

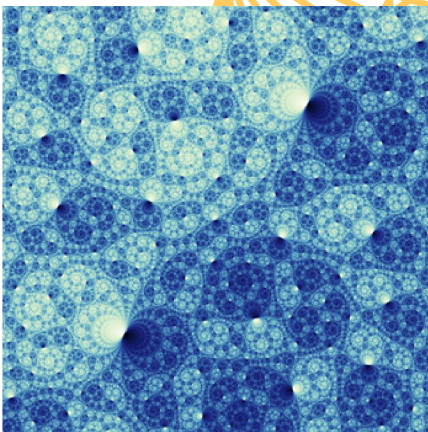
# MATH & ART

Art and math might seem different, but they are actually connected in interesting ways. Math helps artists create beautiful things! Artists use math to make shapes and patterns, create illusions of depth, and even add motion to their artworks. Let's learn about some special words that show how art and math work together:

**Optical Illusions** are like magic tricks for your eyes! They create images that can look like two different things depending on how you look.



The **Rubin's Vase** is a famous optical illusion. Sometimes you see a vase (like a container for flowers). Other times, you might see two faces looking at each other. This is created by using **positive and negative space**. Our eyes and brains naturally process black and white differently from brighter colors. Black and white often are seen as **negative space** which is often the **background**. We process color as our **subject** (person, animal, thing, etc.) which resides in what is called **positive space**. In this **optical illusion**, it intentionally confuses our brains, making us question "what is the **subject** and what is the **ground**?"



When artists create pictures or sculptures with repeating patterns that look similar no matter how big or small you go, they're using **fractals**. Artists use **fractals** to create images that are mesmerizing and beautiful. You can also find them in snowflakes, pinecones, and leaves. **Fractals** are a mix of nature, math, and imagination all coming together.

Featured Artwork: Jasper Johns (American, b. 1930), *Cups 4 Picasso*, 1972, lithograph. OSU Museum of Art, Gift of William C. Goldston. 85-0133.

David Bachman (American, b. 1969), Saul Schleimer (American, 1973), and Henry Segerman (British, American, b. 1979), *Cohomology fractal for the SnapPy manifold s227*, digital reproduction. Courtesy of the artist.