

M.C. ESCHER

By Christy Hale

Meet the Artist

Born on June 17, 1898, in Leeuwarden in the Netherlands, M.C. Escher was a self-taught artist who worked in woodcut, lithography, and linocut. Though Escher didn't successfully complete high school, he went on to study graphic arts at the School for Architecture and Decorative Arts. As a young man, he created beautiful landscape prints while he traveled and sketched the world. But he is best known for his drawings and paintings done after 1917—drawings that were more

imaginative than those of his contemporaries. These drawings led to a series of new systems, recognizable as tessellations, which were a combination of mathematics and art.

Never-Ending Designs

Escher had a great sense of wonder, which he revealed in his creative artwork. His abstract work, replication, and patterns—often led him to think and print complex and mathematical ideas that he could use to begin to explore in work.

Along with his drawing, Escher also wrote a book, *Escher's World of Mathematics*. In it, he says, "When I see a form, the human

mind sees another form." These mathematical patterns were created in 1903, when Escher was 25. He used a technique called "woodcut" to create his designs. By using the pattern plane, he was able to create a series of designs that were mathematically perfect.

Math + Art = Fun!

Escher's work and mathematics were important ideas in Escher's life. His work was a combination of art and mathematics. He was a pioneer in the field of tessellations and his work has been used in many areas of design, from architecture to fashion. For more on Escher, visit www.mcescher.com.

A WALK THROUGH THE PAINTING

Contrast

How many colors can you identify in this painting? Can you identify other colors that are not in the painting? How does the contrast of colors help you see the painting?



Tessellations are the shapes that fit together like a puzzle with no gaps left in between. Can you identify the tessellating shapes in the world around you?

Rotation

How many times do you think the shapes in this painting have been rotated? How many times do you think they have been reflected?

By Position

The spaces filled with lines, dots, shapes, or objects in a painting are called positive space. The surrounding empty space is called negative space. Can you identify the positive and negative space in this painting?

ART WORKSHOP

CREATE TESSELLATIONS LIKE M.C. ESCHER



Mary Bassman's fourth- and fifth-grade students at Orlene Elementary School in Palo Alto, California, really know how to put the pieces together! Inspired by the striking work of M.C. Escher, the students turned math into art as they experimented with colorful shapes and interlocking patterns. In the process, they explored contrast, dimension, illusion, repetition, metamorphosis, and even infinity. *By Christy Hale*



TESSELLATION TERMS

- Translation** A movement of a figure that moves the figure in a straight line.
- Reflection** A movement of a figure that moves the figure across a line.
- Rotation** A movement of a figure that moves the figure around a point.
- Gliding Reflection** A combination of a translation and a reflection.
- Translation and Reflection** A combination of a translation and a reflection.
- Translation and Rotation** A combination of a translation and a rotation.
- Reflection and Rotation** A combination of a reflection and a rotation.
- Translation, Reflection, and Rotation** A combination of a translation, a reflection, and a rotation.

The red lines illustrate that squares have been designed with both rotation and reflection.



1. Students are inspired by a colorful tessellation of M.C. Escher's work. Students are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed.
2. Students are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed.
3. Students are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed.
4. Students are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed.
5. Students are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed.
6. Students are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed. They are asked to think about how the shapes in the tessellation are designed.