

PAPER : ERIK AND MARTIN DEMAINE



MEET paper artists Erik and Martin Demaine and **WATCH** a video that features these artists at work. **MAKE** artwork inspired by the artists and **REFLECT** on your finished artwork as you consider what you might want to make next.

MEET

“Mens et manas: Mind and Hand.”

—Erik and Martin Demaine



MARTIN AND ERIK DEMAINE are a father-son duo with connections to both Massachusetts and Canada and known for their accomplishments in both Mathematics and Sculpture. As a young graduate from a Massachusetts high school, Martin travelled to England to study glass-blowing. Later, moving to Canada, Martin established the first private hot glass studio in Canada, an endeavor awarding him the title, “Father of Contemporary Canadian Glass.”

At an early age in his son Erik’s life, Martin became a single parent and began homeschooling him in Canada. Erik was considered a child prodigy, entering University at age 12, graduating at age 14, and achieving a Ph.D. by the age of 20, which he earned for his achievements in the study of computational origami.



They both live, work, and create in Cambridge, Massachusetts and have positions as professors at the Massachusetts Institute of Technology (MIT). In that space, they bring together the institution’s motto of “Mens et Manas” (Mind and Hand), connecting the applied studies of science and mathematics with the physical and sculptural properties found in the manipulation of paper. Their work arose from the desire to think through problems of mathematics. During the process of problem solving they began building forms in paper to assist and explain their mathematical thinking. When considering their work along with the philosophies of their educational institution, Erik offers, “It’s not just about thinking about things and solving problems in your head, but it’s also about physically doing things as well.”

Top: Erik and Martin Demaine, *Devil’s Gold*, 2021. Above: Erik and Martin Demaine, *Thinking Red*, 2024. Images courtesy of the artists and Craft in America. Madison Metro photos.

The act of “doing things” in the name of math and science, the duo began working through a series of curved, creased folded forms with the goal of proving that these forms exist mathematically. What emerged was a series of curvilinear structures with an aesthetic quality of their

very own. It wasn't long before the Metropolitan Museum of Art sought out their sculptural forms for an exhibit on science and art, and their emergence as artists was established.

Today, they move through the intersections of mathematics, science, and art as they develop forms in both paper and combined paper and glass.

WATCH



Watch Erik and Martin Demaine as they explore the properties of the paper form to study mathematics. Observe how this practice leads to the creation of sculpture.

<https://youtu.be/vb74qMEBFrg>

After viewing the segment, consider the following:

- The Demaines have a partnership that strengthens their understanding of the subject matter and deepens the scope of their problem solving abilities. Consider how Erik and Martin complement each other's work. When have you participated in a problem-solving activity strengthened by the participation of others?
- The Demaines are both educators, mathematicians, and artists. In the segment they discuss the overlapping relationship of these subjects. How do you think this cross over assists their work?
- Among the forms created by the Demaines, we see sculptural forms in a variety of colors, papers, and embellishment with words and imagery. What kind of paper could you use to create a meaningful sculptural form?

MAKE

Try creating your own sculptural paper forms.



Explore a variety of possible forms using several different kinds of papers. (lined notebook paper, printer paper, pages from a favorite novel, wrapping paper, sheet music, lyrics from a favorite song, junk mail)

Think about how the different kinds of paper can suggest a variety of meanings.

You might create a single, free-standing sculptural form out of paper. Explore working with different sizes and types of paper.

REFLECT

As you conclude the creation of your work, think about the process and the outcome.

- How did it feel to manipulate the paper in your hands? Did you find the process challenging or satisfying?
- Are you pleased with your finished piece? Why or why not?
- What would be a good title for your sculpture?
- Would you like to create additional works in paper?
- What else could you create to make out of paper?