

Leading with Algebra

Welcome to Issue 2 of the Algebra Newsletter!

We hope you found the first issue of the newsletter helpful to you as a teacher. Please send us comments (positive and negative) and let us know what features or topics are useful or could be useful to you.

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Updates from PARCC: PARCC has released new performance based [practice tests](#) in both computer and paper forms for grades 3 through 11. These are in addition to the end of year sample tests and [sample tasks](#) that were released earlier. Additional updates are on the [PARCC site](#).

Updates From CPS: Following up on the college graduation report from the Chicago Consortium on School Research, CPS has established a partnership with area universities to work on improving college enrollment, persistence, and graduation rates. CPS has also established an innovative training program for high school guidance counselors. Read about it [here](#).

Updates from the Department of Math:

A practice version of the Algebra I Exit Exam has now been posted on the [Algebra Exit Exam](#) page of the Knowledge Center! In addition to the exam, you will find an updated Algebra Exit Exam Blueprint, instructional resources, and an informational document for teachers.

Relevant reading

Jo Boaler, Professor of Mathematics Education at Stanford University, started her career teaching math in London public schools. She has researched problem-based mathematics curricula, ability grouping, identity and gender in the mathematics classroom. Her new website youcubed.stanford.edu has teaching ideas, sample tasks for grades K-12, and [short papers for teachers and policy makers](#). Highly recommended!

For additional info about Leading With Algebra, visit the [site](#).



Math Challenge of the Month (for you, your students, or both)

On a fence are sparrows and pigeons. When five sparrows leave, there remain two pigeons for every sparrow. Then twenty-five pigeons leave, and there are now three sparrows for every pigeon. Find the original number of sparrows.

(Source: A. Posamentier, C. Salkin, *Challenging Problems in Algebra*)

Teacher Spotlight: Lorri Platek, 7th and 8th Grade Math Teacher, Little Village Academy

A conversation about using the formative assessment lesson [Applying the Properties of Exponents](#), which addresses Standard [8.EE.A](#) Work with radicals and integer exponents

Q: What were the students learning in this FAL and where did it fit in your instructional unit?

This FAL was at the end of my 8th grade unit. Students had done investigations previously in Connected Math where they learned exponent rules, which helped so they had context. In this FAL, students had to evaluate and compare expressions, and find other expressions that had the same value.



Q: You use FALs often. What did you like about this particular lesson?

I liked that this activity was engaging, with accessible entry points for all students and was challenging even for my higher performing students. The students did not use a calculator, but were able to use a Power Table that they had made in an earlier investigation. There were expressions that did not match any particular rule, which pushed students to think in multiple ways.

Q: How did you assess your students?

I used a checklist and kept anecdotes about the students' thinking process, if they understood negative exponents, what mistakes they were making, and how they were approaching the task. Sometimes I use the pre-assessment to group the students.

Q: What advice do you have for teachers that are interested in using a Formative Assessment Lesson for the first time?

Don't be afraid to mess it up! They seemed daunting at first, but now I use them in every unit that I teach. Print off the teacher materials, read through it, and highlight what's important to you. Even though they are long, the teacher materials are easy to use. You can use the visuals and questions in a Notebook file if you are using a Smartboard. Since using the FALs, I now think of ways to engage students. I have them sort and compare things and have made activities on my own.

Math Talk Idea

To help your students to develop a deeper understanding of the concept of the y-intercept, ask your students: "What is the y-intercept?" for each of the following relations in succession.

$$\begin{aligned}y &= 2x + 5 \\y &= 2x^2 - 3x + 5 \\y &= (2x - 1)(x - 5) \\y &= 2(x - 1)^2 - 5\end{aligned}$$

Beginning learners often come away with the impression that the y-intercept is always the last constant term in an expression involving x (e.g. the b -term in $y = mx + b$ or the c -term in $y = ax^2 + bx + c$). This math talk can help move students to the more conceptual understanding