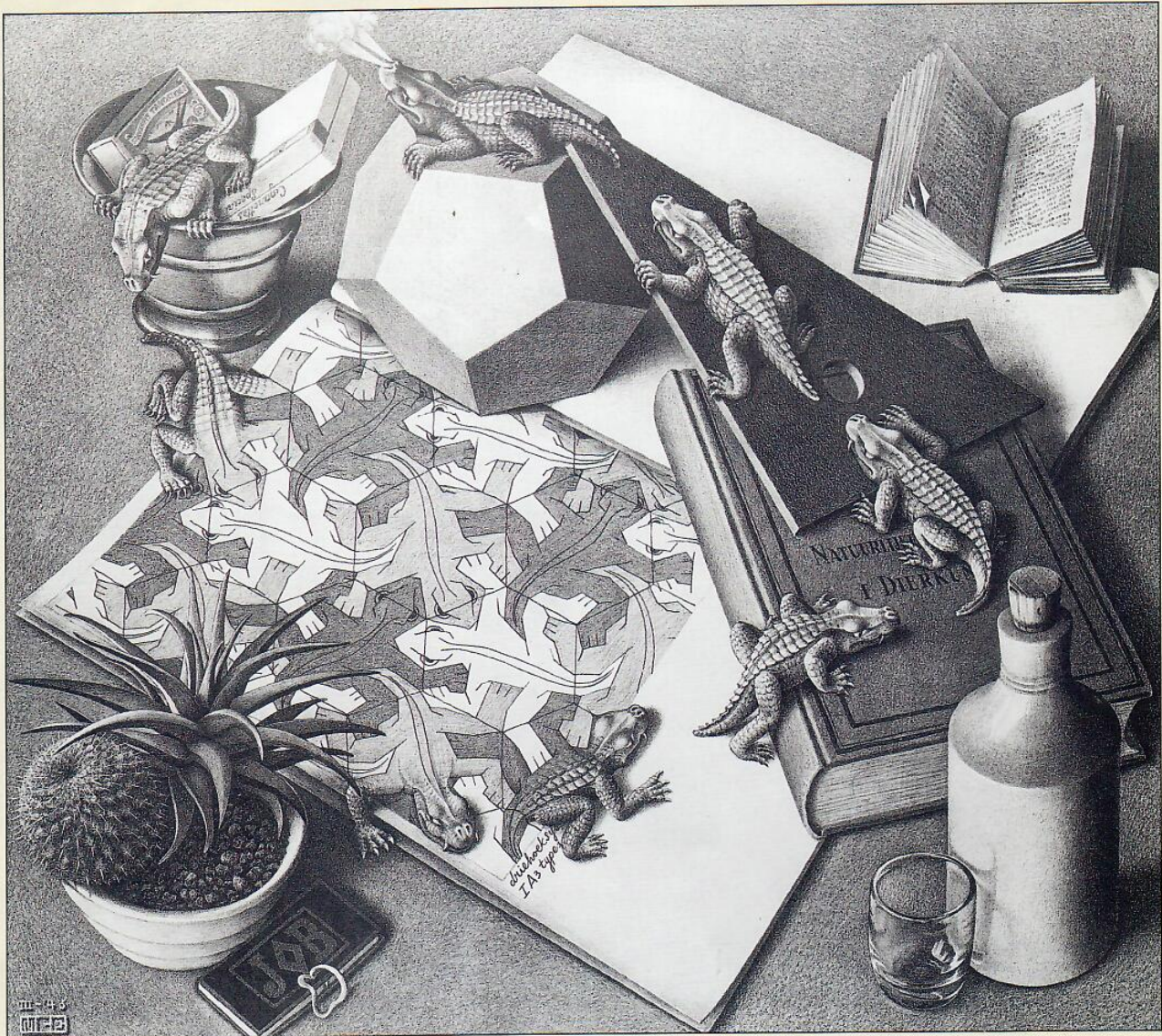
*“At night
before I go
to sleep, I
often see the
earth, floating
majestically
through
the pure
emptiness
of infinite
space.”*

—M.C. ESCHER

Would these two prints be as interesting if they didn't contain the lizards and flatworms that crawl and swim in them?

Left: *Stars*, 1948. Wood engraving, 12 1/2" x 10 1/8".

Far left: *Flatworms*, 1959. Lithograph, 13 1/4" x 15 1/4". Both, National Gallery of Art, Washington, D.C



Drawings **THAT** **COME** **TO** Life

Before artist M.C. Escher's work became well-known, only mathematicians and physicists took much of an interest in his prints because of the precise, mathematical methods he used in order to construct them.

What idea do you think Escher was trying to convey in both of these prints?

Left: *Reptiles*, 1943. Lithograph, 13 1/8" x 15"

