The Algebra Newsletter Vol. 2 Issue 1

Leading with Algebra

Welcome to Year 2 of the Algebra Newsletter!

We are happy to have received funding to continue distributing the Algebra Newsletter. We would greatly appreciate feedback on what features are useful to you or if there are new features that would be helpful. Please let us know!

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Updates from PARCC:

PARCC has put together an hour-long webinar specifically for teachers to present the changes in the coming year's PARCC administration and preview the new score reports that will be coming out soon. You can watch the video here. You also can download the presentation. PARCC has also created a website to help parents understand the new reports: http://understandthescore.org/

Updates from the Department of Math:

The final list of recommended Instructional Materials is located at the Knowledge Center.

Additionally, the Department of Math has created Math Instructional Units (MIU's) that align to each of the recommended Instructional Materials. The first two units for each program are available at the Knowledge Center. More MIUs will be added throughout the year. Please use the MIUs as part of your unit planning!

Did you know? You probably know that the symbols that we use for numbers today are a direct import of the Hindu-Arabic numerals. Where does the use of the letters *x* and *y* for variables originate? The short answer is that no one knows for certain, but we do know for certain that in his landmark work, *La Géométrie*, René Descartes (1596-1650) was the first mathematician to consistently use letters at the end of the alphabet for unknown quantities and letters from the beginning of the alphabet for known quantities. Ever since then we have been doing the same.

Check out the Teaching Channel !

The Teaching Channel is a non-profit online community focused on teachers learning from each other. Their motto is "Getting Better together." Their videos are well-produced and engaging, e.g. watch the video "My Favorite No" Or download their free ebook Using Video for Professional Learning,

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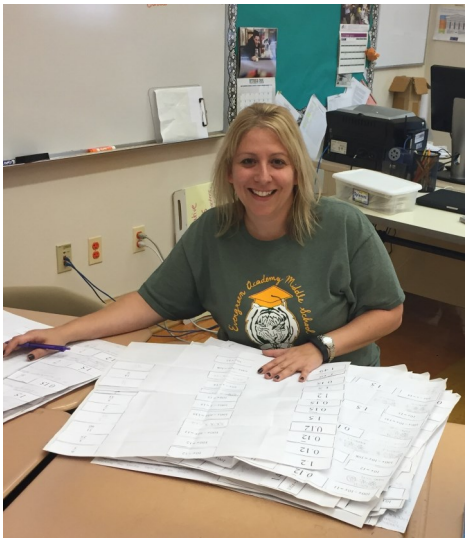
Math Challenge of the Month

George Crackham put five paper bags on the breakfast table. On being asked what they contained, he said: "Well, I have put a hundred nuts in these five bags. In the first and second, there are altogether 52 nuts; in the second and third there are 43; in the third and fourth, 34; in the fourth and fifth, 30. How many nuts are there in each bag?

Source: 536 Puzzles and Curious Problems , H. E. Dudeney

Teacher Spotlight: Carla Gurgone, 8th Grade Math Teacher, Evergreen Academy Elementary School



A conversation about using the Formative Assessment Lesson, Repeating Decimals, which addresses Common Core State Standards 8.NS and 8.EE.

Q: Where did this FAL fit in your instructional unit? I taught this particular lesson about halfway through the Mathematics Instructional Unit "Real Numbers, Exponents, and Scientific Notation" from the knowledge center. The students were struggling with different ways to represent rational numbers so I chose to incorporate this one as well as the one listed in the MIU.

Q: What do you think your students learned or gained lesson?
I noticed that students in my class, particularly those who are lacking computational fluency struggle with the algorithm of converting fraction to decimal and vise versa. This FAL offered them an alternative way of connecting forms of rational numbers without such taxing computation. In this FAL they use the basic moves of solving an equation to find equivalence between the fractional and decimal form. Students were making connections, seeing patterns, and pairing repeating decimals with fractions.

Q: What did you like about this particular lesson?
The students were engaged in the task! For them to be able to move the cards around, attempting to pair them correctly, really kept them focused. It was kind of like solving a puzzle. The task definitely had a high ceiling, but all students found the math in this lesson accessible at some level. The structure of this lesson allows me to target and question individual students while other students moved on and worked on the more challenging cards.

Q: What advice do you have for teachers that are interested in using this Formative Assessment Lesson?
Don't be overwhelmed by the 15 pages but print them all! Read through, annotate and highlight what is important. Read the suggested questions throughout the teacher script and keep them with you while you are circulating among groups. Be flexible about timing. Sometimes it takes longer than I expect for students to discover things-but I know not to cut the group exploration piece short. Sometimes, we pack up and come back to it the next day.

These lessons do take a lot of preparation, but the end result is an authentic piece of student work (created entirely by them!) that is evidence of their thinking, ability to make connections, and to generalize.

Math Talk Idea

Excellent math talks for the beginning of the year include mental math, especially multiplication. For example, consider

$$24 \times 15$$

The process of breaking a number into parts (e.g. 20 + 4 or 10 + 5) and using the distributive law is a powerful mathematical idea which underlies the abstract ideas of algebra. Another product that relates directly to algebraic ideas is:

$$21 \times 19$$