

Leading with Algebra

Dear CPS Math Teacher,

Welcome to the inaugural issue of a monthly newsletter related to teaching algebra and algebraic thinking at the middle school level. You will find great teaching ideas, profiles of some of your fellow teachers, and links to useful news and articles. In addition you will be part of a small group led by a fellow teacher who can be a personal point of contact for you.

This newsletter is made possible through funding to the STEM Center at DePaul University from the Bill and Melinda Gates Foundation.

Updates from PARCC: read the [latest](#).

Updates From CPS: The University of Chicago Consortium on Chicago School Research released a study showing that CPS graduates have a significantly higher rate of completing college than just ten years ago. Read all about it: [On Track Study](#).

Updates from the Department of Math:

In preparation for this year's Algebra I Student Exit Exam, a full practice exam will be available in early February. It will include the number and type of questions that will be on the operational exam in May 2015. Additionally, see these [Algebra I Instructional Resources](#) that align to the Exit Exam Blueprint to support student learning around key algebraic concepts.

Relevant reading

We have all heard it from our students: "I'm no good at math." And as teachers we all know that it isn't true. An article summarizing some recent research that you will enjoy reading is "[The Myth of 'I'm Bad at Math'](#)" by Miles Kimball and Noah Smith (The Atlantic).



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

A team of farm-workers was assigned the task of harvesting two fields, one twice the area of the other. They worked for the first half of the day on the larger field. Then the team split into two groups of equal number. The first group continued working in the larger field and finished it by evening. The second group harvested the smaller field, but did not finish by evening. The next day one farm-worker finished the smaller field in a single day's work. How many farm-workers were on the team?

[Source: [Illustrative Mathematics](#)]

Teacher Spotlight: Sandra Shorter, Middle School Math Teacher, Arthur A. Libby School

A conversation about using the Formative Assessment Lesson [Steps to Solving Equations](#) which addresses Common Core Standard [7.EE Equations and Expressions](#).

Q: What were the students learning in this FAL?

They learned to find equivalent expressions and equations to develop their understanding of the “solving equations” process. The lesson brings about different ways for solving equations, and also use of the distributive property.

Q: What surprised you about how the lesson went?

Some worked backwards from the solution, knowing that $x = 3$ and from there, that $2x = 6$. The FAL exposed me to all the different ways that students were thinking, how they saw equivalence, and how they justified their steps. These ways of thinking would not have been brought about by the teaching of the basic algorithm of solving equations.

Q: Do you have advice from someone who is thinking of trying this lesson?

Even though the FAL has multiple pages, it's actually easy to read and digest. Make sure you are prepared with materials cut out ahead of time. Also, make sure you don't cut the time for discussion. Time will be tight, and realize that not all students will finish matching everything, but they will learn from what they do match. Lastly, allow them to observe other groups and ask other students for their rationales.

Q: When is your next FAL?

A: Next week! For sixth grade [Laws of Arithmetic](#).

Send us feedback!

Do you have suggestions for regular features for future newsletters?

Do you have favorite algebra-related resources you would like to share with other teachers?

Please let us know

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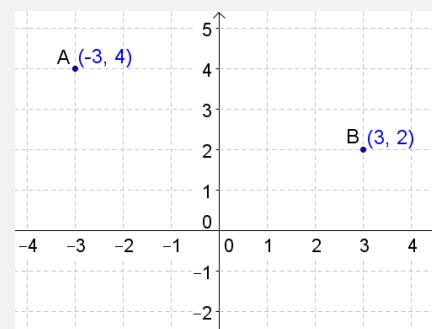
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For additional info about [Leading With Algebra](#), visit the [site](#).



Math Talk Idea

Math Talks are a highly effective form of formative assessment that help create a classroom where the focus is on mathematical ideas and multiple ways of solving problems. They also significantly develop your students' communication skills and mental math skills. Here is an idea for a math talk for 7th and 8th grade classes. On the blackboard or on a screen, put up a coordinate system with two labelled points. For example,



Here are some great prompts for your students:
What is the y-intercept of the line passing through A and B?
What is the x-intercept of the line passing through A and B?