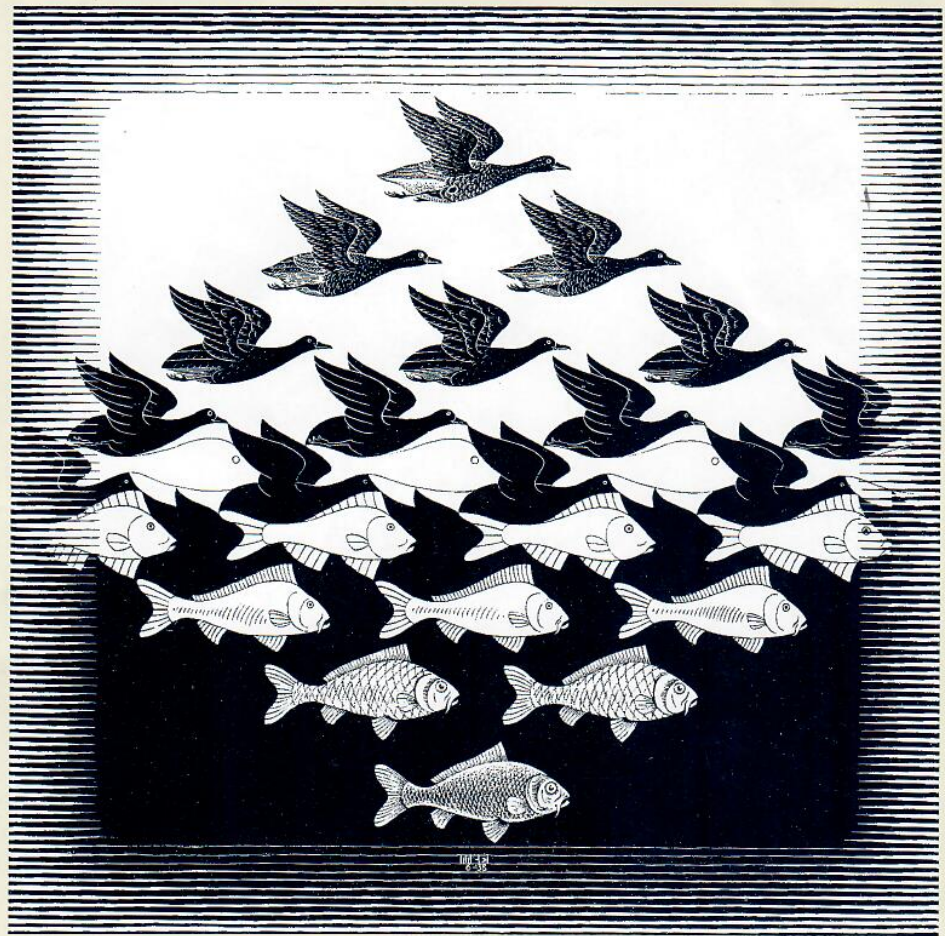
Right: *Sky and Water I*, 1938. Woodcut, 17 3/8" x 17 3/8". Both, National Gallery of Art, Washington, D.C.

The artist found this amusing. "In high school, I was a particularly poor student in math. The funny thing is, I seem to latch on to mathematical solutions without knowing it. Imagine—now mathematicians treat me as their long-lost brother, and most of the time I don't even know what they are talking about!"

Escher was very interested in showing the effects of time and he did this by **transforming** shapes in logical stages. In one of his most famous prints *Sky and Water* (right) the artist suggests the continuity and unity of nature in an immediately understandable way. Escher said, "I used a square format which is divided exactly in half by a horizontal central strip so the black and white elements are equal. At the top, the white fish silhouettes merge to form the 'sky' for the birds, while in the lower half, the black birds blend together to form a body of 'water' for the fish."

In this print, Escher works with a diamond shape within which smaller diamond shapes seem to change from **negative** to **positive**, **foreground** to **background**, **shape** to **space** and back again. The work also seems to complete a cycle with a beginning, a middle, and an end. The **dark**, **realistic** bird goes through seven stages of transformation, becoming a series of **flat**, **abstract shapes** then turning into a body of water, while the fish becomes the area of sky. The image is visually satisfying because it is completely **balanced**—there isn't one element that could be changed, added, or taken away. And *Sky and Water* perfectly illustrates its title.

Escher was fascinated with the transition between **two** and **three** dimensions. He



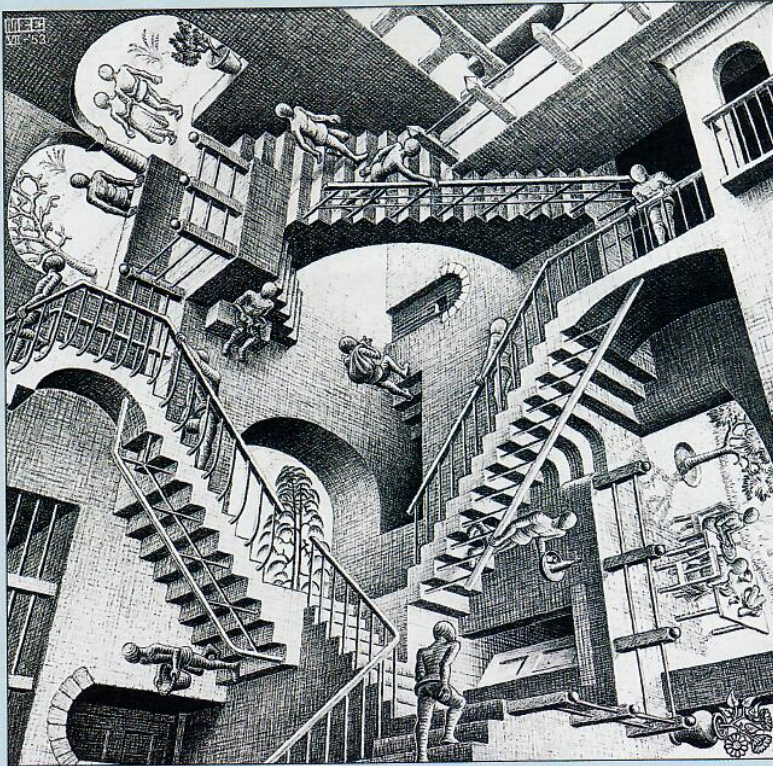
touches on this in *Sky and Water*, but it is even more evident in the print called *Reptiles*, left. He wrote, "One animal in a sketchbook lying on my desk, wanting to show that he is a living creature, pulls himself free and begins his life cycle. He clammers onto a book, then pauses on top of a dodecahedron to puff and blow. Then, tired but content, he goes back to the flatland." If you look carefully at the drawing within the print, you will see that the entire surface is filled with three sets of interlocking reptiles. Escher's theme is still **transformation**, as the **flat** creature from the drawing becomes **three-dimensional**. The reptile's **cycle** (another Escher theme) begins when it is part of the drawing and ends when it goes back to where it started. How would the cycle work if the print was "read" to contain not just one but seven reptiles, all walking in a circle, endlessly changing dimension?

