

## M. C. ESCHER

The amazingly original artist **Maurits Cornelius (M.C.) Escher** (June 17, 1898 – March 27, 1972)

created fascinating images that showed his unique perspective of the world

and the worlds of his imagination. He was born in Leeuwarden, The

Netherlands. He attended both elementary and secondary school in Arnhem,

where, as he admitted, he was rather poor in arithmetic and algebra because

of his difficulty with abstractions. However, the study of solid geometry

was another matter, appealing as it did to his imagination. His drawing and graphing skills can be

traced back to his schooldays and in particular to the influence of his teacher F.W. van der Haagen.

After an abortive attempt to satisfy his father and become an architect, Escher studied graphic art at the

School of Architecture and Decorative Arts in Haarlem, where his skills were further developed under

the tutelage of S. Jesserun de Mesquita.



Over the years and throughout his travels, Escher created a number of captivating landscapes, portraits,

and geometric designs, but he is best known for his tessellations, that is, coverings of the plane with

congruent figures. It appears that his interest in tessellations was sparked by a visit in 1922 to the

Alhambra in Spain, where he became intrigued with the Moorish mosaics. Instead of the exclusive use

of geometric forms as is the case in Islamic ornamentation, Escher created hundreds of tessellating

shapes in the form of fishes, birds, dogs, crabs, insects, horses, humans and other beasts. In 1923, he

moved to Italy where he met his Swiss wife-to-be Jetta Umiker. He gave the first exhibition of his work

in The Hague in 1924, which was followed by a very successful exhibition in Rome two years later. In

the next few years, he was esteemed as a draughtsman but his work was criticized for being “too

intellectual.” His art received a very positive response at the World’s Fair in Chicago in 1934.

By 1935, the oppressive political situation in Italy convinced Escher to move with his growing family to Switzerland, and, in 1941, he returned to Holland. Escher was touched in a very personal way by the Nazi persecution of the Jews in his homeland. His old teacher de Mesquita, a Jew, was taken away in 1944 and killed by the Nazis. Immediately after the war ended, Escher participated in a show of works by artists who had refused to collaborate with the Nazi regime.

Escher offered lectures about his craft, usually in connection with exhibitions all over the world. Beginning in 1956-1958, his work showed a definite trend towards merging the themes of approaching infinity and tiling the plane. This can be seen in his prints “Smaller and Smaller” (1956); “Whirlpools” (1957) continuing to the last print of his life “Snakes” (1969). Not formally a mathematician, Escher knew that he had something in common with mathematicians. In 1924 Escher read George Pólya’s paper on plane symmetry groups. While not understanding the abstract concept of groups, he did understand the 17 plane symmetry groups described in the paper. Extensive research into mathematical concepts that interested him resulted in his first notebook *Regular Division of the Plane with Asymmetric Congruent Polygons* (1941). While Escher is most famous for his tessellations, many of his drawings feature various polyhedra. For instance, his 1943 lithograph *Reptiles* features a dodecahedron. His mezzotint (an engraving on a copper or steel plate) *Crystal* (1947) features the compound of the cube and octahedron. His 1959 lithograph, *Flatworms*, incorporates the space-filling properties of tetrahedra alternating with octahedra and his *Polyhedron with Flowers* (1958) is a carving with icosahedral symmetry.

Escher was greatly influenced by H.S.M. Coxeter’s system for reducing a plane-filling motif with increasing distance from the center of a circle. Mathematical and crystallographic aspects of Escher’s periodic (tiling) works became quite popular in the late 1950s and 1960s. In 1961, Escher gave permission for a book about them to be published. The book, *Symmetry Aspects of M.C. Escher’s*

*Periodic Drawings* by Caroline MacGillavry, was published in 1965. Escher's health deteriorated during the 1960s, reducing the output of his work, and, in 1970, he moved into the Rosa-Spier-Foundation in Laren, Northern Holland, an institution for elderly artists. During March 1972, his condition worsened. His family gathered around him taking turns sitting by his hospital bed. On March 27, he died at the age of 73.

**Quotation of the Day:** “The Moors were masters in the filling of a surface with congruent figures leaving no gaps. In the Alhambra, in Spain, especially, they decorated the walls by placing congruent multicolored pieces of majolica together without interstices. What a pity it was that Islam forbade the making of “images”. In their tessellations they restricted themselves to figures with abstract geometrical shapes.... I find this restriction all the more unacceptable because it is the recognizability of the components of my patterns that is the reason for my never ceasing interest in this domain.” –  
M.C. Escher