What is "Op Art" and why do artists create it?

What did you think when you saw the painting on the cover and the one on the opposite page? Do they seem to ripple or flow or come toward or move away from you? Can you look at either of them for very long? Why would artists want to create images like these? And, while these paintings may be very interesting and really catch your attention, what is it that makes them great works of art?

Artists have always wanted to recreate aspects of reality in a convincing enough way that the viewer would actually feel them. A group of French painters in the late 19th century, called Impressionists, wanted to capture a particular moment in time. Since sunlight changes from moment to moment, the Impressionists developed a way of painting (called divided color) that they felt reproduced the effects of natural light. In the painting at the top of the page, does the grass look green and do the people, boats, and bridge in the background look purple? Actually, the green grass is made up of a mixture of tiny yellow and blue brushstrokes and the purple areas are small red and blue dots. When the viewer stands back from the painting, the eye mixes the colors visually, giving the scene a feeling of movement and life.

There is another painting of a bridge on these pages — can you find it? Look at the painting above and think of how it feels to drive over a huge suspension bridge at night — the speed, noises, the lights of the traffic coming at you, the glittering skyscrapers in the distance, the lights gleaming on the cables, spotlights moving in the sky overhead. Like the French Impressionists, another group of artists called Futurists — working in Italy at the beginning of the 20th century — also used optical devices to involve the viewer in their paintings. They admired speed and modern technology and saw the United States as a world of exploding energy, expanding industry, and unlimited opportunity. Joseph Stella, an American
Modern Optical artists want to recreate light and motion by making the canvas itself appear to move and glow. Not see it as bulging out at you? Modern Op artists work abstractly with no reference to the real world. Compare the shifting diagonals, luminous colors, and square planes with the patterns in Stella’s painting. Vasarely works with the square — the “basic architectural unit” — varying its size, direction, and color to achieve a three-dimensional effect.

In this issue, you’ll learn more about Optical art, especially the work of British Op artist Bridget Riley. You’ll discover some other artists who have created amazing optical illusions and finally, you’ll develop a three-dimensional Op art pattern of your own.
"I want to create an image which will stimulate a fresh way of seeing again something that was experienced but has been forgotten with the passage of time."

—Bridget Riley

BRIDGET RILEY
CREATING A "MYSTERIOUS PRESENCE"

Bridget Riley bases her paintings on a single "disruptive event." In Breathe (above), the symmetrical arrangement of positive and negative shapes sets up a rhythm of expansion and contraction with the greatest tension in the center.

In Current (left), Riley repeats long, thin, vertical lines. Curves in the center create an area of wildly vibrating movement.

The painting on the cover and those on the next six pages were done by British Op artist Bridget Riley and, as you've seen, their visual effects certainly make a strong impression. Are these like any paintings you've ever seen before? A better question might be: Do these paintings remind you of any experiences you've ever had? Maybe it would help to look at the titles — Current, Breathe, and Movement in Squares. Bridget Riley isn't interested in painting sensational "special effects." She wants to create visual equivalents for certain states of mind. Her almost hypnotic images (which she calls "mysterious presences") are meant to remind the viewer of a feeling or memory.

Riley's creation of the painting Movement in Squares (right) is a good example of the way she works. The idea came to her during the summer of 1960, when she was traveling in Italy. One hazy afternoon, the artist happened to look out her hotel window onto the black and white patterned pavement of the plaza below. As she watched, a violent thun-
derstorm swept across the square and the whole scene seemed to completely dissolve, creating a feeling of anxiety. This anxious feeling was resolved as the storm moved away and the plaza looked just as it had before. She remembers thinking, “I wonder if this breakup could somehow be given an equivalent in painting?” She began to try and work out a pictorial vocabulary which would evoke certain feelings or states of mind. She would first establish a unit — a shape, a line, a space — and transform it in some way: tilt it or expand and contract it. She would repeat the unit, gradually changing it until she brought it to the point of highest tension. She would then close the cycle by returning to the original shape.

Now that you know more about what Bridget Riley is trying to do in her work, try looking again at these three paintings and the others in this issue. Which ones make you feel anxious, which are uplifting, and which make you feel as if you are floating or almost in a hypnotic trance? What kinds of natural events might have inspired some of Riley’s other works — an earthquake; breathing; going over rapids in a stream; watching smoke rise; feeling a breeze gently rippling colored vines? Can you pick out some of the units Riley uses to express these events — squares; triangles; long, thin, wavy lines? How does she use positive and negative shapes; repetition; variation and progression; symmetry and asymmetry?