M. C. Escher said, "I never had any symbolizing intention with this print, but later, one of my learned customers told me that it is a striking illustration of the theory of reincarnation. So it seems one can symbolize without knowing it!"

"The passage of time can be suggested by the repetition and change of similar shapes."

**MASTERPIECE
OF THE MONTH**

Preview



**INTO ANOTHER
Dimension**

Even in a conventional and realistic print like *Three Worlds* (right), Escher shows his interest in depicting similar but different worlds going on at the same time.

Do you think that the scene shown above could actually exist?

Relativity, 1953. Lithograph, 10 3/4" x 11 1/2".
National Gallery of Art,
Washington, D.C.

Escher described the three worlds, "The reflections of the trees indicate a three-dimensional world above, the leaves suggest the two-dimensional surface of the water, and the fish is below the water's surface."

In many of his later prints, Escher took his fascination with the relationship between two- and three-dimensional representation one step further. *Perspective* was a system developed over 400 years ago during the Renaissance to depict a "real" three-dimensional scene on a flat surface. Since Escher didn't want to merely depict the reality of the

world he saw around him, he began questioning Renaissance laws of perspective.

In his more complex prints like *Relativity* (left) and *Another World* (see pages 8-9), Escher combined perspective with the idea of simultaneous worlds to create scenes that couldn't possibly exist. In these worlds, Escher breaks the laws of nature with which we are familiar—up is down, inside becomes outside, over changes to under. Both the scene to the left and the one on pages 8-9 are made up of recognizable objects—doorways, stairs, arches—but what is wrong with each?

To create his impossible worlds, Escher would construct them architecturally, so the scene looked very real. He set up a sense of **dislocation** by adhering to all the laws of logic, then suddenly violating one or two, such as **gravity, scale, or perspective**.

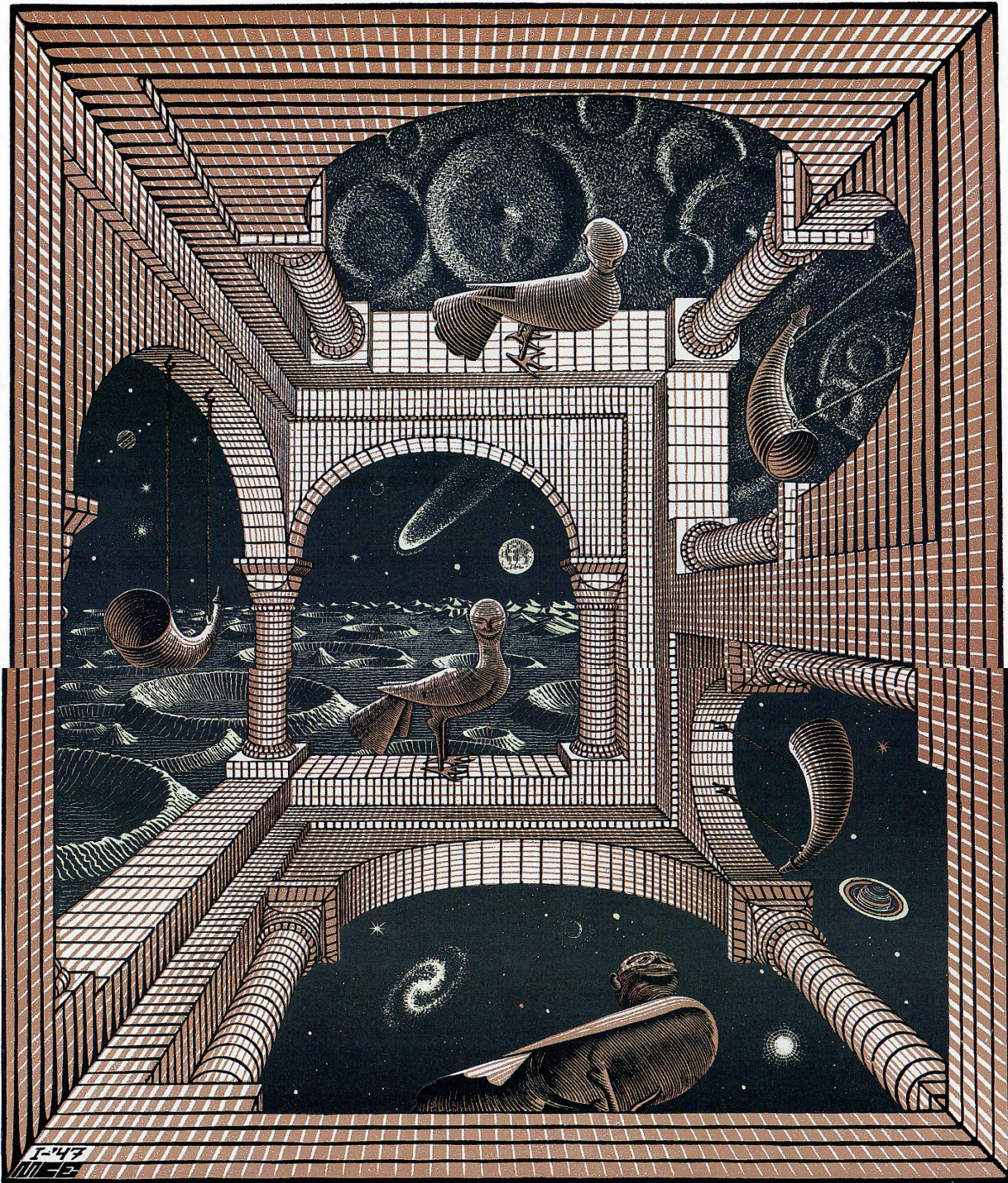
In *Relativity*, Escher integrates three different worlds into a united whole. This building is so precisely constructed that at first glance it almost looks as though it could actually exist. Each world is in perfect perspective and each has its own *vanishing point* (an imaginary point where all receding parallels appear to meet). And each of these worlds has its own gravitational force.

