

Fractals Research Project
Algebra 2/Trig

What do these things have in common?

** A stalk of broccoli*

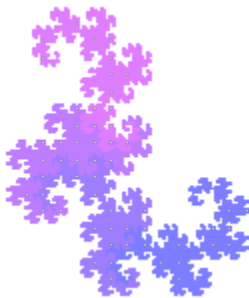


The Sierpinski Triangle

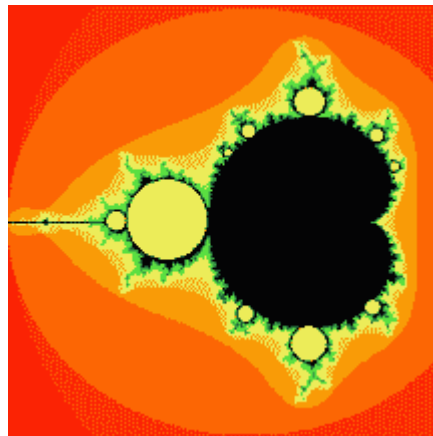


** The coastline of Maine*

This groovy dinosaur design:



** This cool thing:*



These are all examples of fractals! Fractals are really cool things that everyone should know about. They're particularly appealing to artists, nature enthusiasts, designers, engineers, scientists, inventors, and math and science fans. You might find them interesting as well.

I want you to do some research on fractals and answer all the questions below. It would be lovely for you to write a short essay or create a short video or poster or children's book (etc) about fractals that addresses all the questions below. This all must be written in your own words! Don't use terms that you don't understand. If you don't understand a term, try to conjecture what it might mean, do more research, and/or ask Ms. Stewart

- 1 How would you describe what a fractal is to your parents/guardians?
- 2 What are some properties that are true of all fractals?
- 3 What are some famous fractals that have been created?
- 4 Why do you think someone might describe the coast of Maine as being like a fractal?
- 5 Are fractals used for any practical purposes? Why are people interested in fractals?
- 6 What do you find interesting about fractals?
- 7 Why are complex numbers often used in developing fractals and how are functions used in developing fractals on the computer?
- 8 Print out a copy of a fractal you find particularly nifty.
- 9 Make a list of all the sources you used in your research.

Spend some time on this and make it FASCINATING and informative. It will be worth 10 points.