

## Student Reactions to Writing a Fractal Story

Positive:

"... I loved the fairy tale....The fairy tale for me was a breeze. I like to think I have always been exceptional at creative writing and thoroughly enjoyed the open-ended instructions that you allowed us."

"The assignment that I found to be the most helpful in understanding the ideas of fractals was the Fractal Paper. ... I really had to think very carefully about what the fractal is, what it does and how it works.... turning that into a story for children was the most difficult part, but it helped me to obtain the full understanding of the image [sic]."

"By looking at a fractal and then breaking it down to reconstruct a story was excellent for me. [sic] By the time I was finished with the story I really understood my fractal."

"It was challenging to write the story in a way that elementary kids might get an understanding of how a fractal is self-similar and repeating. I had to look at a fractal from a different perspective and this reinforced the process in my mind."

"I found the Fractal Paper to be most helpful in understanding the idea of a fractal. As a middle school mathematics teacher, I have heard these questions many times: 'Why do I have to study this? When are we ever going to use it?' ... This assignment demonstrated the usefulness of mathematics... It required me to... link the concept of fractals to language arts through writing."

"Creating a fairytale was a lot of fun. I felt that it was well related to my early childhood education background. Writing the fairytale also made me realize that I truly understood the concept of a fractal."

"The whole idea of inventing a story that involved the use of a fractal we were working on helped me to work out the recursion process in my mind of the fractal.... Without understanding the fractal fully I don't think it would be possible to devise a story to go along with it. By telling a story I was in a way explaining to myself the way the fractal worked and looking at it in a way that readers who knew little to nothing about the particular fractal could broaden their understanding of the fractal."

"...While writing the story, I needed to incorporate mathematical ideas in a simple form. ... I think that breaking down the concept in this way helped me to better understand the concept of a fractal."

"...I enjoyed the freedom we had to choose any one of the fractals from our book and the freedom we had to write about any topic. The creativity that this freedom inspired was evident in all the wonderful stories we heard in class."

"The project that I found to be most helpful in understanding the idea of a fractal was writing the fractal story.... I had to look at the characteristics of a fractal and then think of an example in everyday life that showed these characteristics.... Actually connecting my fractal with a real world situation and object helped me understand what a fractal represents and how it can be applied in different areas other than just geometric figures in math."

"... I have always enjoyed writing creatively.... At this point in my life all the writing that I do is for school, and most of it is not what I would call creative writing.... This assignment has resparked my interest in writing.... The most enjoyable part of this assignment was making the story creative and interesting so that children will want to keep reading and learning."

" ... I haven't been able to sit down and write a story or paper about whatever I wanted in a long time, so it was nice to finally be able to do that."

"By far the most enjoyable assignment this semester was creating a fictional story which incorporated the concept of a fractal.... I enjoyed the assignment because it allowed me the opportunity to create an activity that I will be able to use again in my future classroom."

" I love being able to use my imagination and creativity in a constructive way. I was able to use the binary tree fractal to create a story that had castles, magic blue fog, burning shacks and a tree that produced both peaches and pears for a great king. I really enjoy being able to express myself through writing and creating stories."

"I feel writing the fractal fairy tale was the most helpful [assignment]. In order to write the story, you had to know your fractal inside and out. Once I had investigated one fractal thoroughly, understanding other fractals was much easier."

"after writing the story, however, I understood the concept of fractals a lot better.... I was able to use my imagination... I got involved in this paper.... It also helped to hear other students' stories about their fractal. I was able to see how different each story was and how they all still applied to the fractal."

"... I had to be able to explain the fractal on a simple level that a young child would understand. This meant I really had to think about the fractal, and be able to describe it in the clearest way I possibly could. In order to do this I had to think about the fractal more than I did with any of the other projects."

"At first, I found it difficult to produce a scenario with repetitiveness like my fractal. Once the idea came into my head though, I could not stop writing until my story was completed. ... for this assignment I had to go outside of thinking about math. I had to use my imagination and creativeness to complete a story for younger children."

"...writing the Fractal Story helped me understand the concept of a fractal the best [of the assignments]...applying the definition [of a fractal] to something that I created, really helped me understand the concept of a fractal."

"I was given a lot more room to be creative with this project and was able to gain a really clear understanding of one particular fractal."

"writing an original fractal story...really made me think about what a fractal is ... After I wrote the story, I realized that what I had questions about before, I answered through my writing. If I wrote a pretend story for each of the fractals, I would probably have a better understanding of all of them, although that would be too much work."

"[writing the fractal story] was probably one of the first times that I took the initiative to look up the actual definitions and understand what these terms really meant."

"I liked this [ the fractal story] because it made me realize that math can be fun both in and out of the classroom."

"I enjoyed creating the characters and all the other aspects of writing the story. I enjoyed it because it let us be really creative and we were able to put our individuality into it."

"this story was a lot of fun to write because I was able to be as creative as I wanted. ... I worked in a fourth grade classroom this semester and they probably would have enjoyed the story... the class I worked with inspired me on what to write in my story."

[25]

Negative:

"I found the fractal paper to be the most difficult (assignment) because I had a very tough time coming up with an idea for my story.... I had a difficult time writing it to make sense for elementary children. I wasn't sure that they would understand the concept of a fractal from my story."

"I would rather do math problems with numbers than have to write a paper. This must be why I am a math major."

"Personally, I have always had trouble with creative writing.... Creating my own fable was my worst nightmare.... I struggled throughout this entire assignment."

"...While I picked a fractal that I understood thoroughly, I felt it not only difficult to explain it on an elementary level, but difficult just coming up with the creativeness the paper required. I thought my paper turned out to be pretty good, but after hearing some of the stories read in class, I realized how much my story lacked creativity. Oh well, I guess that is why I am a math major and not an english [sic] major."

"Writing is not my best subject. .. I spent a lot of time struggling to find a plot for the story."

"It was hard to take a complex idea with so much involved and bring it down to an elementary student's level."

"Even though I had a perfect understanding of my chosen fractal it was impossible for me to create a story line associated with it."

"It was hard to think of a story that was both entertaining and educational."

[8]

Mixed:

"...writing a fairytale that is about a fractal is not easy. I had a hard time writing it for my target audience, ..., without getting too technical and confusing.... I enjoyed hearing my classmates' stories; they were very good and even helped me to understand their particular fractal."

"I had a difficult time trying to apply a fractal to a concept that children would be able to grasp and enjoy. I had to let my imagination go wild,... Once I realized that anything could happen in fairy tales, it was easier to make up a story using the ideas and concepts of fractals."

"...Although I found this assignment difficult, I think it is a good assessment of whether or not students understand fractals."

[3]