Turn the page and look at *Another World*. We are standing in a strange tiled room, but how do the terms "above," "below," "right," "left," "in front," and "behind" change according to the window we choose to look through? Again, Escher sets up a sense of dislocation by giving "the back plane of the picture three meanings. It is a *wall* in relationship to the horizon behind it; a *floor* in relation to the landscape above, and a *ceiling* in connection to the starry sky." Escher has also combined his very realistic technique with bizarre subject matter to give this piece an eerie, dream-like mood. The bleak lunar landscape and the man-bird sitting in the window gives the work a science-fiction-like quality. Why does this room have three windows? What would happen if there were four separate openings, one in each wall?



What are the “Three Worlds” in this print?

Three Worlds, 1955. Lithograph, 14 1/8" x 9 3/4". National Gallery of Art, Washington, D.C.

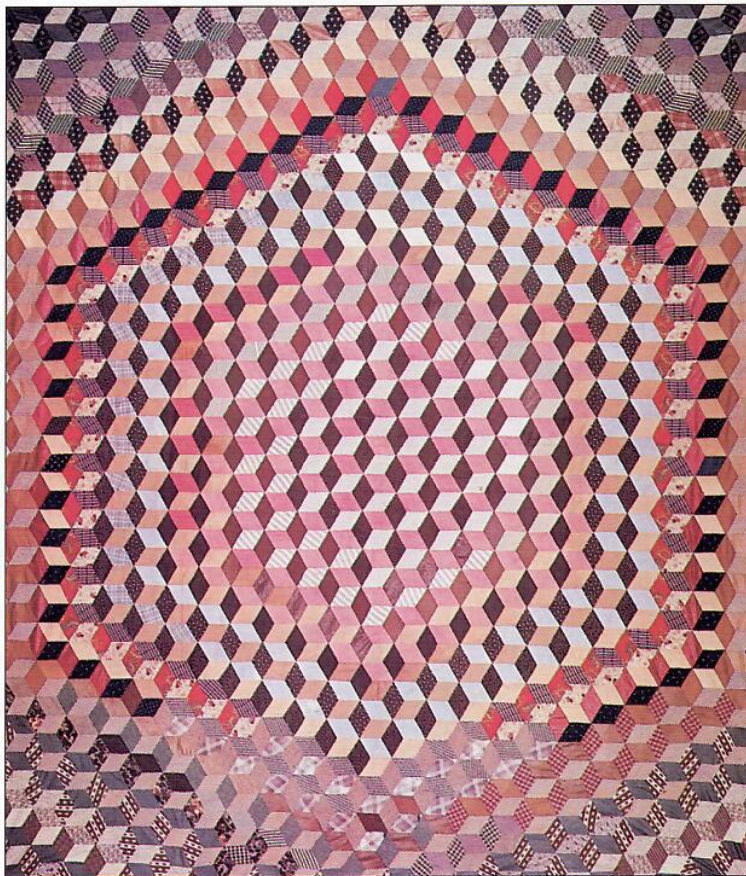


Escher (1898-1972). *Another World*, 1947. Wood engraving in three colors, 12 1/2" x 10 1/4". National Gallery of Art, Washington, D.C.

A N O T H E R W O R L D

M.C. Escher

ART THAT CHANGES: Two works that transform themselves right before your eyes.



Quilts that Move

The image above was done a century before an art movement known as “Op Art” became popular during the 1960s. But the optical effects created in this work are as dazzling as those in any Op Art painting.

In the 18th and 19th centuries, when large numbers of European settlers came to this country, everything they needed had to be made by hand. Since fabrics were scarce, leftover scraps were made into quilts.

The women who lived during this era had little time for painting, so sewing and quilting became practically their only form of creative expression. Quilts like the one above, were usually designed by one artist. She coordinated the way the hundreds of tiny pieces would work together. The quilt would then be assembled by many women at “quilting bees,” gatherings where women came to work and share ideas.

This particular quilt is made up entirely of *diamond shapes* sewn together side by side. The diamonds are **repeated** at three different **angles**, so the **contrasting light, dark, and middle values** give the *illusion* of a series of three-dimensional blocks. The **contrast** of **plain and textured** fabrics intensifies the appearance of hexagonal (six-sided) rows of “Baby Blocks,” which seem to move around each other in opposite directions.

The 19th century work of art, on the left, was not made to decorate a wall but to keep someone warm.

Baby Blocks, c. 1860. Springfield, Massachusetts area. Quilt top, 102” x 88”. Photo courtesy of *A Calendar of American Folk Art*. E.P. Dutton, Inc.





A Magical Mask

Does this Kwakiutl (Kwaa-kee-U-tull, a northwestern Native American tribe) mask, left, feature an animal, a bird, or a human being? The answer might surprise you because this mask includes all three.

Transformation masks like this one were constructed so the face of the outer mask could be opened to reveal another spirit inside. Some had movable parts and during a ceremony, mouths, eyes, and beaks would open and close.

The mask pictured here was used in secret-society initiation ceremonies to impress new members. At one point during the ceremony, a costumed dancer wearing the mask would emerge from the woods and enter a large house made of cedar logs where the new members were gathered. This bird-monster, seen in the shadows and lit only by a great bonfire would transform himself from a bull into a raven, and finally “become” a human being.

The stylized shapes exaggerate the outstanding characteristics of each creature. The dark form of the bull contains large eyes and an enormous mouth, which opens vertically to reveal a lighter sea raven inside. Since the bull and raven are “all-seeing,” repeated stylized linear patterns symbolizing eyes are drawn inside the open mouth. The raven’s mouth opens horizontally to uncover a small, white human being hiding inside.



