



E-mail to [MPedersen@paulding.k12.ga.us](mailto:MPedersen@paulding.k12.ga.us) no later than May 14, 2018.

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### “Promising Practices Classroom Activity”

Title of Activity: Conceptual Understanding to Procedural Fluency

Recommended to use with this number of students: normal class size, in small groups of 2-4

Content Area: Mathematics, Math 8 content Grade Level(s): 8 & Accel 7

Match to Georgia Standard(s): MGSE8.G.1-2, 4; MGSE8.E.8.EE2-3; MGSE8.NS.1; MGSE8.G.7

Note: Use the remainder of this page and up to one additional page for describing the activity.

Several activities will be discussed the Tessellation activities, the Cartoon Dilation activity, Painter’s Tape Perfect Squares, Sugar Cube Perfect Cubes, Painter’s Tape Pythagorean Theorem, Pythagorean Triple dates, Find my Pi Day, and the Real Number System box. MGSE8.G.1-2

In the tessellation activity students discover why translations, rotations, and reflections are isometric (rigid) transformations. The cartoon dilation activity provides an opportunity for students to explore the similarity of a dilated school appropriate single frame cartoon of their choice. MGSE8.G.4

Students, in small groups, create squares consisting of tiles that are equal to the first 12 perfect squares going all the way down the 8<sup>th</sup> grade hall. Students then walk the squares stating the square roots as they go from one end to the other. Using sugar cubes, students build cubes using the number of cubes it would take to create the first 4 or 5 perfect cubes. The students then discover the cube root of each cube.

MGSE8.E.8.EE2

Students in small groups, using the tiles (most tiles in our school are 1 ft<sup>2</sup>) on the floor in a large space like a rotunda or the cafeteria and painter’s tape create right angles with specific side lengths, EX. 3’ & 4’, 6’ & 8’, 9’ & 12’, 5’ & 12’, 8’ & 15’, 7’ & 24’, two groups per set. Then using measuring tapes from the PE department, they measure the hypotenuse and discover that depending on the leg lengths, the hypotenuse is the same for the groups that had the matching leg lengths. We then talk about Pythagorean Triples and dilations of Pythagorean Triples, how the side length pattern is preserved and the angles remain congruent when similar figures are formed. Students then look at the Pythagorean Triples and determine how many, as DATES, they were alive to experience! MGSE8.G.7

The Real Number System box is a concrete nesting activity that demonstrates the subsets of the Real Number System. Find my Pi Day <http://mypiday.com> is a fun website that finds your date of birth in the decimal digits of Pi! MGSE8.NS.1 The Powers of Ten-Ultimate (micro-macro-Imax combined) <https://youtu.be/bhofN1xX6u0> takes students on a visual journey from  $10^{-18}$  to  $10^{26}$  and back again one power of 10 at a time. Pretty mind blowing for 8<sup>th</sup> graders to see what one power of 10 will do!  
MGSE8.E.8.EE.3