Patterns Portfolio
By Sean Walters

<u>Cover Letter</u>

In the Patterns Unit, we have went over many things so far.
We've covered...

- Slope-Intercept
- In-Out Tables
- Order of Operations
- Summation Notation
- Consecutive Sums
- Conjectures
- Proofs
- Geometry
- Positive and Negative Numbers (Hot Cubes and Cold Cubes)
- Algebraic Expressions

All of these math topics give us a better understanding of how patterns in math work.

  Usually every day we do a class starter for the first 2-5 minutes of class. Then we work with our group to finish up the problem for the class starter. After that we work on an assignment, either silently or with our group. Mr. Powell will give us the assignment and then slowly go over the directions with us. He will make sure that we are paying attention and will make sure that we understand the problem and what to do to solve it. The papers that we do are pretty easy and are really easy and fast to do. But if you don't pay attention or you aren't doing your work you have to do the assignment as homework. Mr. Powell usually gives us a good amount of days to complete a paper and helps us along the way of learning all about it. Then we get started on working on the assignment. If we don't finish it, it will be homework.

  After we finish an assignment, we then know how to do those kinds of problems in the future and how to do them fast and easy using different ways to solve it. We can use rules, equations, and many other things that we have learned in each assignment to help us solve problems faster and easier.

  Mathematical concepts are pretty easy to learn about and understand for me in this class. We have lots of fun doing different mathematical concepts since we do so many so fast every week. Mathematics is the study of topics such as quantity (numbers), structure, space, and change. There is a range of views among mathematicians and philosophers as to the exact scope and definition of mathematics. As you can see, we learned and will learn a lot of math and the patterns in it.

Explanation of Selected Papers

For In-Out Tables, I selected Inside Out and Pulling Out Rules.
Inside Out helped people understand how these tables work, since they were fill in the blanks. I understand the In-Out Tables easily in this paper because of this and because I already knew what X and Y Tables were. All we had to do was find the rule and create a sentence explaining that rule for the tables, which I did. Then on the back we had to create our own tables, which is very simple to do unless you want to do a complex one that is hard to solve. Pulling Out Rules shows you that I know what In-Out/X-Y Tables are because I found the rule, put it into a sentence, and made steps to show what to do to get the out with the given in. I understand how to use these tables because in these papers I show you the rule, a sentence describing that rule, and some steps to get the out with the given in. To use In-Out tables, all you have to do is create a rule and use it to create a table that uses that rule.

Then for Angles I selected Degree Discovery and Polygon Angles.
The paper really only refreshened my mind a bit about shapes. I reminded me of that pattern on shapes and angles and how they all match up somehow.
Degree Discovery showed me and everyone else in class that shapes with different sides all have a different total amount of angles in degrees measured from each angle in that shape. The paper showed me that a shape with 3 side, a triangle, had 180 degrees total, from the angles added up and a shape with 4 sides,a quadrilateral, had 360 degrees total, from the total of measured angles. Add another side, add another 180 degrees. 5 sides - 540 degrees. The list goes on and on. Polygon angles did the exact same thing, but on a bigger scale. It made us find the pattern from a 3 sides shape to a 7 sided shape or even more,i if you wanted to. There's a pattern with the shapes, sides, and angles. They add a side, they add 180 degrees.

For the P.O.W, I selected the Broken Eggs P.O.W. I did this because I believe and was told that this was the only P.O.W that we have done since the beginning of school. First of all P.O.W means Problem of the Week. Now, if it was the problem of the week, we would have plenty. I chose this paper because I thought it was a fun puzzle problem to think about and try to solve. This mystery puzzle was very clever and hard to figure out for a lot of people. Try to solve it for yourself!

Another great paper that I had fun doing was Diagonally Speaking. In this paper we had to find out how many diagonals were in a shape from 3 sided shapes to 12 sided shapes. Now for this assignment, I found and created a rule that worked perfectly for this assignment. That definitely took some effort to find. The rule is to take the amount of diagonals from one angle in the shape, multiply it by 2, and subtract it by 1.

Personal Growth

Before I usually didn't go to anyone else for help, but now it's really good to be in a group and discuss the problem because you can get different ways and different opinions to help you and your group solve the problem. And now I feel very comfortable doing that and working with others because of the extra help.

I like to share my work with the class to help others in the class that are having trouble and now I feel very comfortable knowing that I can help people that need help for the problem they're having trouble with and I feel like I have progressed in doing that. I can talk about my process for the problem a lot better and help others understand easier and I feel like I progressed in doing that better.

I feel like I progressed in writing my thought process because I can organize it better, make rules to help, and overall make it more understandable for others that are reading it.

I think I need to work on my organization in my work because it will drastically help people understand my work a whole lot better than with unorganized work that isn't easy to understand. I don't really feel like

I have any other thoughts about my experience with this unit other than it being a refreshment in my mind for previous math.

Self-Assessment

For the entire portfolio, I would give myself 3-4 points for each thing in the portfolio...

Cover Letter Introduction - 15/16

Explanation for Selected Papers - 18/20

Selected Papers from Patterns - 20/20

Personal Growth Discussion For Patterns - 27/28

Self-Assessment - 3/4

Now I'm going to be honest. I really don't understand what to do when the instructions for the self-assessment in the portfolio say to "Grade and justify your work using a self-assessment scoring rubric 4." Do we grade our selected papers or do we grade our entire portfolio. I graded my portfolio. Hopefully you enjoyed this portfolio.