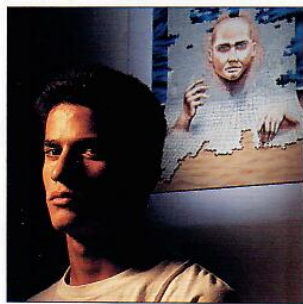
How many masks do you see in these three photographs?

Kwakiutl wooden mask, Drury Inlet. American Museum of Natural History. Photos by Stephen S. Myers.



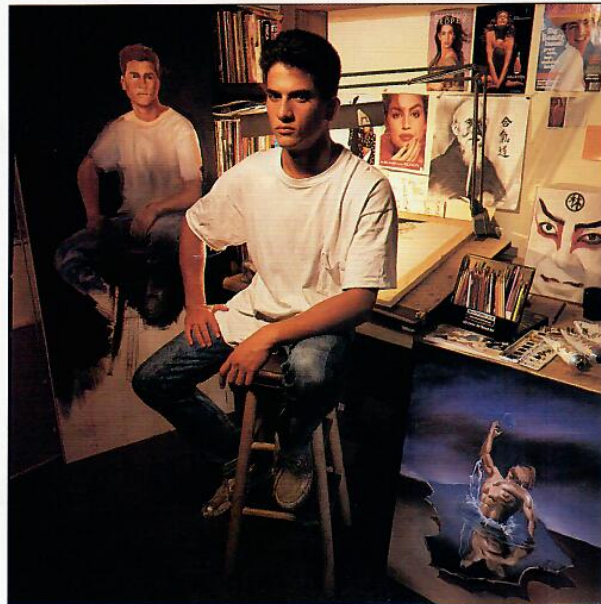
Earl Lam: SOLVING LIVING PUZZLES

Look at the picture on the opposite page. What story does the man in the puzzle seem to be telling? What elements in the picture make this scene seem real? Which make it seem grotesque and impossible? Earl Lam, 17, drew this Scholastic Art Award-winning picture when he was a 15-year-old sophomore at Killiam High School



in Miami, Florida. Now a senior, Earl—a native of Panama—hopes to get an art scholarship and a degree in fine arts.

“My family came to the U.S. when I was 11 because of my interest in art,” says Earl. “We knew the future was in this country.” Earl is particularly interested in fantastic art and surrealism.



■ **When did you first get involved with art?**

In Panama, when I was 8, I told my dad I wanted to draw cartoons. He's a commercial artist, so he taught me. I took my first art class in sixth grade, right after I came to this country. That was the first time I saw books about surrealism and fantasy. From then on, I really got into art.

■ **How did you get the idea for this painting?**

I was drawing in my sketch book. I was sketching out puzzle pieces on one of the pages. Then I drew a figure because I like figures. When I saw both elements on the same page, I started mixing them. I drew a face and arms, but in a way that made the figure look like it was coming out of the puzzle.

■ **Was your idea influenced by other fantastic art?**

Yes, I love painters like Salvador Dali and René Magritte (ren-A mag-REET). I also admire Escher. He's one of my favorite artists because his ideas look

real, but most of them are illusions. He makes you see things that aren't there, which is what I'm trying to do.

■ **How did you begin working on the picture?**

I didn't know what medium I would use, so I checked out the art store and chose colored pencils. I wanted to try something different with them that would look like paint.

■ **Then what did you do?**

First, I drew a sketch of the face and started coloring from the center out. I used the pencils like I would a brush to make the image look real. I started with the darkest facial tones, then I blended in lighter colors. As I finished the face, I began drawing the puzzle piece by piece. I started thinking of a person's life, where each part depends on the one before. I wanted a desert in the foreground and a dark, dramatic background. I made the puzzle look like it was floating by giving it a shadow and adding ripples to the sand.

Photos by Brian Smith

Escher is one of my favorites. He makes you see things that aren't there, which is what I'm trying to do.

■ **Who is the man in the center and what is he doing?**

Everybody tells me he looks like me, but he's not. He's supposed to be creating himself piece by piece as he puts the puzzle together. One hand has a piece going to his face, the other adds more to his body. He's bald because I wanted him to look surreal and it also makes him blend into the puzzle better. He takes himself very seriously, as you can see by his expression.

■ **Was there a message you wanted to convey?**

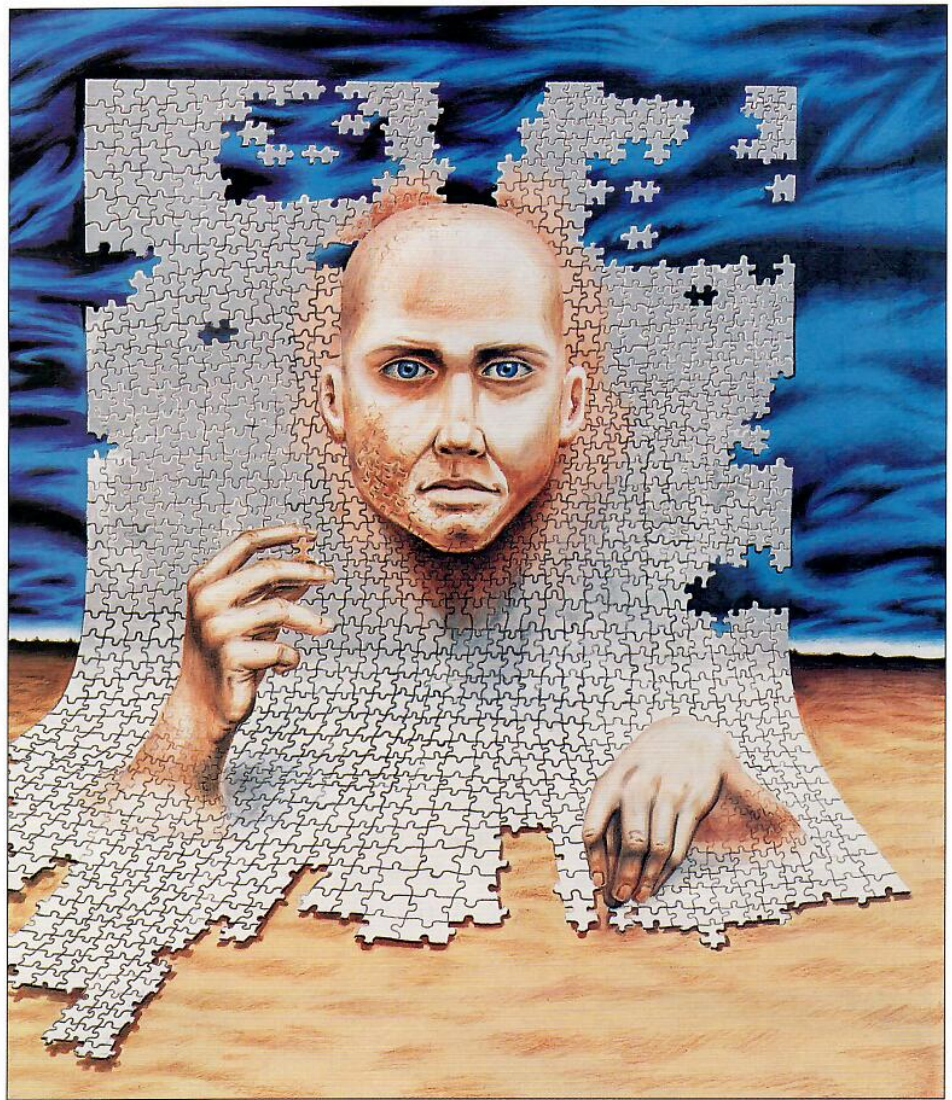
I wanted people to look at this and think of life, how we go along and put our lives together piece by piece—like a puzzle.

