

Fabulous Fractal Frenzy

Name _____

Internet Research Guide

Getting Started: Go to this site and read this tutorial

<http://www.techlar.com/fractals/websys.exe?file=explore/tutorials/kids10a.html>

Now review a little with these few pages and then take the quiz.

<http://library.thinkquest.org/26242/kids/index.html>

How did you do?

Using the following Web sites, define each of the following terms:

<http://library.thinkquest.org/26242/full/tutorial/ch1.html>

■ Fractal - _____

<http://library.thinkquest.org/26242/full/tutorial/ch2.html>

■ Self-similar - _____

<http://library.thinkquest.org/26242/full/tutorial/ch8.html>

■ Iteration - _____

<http://library.thinkquest.org/26242/full/tutorial/ch13.html>

If .234 is considered the seed of this iteration, what do you think the seed is?

■ Seed - _____

Given the following equation and seed x_0 (the first value to put into the equation), what are the results of the first four iterations of the equation?

$y = 5x - 2$; $x_0 = 2$ (2 is the seed of this iteration)

$x_1 =$ _____

$x_2 =$ _____

$x_3 =$ _____

$x_4 =$ _____

<http://library.thinkquest.org/26242/full/ap/ap.html>

List five real-world applications of fractals:

1) _____

2) _____

3) _____

4) _____

5) _____

<http://library.thinkquest.org/26242/full/fm/fm.html>

List the names of three famous fractals and ways that you can remember what they look like:

1) _____

2) _____

3) _____

<http://members.tripod.com/~mschreier/english/fracback.html>

List three people who were/are important in the study of fractals and explain their work with fractals:

- 1) _____
- 2) _____
- 3) _____

<Http://archive.ncsa.uiuc.edu/Edu/Fractal/Fvisual.html>

Describe the method used to color fractals such as the Mandelbrot or Julia Sets.

Now, if you have time, explore some of these other Fractal Sites. Take some notes to record interesting information.

<http://math.rice.edu/~lanius/fractals/iter.html> Cynthia Lanius on Iteration

<http://math.rice.edu/~lanius/fractals/dim.html> Cynthia Lanius on fractal dimension

<http://math.rice.edu/~lanius/fractals/self.html> CL on self-similarity

<http://www.geocities.com/CapeCanaveral/2854/>

Nice web site showing various magnifications of Julia/Mandelbrot and also a short tutorial on complex plane

<http://math.bu.edu/DYSYS/index.html> Bob Devaney's BU website with lots of info

<http://archives.math.utk.edu/topics/fractals.html> Long list of fractal websites

<http://mathworld.wolfram.com/> A nice website that has a search engine which produces lots of info on fractals.

Lots of higher level math with basic definitions in between.

Ready to start on designing your project? Save this document on your disk and fill it out and turn it in.

Fractal Frenzy Project Proposal - Word Document