**Balanced Math Planning**

**Date**: January 16, 2014 **Amount of Time**: 2 X 30 minutes

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| * **Strand**: Geometry and Spatial Sense – Pythagorean Theorem  **Expectation**: Solve problems involving right triangles geometrically, using the *Pythagorean Relationship*.  **Big Idea**: Measurement formulas allow us to rely on measurements that are simpler to access to calculate measurements that are more complicated to access. | |
| **Minds On** | |
| **Open Question** | The length of one side of a right triangle is 10cm. What could the lengths of the other sides be? |
| **Action**  Balanced Math Centres | |
| **Math Facts** | Practice with squares and square roots. Worksheets can be made on [www.worksheetworks.com](http://www.worksheetworks.com), [www.homeschoolmath.net](http://www.homeschoolmath.net), or [www.math-drills.com](http://www.math-drills.com) |
| **Math Games** | Pythagorean’s Fill In board game – students choose to use paper gameboard or projector version  **STUDENTS SHOULD CHECK EACH OTHER’S WORK** (or solve for c together) Find at Teachers Pay Teachers – free! <http://www.teacherspayteachers.com/Product/Pythagoreans-Fill-In-822435>  **Digital Connection:** have game board projected on the whiteboard and students use whiteboard markers to play (need ONE computer for this activity to be hooked up to the projector) |
| **Independent Problem Solving** | **Digital Connection:** Students use iPads (app: Explain Everything) to provide an audio recording explanation of their solution.  Students will upload their responses to our class dropbox. Problem:  Draw a right angle triangle, choosing measurements of your choice for leg lengths. Find the hypotenuse, then explain your answer using Pythagorean Theorem. Record your answer on Explain Everything. |
| **Shared Problem Solving** | **Option 1:** A television screen has a diagonal length of 100 cm from one corner to another. What might be the length and width of the screen? Explain in terms of GRASS, making sure to include a diagram to support your thinking.  **Option 2**: A 15-unit tall ladder has a warning that reads “Bottom of ladder should rest between 3 and 4 units from the wall”. What are some heights that a person standing on the ladder can reach? Explain in terms of GRASS, making sure to include a diagram to support your thinking.  - from Good Questions for Teaching Mathematics by Lainie Schuster and Nancy Canavan Anderson |
| **Guided Problem Solving** | triangle question***For majority of students:*** Have students go through the  process of solving a multi-step problem; use GRASS to solve. Solve for d.    ***For students who are struggling:*** Have them solve a problem that requires them to solve for the hypotenuse. Use: Max runs diagonally across a rectangular field that has a length of 40m and a width of 30m. What is the length of the diagonal, in meters, that Max runs? |
| **Digital Learning Tools** | **Digital Connection**: Students use their own logins to connect to [www.explorelearning.com](http://www.explorelearning.com) and complete Gizmos using our laptops and classroom computer: Pythagorean Theorem – Activity A  Pythagorean Theorem – Activity B |
| **Consolidation** | |
| **Consolidation**:  Snowball activity:  Students write down two things they learned about Pythagorean Theorem during rotations on a piece of paper (no name – this is anonymous).  Students stand in a circle, crumple up their responses, and toss them into the center of the circle.  Students each grab one response rom the center and read it to themselves.  Go around the circle, having students read out the responses.  (students have the right to “pass” if they don’t feel the response they have is appropriate – it sometimes happens in this activity)  **Journal**: The diagonal lines join at right angles. Each line is 8cm long. What is the perimeter of this square? Use GRASS to solve. | |