■ **Why are there large holes in the puzzle?**

I left big gaps because some of the parts of his life are missing. He hasn't lived some yet and he hasn't found out about others.

■ **How long did it take to do this picture?**

It took about five or six days. I worked every day after school



until late at night. The picture took longer than I expected because I used colored pencils. I felt the pain in my thumb from coloring and blending for three days after I was finally done.

■ **Were you pleased with the finished product?**

I loved it. I was surprised with myself. It was the first time I had drawn a strong idea. There was a real balance between a strong idea and a good drawing.

■ **You did this at 15. Has your art progressed since then?**

Yes. This was my first fantasy work. My painting technique has really improved. And I feel it's a lot easier for me to transfer my ideas onto paper now.

■ **If you did this picture now, would it be different?**

I would give it a dramatic perspective and composition so people could get into it more. Instead of looking at a normal eye level, I would make it from the point of view of a tiny creature, like an ant, looking up at the man. I think the low angle would make it stronger.

■ **What makes you keep doing art?**

It helps me in different ways. A lot of my work now is based on dreams. I'm doing a series of paintings about dreams I had when I lived in Panama. Art is a way of getting something out of my system. It's a way of expressing myself.

We select our Artist of the Month only from among students who have won medals in the current Scholastic Art Awards Program. To enter, ask your teacher to write to the Scholastic Art Awards, 730 Broadway, New York, NY 10003 for entry deadlines and rules books.



Lightly label the areas you will paint in order to avoid making mistakes.

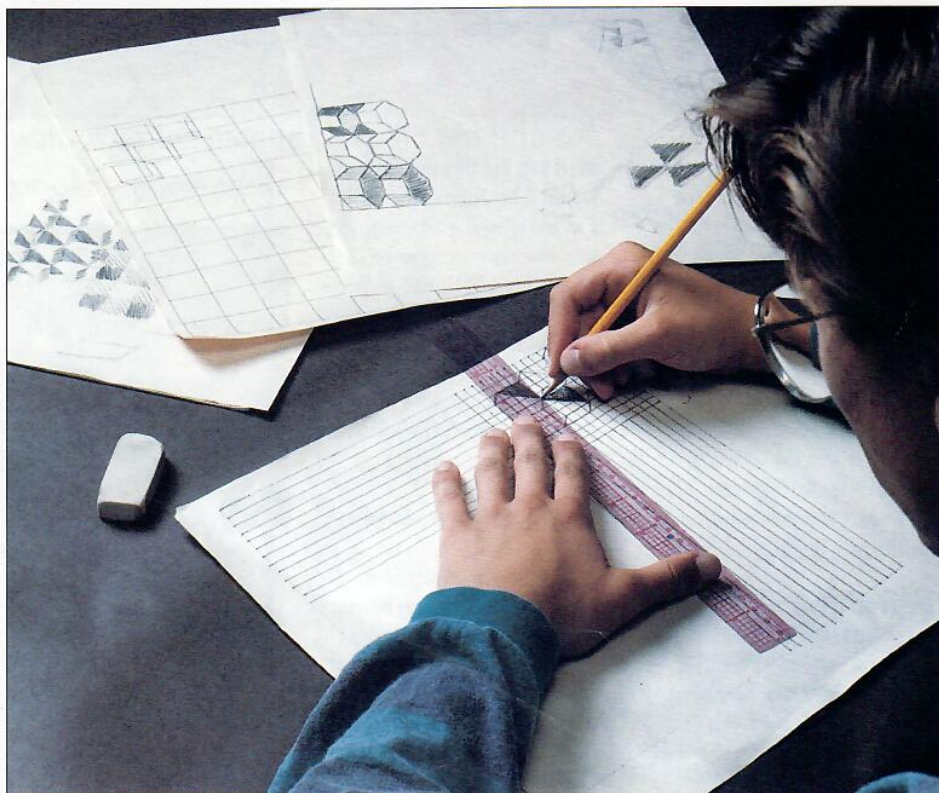
CREATING DOUBLE IMAGES

Create an image that changes as you look at it.