In Movement in Squares (below), the artist repeats and varies the same shape to create the illusion of squares disappearing into deep space.
You've seen where Bridget Riley gets some of her ideas, but how did she begin to work in such an unusual manner? Riley was born in 1931 in London but spent her first 14 years in a small cottage in Cornwall, a rocky coastal section in southern England. Since she grew up during the Second World War, she had little formal schooling, spending most of her time outdoors. The effects of her early contact with the sea, the high cliffs, open skies, and changing light of Cornwall can still be seen in her paintings. She always liked to draw, and had her first formal art training at 15. A few years later she entered the Royal College of Art in London. She grew dissatisfied with her training, feeling "no sense of purpose," and left school in 1955 to look after her father, who had nearly died in an automobile accident.

Her lack of artistic direction as well as the strain of taking care of her father led to Riley's physical and mental health declining. She had a nervous breakdown, which led to a return to her early love of drawing. When she began to draw circles, she found that she could no longer see them as circles but as a kind of line. This discovery led her to develop her own style of painting, which she describes as "a way of seeing the world in a different way."

"When I get a 'hunch' about a unit—a square, a triangle, a certain kind of line—I put it through its paces. I push it to the fullest extent to see what it will do... The choice of title becomes clearer and clearer as the work goes on."

How did Bridget Riley use three colors to transform the interesting, but not very exciting, work below into the image shown above and on the next two pages?
How many colors has Bridget Riley used in her painting _Entice_, shown on the left? Look closely at the detail (above) to make sure.

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"The pleasures of sight take you by surprise. They are swift, sudden, unexpected, and elusive...momentarily turning the commonplace into the ravishing. Even smells, noise, taste, and touch have a visual equivalent and can be presented through a vocabulary of signs."—Bridget Riley
GRAND ILLUSIONS

Artists of every period and culture have always wanted to recreate their own versions of reality.

What is an illusion? The dictionary says it is a "false impression not consistent with fact." You’ve seen earlier in the issue how Bridget Riley and other “Op” artists created optical illusions. Their paintings seem to move and actually be three-dimensional, even though you know each was done on a flat, two-dimensional surface. Artists of the Italian Renaissance, working around 1500, depicted space in a revolutionary new way. Renaissance artists (like Carpaccio, who did the painting above) wanted to give the impression of a “window” looking out into real space. This illusion of realism was achieved by using a system they developed called perspective.

Painting a scene in perspective means that objects are placed in relationship to each other in a way that gives the illusion of deep space. Large objects which overlap smaller ones seem to be closer. In this painting, Carpaccio has made the woman in the foreground bigger than the trees in the middleground. They appear further away, while the hills and tiny buildings in the background seem to be many miles away. Carpaccio enhances the feeling of reality by modeling his figure; the highlights and dark shadows make this person look solid and round. The artist’s use of aerial perspective (notice the light, hazy, bluish mountains that blend with the sky and fade into the distance) further heightens the illusion of deep space.
ILLUSIONS OF THE SPIRIT

Unlike Western artists, the artists of Africa did not want to reproduce visual reality. The mask on the left was not carved to be a work of art in itself, but as part of a religious ritual. The creation of the mask was part of the ritual. The artist fasted to prepare, then withdrew to a special place to carve the mask, accompanied by offerings and songs. African artists believed that the vital spirit of their ancestors continued after death, and that the mask would be filled with this force. This particular mask summoned the ancestral force to protect the tribe against wars and epidemics. The features are as unreal as possible. They are abstracted (simplified and exaggerated) to create an entirely new form. When the mask was finished, the whole tribe gathered for the ceremony. Held at night, lighted by torches and moonlight, this was the part of the ritual that would release the spirit of the dead. During this ceremony, the rhythmic drums, chanting, and dancing caused a trancelike state in the mask-bearer who was believed to become the ancestral spirit. The bold curves, violent colors and patterns, and exaggerated eyes and mouth that you see in this mask symbolized the state of possession necessary to invoke the protective powers of an ancestor spirit.

