**WEEK 20 – Recreation Centre Planning**

**Unit:** Number Sense and Algebra

**Grade:** Intermediate (9)

**Curriculum Expectations**  
**MPM 1D/MFM 1P:** rearrange formulas involving variables in the first degree, with and without substitution (e.g., in analytic geometry, in measurement)

**SEL:** make connections between math and everyday contexts to help them make informed judgements and decisions

**Activity  
1)** For this activity, you are designing a recreation centre and must use your ability to rearrange formulas in order to determine the dimensions of the various sections that make up the rec centre **2)** The rec centre will have a pool in the shape of a circle, a community garden in the shape of a triangle and a basketball court in the shape of a square. There is a diagram below to help you visualize  
**3)** You will need to know the following formulas. Circumference of a circle 2πr. Area of a square is base x height. Pythagorean Theorem to determine the hypotenuse of a right angle triangle is a2 + b2 = c2  
**4)** You then use the questions below as the basis for engaging with the measurement of the various elements  
**5)** When you are finished, consider how you might redesign the rec centre to accommodate more people.

**Check for Understanding**   
I can rearrange formulas to determine geometric properties  
I can determine area and perimeter of a shapes given limited details  
I understand the relevance of rearranging formulas in my everyday life

**Materials**   
Recording sheet (attached below), pencil, information sheet below or internet access, calculator

The pool is in the shape of a circle with a circumference of 17. The diving board is half the length of the pool, how long is the diving board?

The basketball court has a square fence around it and is 1/3 the length of the entire yard. The diving board from the pool is half of the side length of the basketball court. How long is the entire backyard? What is the area of the basketball court?

What is the area of the entire backyard?

The garden is in the shape a triangle with the height measuring 2.67 and hypotenuse measuring 4m. The height of the triangle is 1/3 the height of the entire garden. What is the area of the garden?