Have you ever intensely disliked someone or something, then you saw another side which made you change your mind? Have you ever tried and tried to solve a problem, then discovered the answer was there all the time but you didn't see it. Sometimes it's hard to tell what is "real" and what isn't—issues become "ambiguous," in that they have many meanings.

These are the kinds of issues M. C. Escher was dealing with in his art, and he expressed these ideas visually using unique graphic devices and techniques. In his work, one image becomes another, then changes back—light becomes dark, up becomes down, flat images become three-dimensional. In this workshop, you'll work with ambiguous abstract patterns that can be "read" in several different ways.

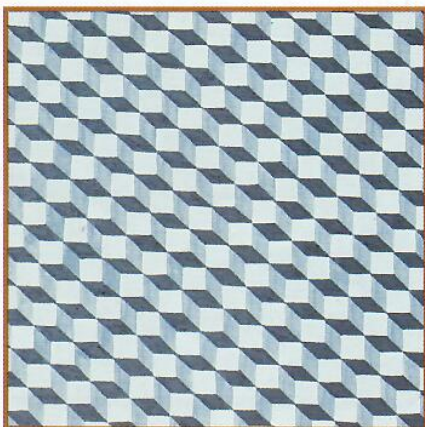
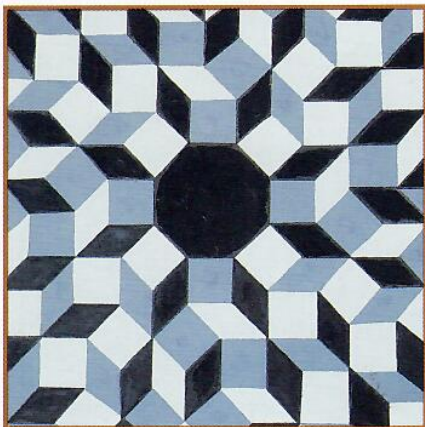
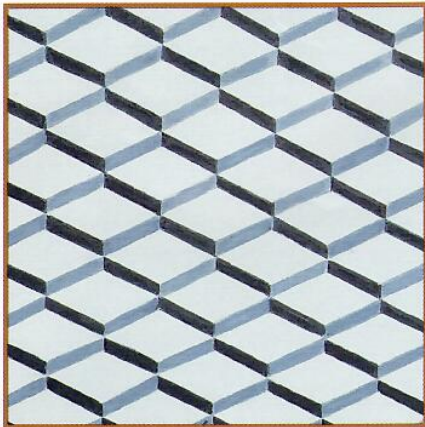
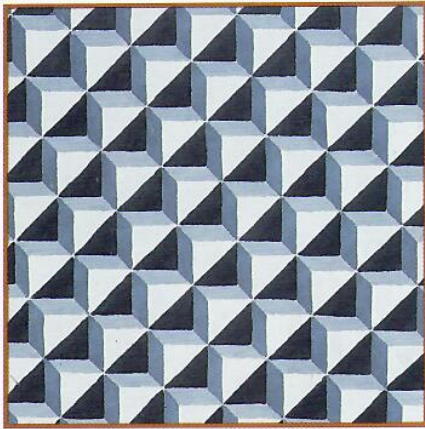
Prepared by Ned J. Nesti, Jr., Morrison (IL) High School. Assisted by Brandon S. Renkes. Photos by Larry Gregory.



Materials

- 12" x 12" white illustration board
- Acrylic paint: white, black, gray
- 12" x 12" sulfite paper
- No. 5 drawing pencil
- Vinyl eraser
- 12" C-Thru ruler
- No. 0, 1, 2 fine round/flat brushes
- X-Acto knife
- .2mm Ultra-fine Uni-Ball pen

A grid may help you develop patterns. Do a number of drawings before choosing your final design.



Starting Out

Step 1. Choose a geometric shape you'd like to work with—square, circle, triangle, diamond, rectangle, parallelogram—or invent your own geometric shape. Your shape should be developed into a pattern that appears to move or change into three-dimensional shapes. (Gray is neutral, black looks like the shaded side, and the white of the paper is “read” as the highlighted side).

Step 2

Develop a *unit* that you will repeat in various ways. Do a preliminary 10” x 10” drawing on white sulfite paper using rulers, compasses, protractors. You can use part of a shape, combine two shapes, or use two different sides of one shape. You can also *interlock* your shapes.

Step 3

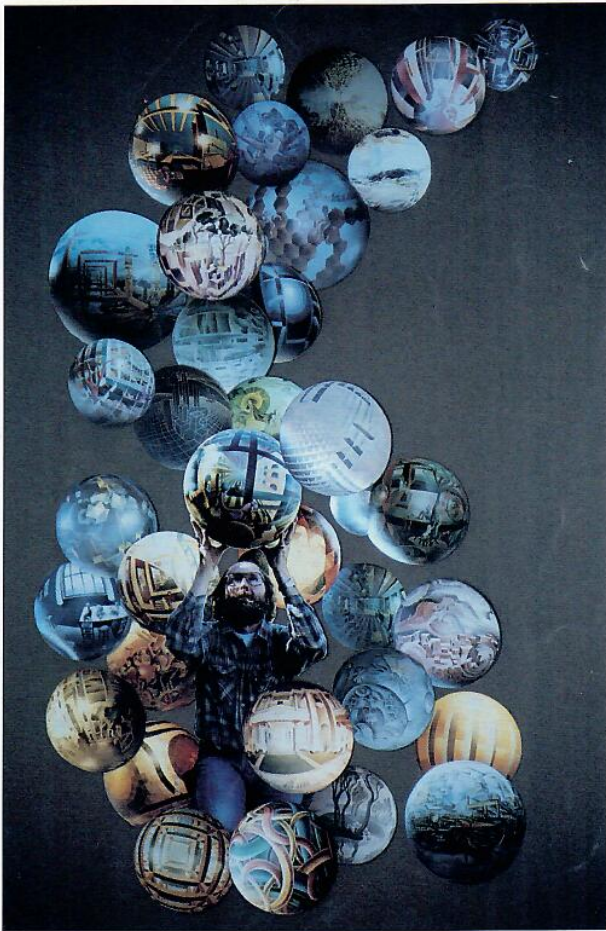
When you have a final design you are satisfied with, center and redraw it on 12” x 12” illustration board. Put a *lightly* penciled “X” in the areas to be painted *black*, a “G” in the *gray* areas, and a “W” in the areas to be left *white* to avoid accidentally filling them in. You can *outline* black shapes before painting. When your pattern is complete, turn the design clockwise. What do you see?