ILLUSIONS OF AN ILLUSION

Do you think of photography as one of the most realistic forms of art? Then look at the photo, below right. It is not a photo-collage and the artist hasn't hand-colored the print or changed the negative. The photographer, contemporary American Sandy Skogland, has merely taken a picture of a scene she saw directly in front of her and titled it Radioactive Cats. The trick is, the "reality" she has photographed is totally of her own making. Skogland is one of a new group of sculptor-photographers who grew up with the real-looking but false images the advertising industry has created in order to sell products. She sets up very authentic environments — usually ordinary-looking rooms — and peoples them with fairly normal-looking human beings. Then she adds the element that makes the whole image bizarre and frightening: hundreds of floating orange goldfish; dozens of bouncing purple babies; scores of green, glowing cats. And, as in commercials or advertisements when something completely unbelievable is happening, no one in any of Skogland's photo-environments notices that anything is at all wrong. The artist is fascinated by the persuasive power of advertising. She makes the point that we've finally managed to capture in an instant the reality that Renaissance artists labored for years to recreate. And we seem to work hardest to create real-looking illusions.
Cody Buchmann creates optical effects, but he does it with a computer. The sixteen-year-old artist has been making computer designs since he was six. In fact, he is more comfortable drawing with a “mouse” (a computer drawing instrument) than with a pencil and paper. Computers, as he told us, are especially suited to optical art. Take a look at his award-winning design on the opposite page and notice how your eye keeps coming back to the rhythmic shapes, the glowing colors, and the repetition and variation used in the three panels. How does the design change from top to bottom? Which panel is most complex? Which is most vibrant?

Cody is currently a junior at Victor Andrew High School in Tinley Park, Illinois (near Chicago). The artist also enjoys model railroading, needlepoint, and ceramics in his spare time. He plans to major in computer art in college and hopes someday to do cartooning by computer.

How did you first get interested in art and computers?
It was something my parents thought I would like, so they signed me up for a summer computer course for elementary-school kids. I liked it so much, I saved up to buy my own and I’ve been working on all kinds of computers ever since. What I’m getting involved in now at school is taking real images from TV and turning them into computer images. Then you can modify them and make them really different.

How did you happen to do the work shown on the right?
This was an assignment for my computer-art class. We had to do an abstract asymmetrical design. [The elements on one side are not identical to those on the other but look visually equal.] I didn’t have a plan when I started — I just wanted to find out what this particular computer could do. I wanted the design to be good, but mainly I was just drawing things that popped into my head.

I think the star was the first thing I made. I couldn’t gauge the lines exactly — that’s why the star looks like it’s tipped three-dimensionally. I made the lines one color, the points another color, and the pentagon inside a third color.

How did you design your drawing?
I wanted to avoid static points. By static points, I mean certain images that make you look at only one part of the picture. For example, in the upper right corner I did a circle within a square. But it was too simple and bold, so I toned it down in the next version.

I did the double line at the bottom of each panel with a computer tool called a “two-point paintbrush.” It was like using a paintbrush with all the center bristles cut out — just the two outer ones do all the painting.

How did you come to use these particular colors?
When I did my first print, I set the printer for a nice sea-green. But the first couple of tries weren’t very good. Parts of the design disappeared. On the second panel, I changed the background to a lighter color and made everything else a medium color. Finally, on the bottom, I changed everything to a darker color. I loved the effect — medium to light to dark. The objects sometimes contrasted with the background, so I never made it too light or dark.

Parts of the design are very “optical,” especially where two or more colors produce a pattern.
Yes, it happens where the background and another color come together. It gives a checkerboard effect, especially with the red and yellow. If you look at the star in the middle panel long enough, it seems to shimmer.

PHOTO BY JANET SODERBERG
Why did you include three panels?
I wanted to make several versions work together. I think your eye is drawn to the center picture the most because of the brightness of the yellow. The complementary colors [or opposites: red/green; orange/blue; yellow/purple] in the bottom two seem to vibrate and link all three panels together. Your eye wants to go all around this design to see what repeats and what varies. That’s just what our brain wants it to do — there’s nothing we can do to stop it. This is where computer art really excels. It’s perfect for optical art!

Could you explain how?
At the touch of a button, you can draw perfect circles, rays, and straight lines. You can repeat things instantly. Also, if your design isn’t working, you can just erase and rework it.

Are you planning to study computer design after high school?
Yes. I’ll probably be going to the University of Illinois if I’m accepted. They have one of the best computer-art programs in the country. Their computer was used to do the special effects for the first two Star Wars movies. Eventually I’d like to do cartooning or animation by computer. The thing I still have to work on is faces. I sometimes even have trouble with the faces of some of the fantastic creatures I like to draw, but I get by.

Anyway, computers seem to work best with the abstract and the fantastic — things beyond reality. Some of the images in computer animation are incredible. Imagine 2,000 polygons rotating in space, forming a huge circle. Try reproducing that with models, or hand-drawn animation! Computer art is a different world. It’s something that just really turns me on.

Would you like to see your own work featured on these pages? We select our Artist of the Month from students who have won medals in the 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 book.

“Your eye wants to go all around this design to see what repeats and what varies. That’s just what our brain wants it to do — there’s nothing we can do to stop it. This is where computer art really excels. It’s perfect for optical art!”
CAPTURING MOVEMENT

Develop your own piece of Optical art.

