**Week 22– The Next Best Chocolate Bar**

**Unit:** Measurement and Geometry

**Grade:** Grade 9

**Curriculum Expectations**   
 **MPM 1D/ MFM 1P:** Determine the maximum area of a rectangle with a given perimeter by constructing a variety of rectangles, using a variety of tools (e.g., geoboards, graph paper, tooth- picks, a pre-made dynamic geometry sketch), and by examining various values of the area as the side lengths change and the perimeter remains constant  
**SEL:** Work through challenging math problems, understanding that their resourcefulness in using various strategies to respond to stress is helping them build personal resilience.

**Activity**1) You are the owner of a new chocolate company and its up to you to design the first chocolate bar!   
2) Given the set perimeters, you must determine the maximum area of the rectangle so that the chocolate bar has as much chocolate as possible. After you complete the chart with the maximum area for each perimeter display your findings using a graph.  
3) Select one of the dimensions from the chart to be the size of the new chocolate bar.  
4) Now it is up to you to create a label for the new chocolate bar! Create a rectangle using paper that is the same dimensions as your chocolate bar and design the packaging. Figure out what ingredients you want in your chocolate bar and make sure that is included on the label.

**Check for Understanding**   
I can determine the maximum area of a rectangle with a given perimeter.  
I can display my findings in a graph.

**Materials**   
Recording sheet and graph attached below, pencil, pencil crayons or markers, paper and scissors

|  |  |  |
| --- | --- | --- |
| Perimeter | Maximum Area | Dimensions of the Rectangle |
| 40 cm |  |  |
| 50 cm |  |  |
| 60 cm |  |  |
| 70 cm |  |  |
| 80 cm |  |  |
| 90 cm |  |  |
| 100 cm |  |  |