As you work on your pattern, it will gradually appear to become three-dimensional.

Some Solutions

Can you find the basic geometric *shape* or *unit* on which each of the patterns on the left is based? Which of these designs contains the **same unit repeated over and over**? Which design uses **repeated mirror-images**? Which use strong **diagonals**? Can you find any **repeated positive and negative versions** of a unit? Which patterns are **overall** and which have one **focal point**? Which units **rotate** around a central point in the composition? How has each artist used black, white, and gray to give a three-dimensional effect?



Like Escher, these two contemporary artists create new perspectives.

Life Inside a Bubble

South Dakota artist Dick Termes advises viewers of his *Termespheres* (left) to imagine that they are sitting inside a transparent ball. "Termespheres," he says, "enclose visual space—they capture the visual world that is all around us."

We are used to seeing paint-

ings done in **one-point perspective** on a flat surface. This means the eye usually goes to a single **vanishing point** where all receding parallels seem to meet. Dick Termes uses **six-point perspective** to paint his unique three-dimensional globes, with their complex systems based on **multiple vanishing points**.

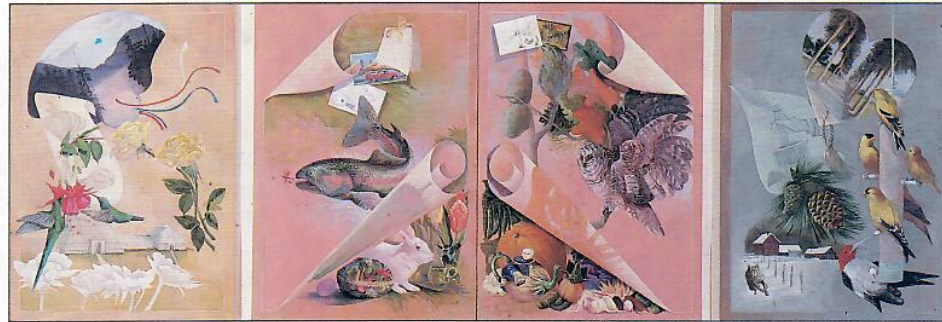
We would need eyes in the backs of our heads to see the six perspectives in a *Termesphere* all at once. To assist the viewer, Termes motorizes many of his globes so they revolve. In this way, the mind allows viewers to see what the eyes cannot.

"A spherical canvas is like diving into another world," says Dick Termes, creator of the Escher-like globes on the left.

Dick Termes b. 1941. *Termespheres* 1989. Acrylic on polycarbonate plastic globes.

Dreamlike Transitions

Ellen Lanyon, a contemporary American artist, combines traditional and dreamlike images to symbolize the seasons in *Chromos: I Winter, II Autumn, III Spring, IV Summer* (right). Each season is contained in a colored rectangle: grays and whites stand for winter; warm oranges and yellows for autumn; greens and bright pastels for spring; and light earth tones for summer. Lanyon's foreground images of birds, trees, fruits,



flowers, and seasonal scenes blend and change into one another, just as the seasons do. Autumn and spring **unfur** and slowly reveal themselves while winter and summer are more

self-contained. The images are realistic, but the artist places them in **surreal** settings. Objects seem to float in front of their backgrounds, shifting from the "real" to the "unreal."

Lanyon places her symbols in mysterious settings.

Ellen Lanyon b. 1926. *Chromos: I Winter, II Autumn, III Spring, IV Summer*, 1982-1983. Acrylic on canvas, 68" x 204".

D. James Dee

Statement of Ownership, Management and Circulation of *Art & Man* (as required by Title 39, United States Code).

Date of Filing: October 1, 1991

Title of Publication: *Art & Man*.

Frequency of issue: Six times during the school year: Sept./Oct., Nov., Dec./Jan., Feb., March, Apr./May

Location of Known Office of Publication: 351 Garver Road, P.O. Box 2700, Monroe, Butler County, OH 45050-2700.

Location of the Headquarters of the Publishers: 730 Broadway, New York, NY 10003-9538.

Publisher: M. Richard Robinson; Editor: Margaret Howlett, (both of 730 Broadway, New York, NY 10003-9538). Owner: Scholastic Corp., 730 Broadway, New York, NY 10003-9538.

Known Stockholders, Mortgagees, and other Security Holders Owning or Holding 1 per cent or more of total amount of Stock, Mortgages, or Other Securities: SI Holdings Inc., 730 Broadway, New York, NY 10003; New York City Industrial Development Agency, 225 Broadway, New York, NY 10007; City of Jefferson, Missouri, City Hall, 240 East High Street, Jefferson City, MO 65101. The Bank of New York, 48 Wall Street, New York, NY 10005. IBJ Schroder Bank & Trust Co., One State Street, New York, NY 10004. Goldman Sacks Groups, L.P., 85 Broad St., New York, NY 10004

During preceding 12 Months Average Number of Copies: Printed each issue, 262,000; Paid Circulation, 235,082; Free Distribution, 23,336; Total Number of Copies Distributed, 258,418; Office Use, etc., 3,582; Total, 262,000. For Single Issue Nearest to Filing Date: Number of Copies Printed, 295,500; Paid Circulation, 178,333; Samples, 21,765; Number of Copies Distributed, 200,098; Office Use etc., 95,402; Total, 295,500.