Before you look at the title of the Bridget Riley painting on the left, try staring at it for a while. Now look at its name — do you think the title fits? To create this effect, the artist has taken one geometric shape and repeated and changed it to set up a feeling of uncertainty and instability. Can you find the one element that varies in this painting? Look at the rows of triangles — see how the bottom point of each moves along a straight horizontal line. This produces a “shaky” image that seems as if it might collapse at any moment. In Shiver, Bridget Riley has visually expressed anxiety. To begin this workshop, think of some experiences that might best be expressed in an Optical art design. How would you translate sensations — walking down a long hall, looking at waves breaking, staring into a deep tunnel, or being on a fast ride in an amusement park — into a piece of Op art?

"A Bridget Riley painting is about the changes, sometimes disastrous, that can take place at any time. The startling optical effects remind the viewer that he/she is in dangerous country. There are no points of rest in a Riley: hazard is everywhere." — art critic, 1964

MATERIALS

- 12" x 16" white sulfite paper
- 12" x 12" oak tag paper
- No. 7 pencil
- Ebony pencil
- 12" clear plastic ruler
- Compass
- Protractor
- No. 3 watercolor brush
- Hunt Crow Quill superfine pen point
- Faber-Castell .2mm uni-ball pen
- Tracing paper

STARTING OUT

Think of a sensation or feeling you might like to try translating into a visual image. You will be working with a simple geometric shape that, when repeated and varied, will convey the illusion of depth and movement. (Use shapes only. Try to avoid the use of lines.) Use Ebony pencil to develop several small "sketches."
2 Pick the best solution and use ruler, compass, or protractor to draw a full-sized version. How will you repeat your original unit? Will you use scale contrasts (large and small), vary your shapes, or will you use positive and negative versions of the same unit? Remember that this project should work not just optically but artistically. The final version should work as a whole and not look like several units joined together. The image should be balanced (symmetrically, asymmetrically, radially), and your eye should progress through the composition rhythmically, from focal point to rest area and back.

3 Once you feel your design "works" optically, transfer it to the oak tag paper and carefully ink in the black areas with watercolor brush. Use fine pen point or microball pen to do smaller areas and to smooth out edges.

SOME SOLUTIONS

Can you pick out the original unit that was used as the basis for each of these drawings when you look at the final images shown above? How has each artist varied his or her repeated unit: by using scale; contrast; positive/negative versions? In which is the focal point or center of interest important? Which artists have set up a feeling of depth or perspective and which concentrate on creating an illusion of movement? Do any of these drawings remind you of familiar sensations, experiences, or natural events? Which pieces seem to function most effectively as works of Optical art?
These current exhibitions will show you some
of the many kinds of illusions artists can create.

MYTHICAL ILLUSIONS

What is going on in the painting on the right? A snake slithers along a
path in a bleak-looking forest, headed toward wooden stairs which lead
to an attic door. Is this a painting about nature, life, death, rebirth,
religion, mythology, civilization or all of the above? For nearly 20
years, a German artist named Anselm Kiefer (Keefer) has been creating
wall-sized paintings like the one on the right. These monumental
images have been highly praised by critics, and you can see them for
yourself if you go to a new show of works by this acclaimed artist.
Anselm Kiefer will be at the Philadelphia Museum until May 1. During
the summer it will be at the Contemporary Art Museum in Los
Angeles, then go to the Museum of Modern Art in New York City.

ILLUSIONS OF REALITY

Most American Artists in the nineteenth century
wanted to create very real-looking worlds in their
paintings. Frederic Remington went one step
further—he painted a highly realistic version of
a “Wild West” that may never have existed. You
can see many action-packed scenes of cowboy
life like Fight for the Waterhole (left) in a new
exhibition currently at the Saint Louis Art Mu-
seum until May 22. Frederic Remington: the Mas-
terworks will then travel to The Buffalo Bill
Historical Center, Cody, Wyoming; The Museum
of Fine Arts, Houston; and The Metropolitan
Museum, New York City.

MORE OPTICAL ILLUSIONS

For a while, contemporary American abstractionist
Frank Stella was considered an Optical artist. He
did highly non-representational paintings like this
one (right), working only with pure color and
shape. While this painting does not have the im-
mediate impact of Bridget Riley’s optical works,
its size (10 feet in diameter) and glowing hues
cause the original to appear to shimmer. Adding to
this effect are the two complementary pairs of colors
used (yellow-orange and blue-purple in the top half;
green and several kinds of red at the bottom). You can
see new work by this highly regarded artist in Frank
Stella 1970-1987 at the Walker Art Center in Minneapolis
this fall. In 1989, it goes to the Contemporary Arts Museum,
Houston, and the Los Angeles County Museum of Art.

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