

Folding Fractals

Chaos and Fractals

College of the Atlantic.

In this lab we'll make two fractals: one with just folding, and one with folding and cutting. The goal of these activities is to explore and think about the relation between iteration and fractals, and more generally about different ways of making patterns.

Do these exercises in groups of two or three. Check with me as you do these, as the instructions aren't super clear. I will project some images on the screen that may help.

Some tips:

- When there are instructions to cut something halfway, be careful to not cut more than halfway. Err on the side of not cutting all the way. If you need to make the cut a little longer, you can. But it's not really possible to undo a cut if it's too long.
- When making creases, make them assertively.

Folding a strip of paper.

1. Take a long strip of paper and fold it toward you. Then fold it toward you again.
2. Unfold the paper and note the sequence of peaks and valleys.
3. Take the paper and fold it toward you again. What sequence of peaks and valleys do you expect to have now?
4. Unfold the paper and note the sequence of peaks and valleys.
5. Repeat the above two steps as long as you can.

Making a Sierpiński Triangle

1. Oh gosh. How am I going to explain this?
2. I'll show you portions of this video (<https://www.youtube.com/watch?v=4YDHsMUQbVg>) by Cathy Yenca, known on youtube as mathycathy.
3. Keep going as long as you are able.
4. Admire your creation.