

DOINGWHATWORKS



Audio

FULL DETAILS AND TRANSCRIPT

Algebra Boot Camp

Longfellow Middle School, Virginia • November 2008

Topic: National Math Panel: Major Topics of School Algebra

Practice: Multiple Paths

Highlights

- Rationale for implementing Algebra Boot Camp
- Algebra topics emphasized during week-long experience
- Instructional pedagogy employed with students in Algebra Boot Camp
- Grade-free assessments to ensure learning of concepts
- Attainment of goals for Boot Camp students in Honors Algebra I class
- Extending concept of Algebra Boot Camp during school year

About the Site

Longfellow Middle School

Falls Church, VA

Demographics

66% White

19% Asian

7% Hispanic

5% Other

3% Black

7% Free or Reduced-Price Lunch

6% English Language Learners

11% Special Education

Longfellow Middle School has a reputation of academic excellence, recognized nationally in the fields of mathematics and instrumental music, and named in the top 5% of the state's schools by Virginia's governor.

Features of how mathematics is taught at Longfellow:

- Rigorous requirements in all mathematics courses;
- Honors, Geometry Honors;
- Math for Success after-school program for extra support for all students and Power Math semester-long course for small group of students to support them in regular math courses;
- Computerized pre-algebra modules used to help individual skill practice based on student needs,
- Routine use of peer explanation of approaches to problems;
- Courses for acceleration of gifted students in mathematics; and
- Algebra Boot Camp to prepare incoming Honors Algebra I students for the content and expectations of the class.

Full Transcript

Hello, this is Marie Pelosi, the Math Department Chair and Math 8 teacher at Longfellow Middle School in Falls Church, Virginia. Boot Camp Algebra is an algebra prep course primarily for Math 7 students who were recommended by their teacher for Honors Algebra I in eighth grade. We started this Boot Camp two years ago because our algebra teachers were finding that the Math 7 students—our general ed. population—were not nearly as prepared for Algebra I as their peers who took Honors Math in seventh grade. The honors students already had so many of the algebra concepts that they were taught in the Math 7—the Honors Math 7 curriculum. But on the other side of that, our gen ed. students were basically being introduced to that information for the very first time. After the first quarter, we had many students transfer back to Math 8 because they just weren't ready for the algebra from the Math 7 classes.

We started the Boot Camp or the Algebra Prep course in the summer in order to get those kids up to speed and where they would be a little more prepared and feel a little bit more confident with their peers in September. Parents were very happy about somebody offering something like this for their child and getting them ready in preparing them for a high school course. The Algebra Prep Boot Camp is conducted here at Longfellow Middle School, and it went for one week for five days for four hours a day. The essential mathematic concepts that are the focus of the Boot Camp are introducing number systems or number sets, order of operations, using substitution principle to evaluate variable expressions, translating word phrases

into mathematical symbols, properties of real numbers, laws of exponents, combining like terms, solving multi-step equations and literal equations, and then writing equations to solve word problems. Those are exactly what the algebra teachers have asked me to teach. The symbolism and the vocabulary that comes from these particular concepts really sets the tone for Algebra I. These are the important concepts that make our students successful.

The instructional pedagogy used to present the concepts in the Boot Camp is basically direct teacher instruction and student activities. I'll go through an explanation, I'll dipstick, asking questions, checking for understanding as I go through it. We will practice whatever it was that I had taught or whatever I had discussed. And then, we will go over the problems that seem to be the common error for the group as a whole. I may have them come up and teach what had been taught in the morning. We also do interactive notebooks to reflect what was taught, and then I look at those, and I comment on what they have done or where I think they are making mistakes and show them how to do it again. The Algebra Boot Camp is grade free. What I usually will do are short, little, quick, informal assessments that let me know that, yes, they did grasp the concept, they do have it, they can recall it from yesterday. They don't get a grade at the end of it because I don't want it to be threatening to them. It's something that I want them to enjoy. I want them to feel like they can ask any type of questions and not feel belittled by anybody in the class.

Our goal was to get 100 percent of the students who participated in the Algebra Prep course to get a grade of C or higher in Algebra Honors I, and we were successful. And we've had 85 percent of the students earn a final grade of B or higher. We had no student at any time transfer out of Algebra I and move down to Math 8. Our algebra teachers have said that the students are so much better prepared, not only in math, but also in just the work habits and the expectations of what algebra is going to be. We're actually going to extend the Algebra Boot Camp into the school year. It's not mandatory; it's optional. But we felt that we wanted to do something for our students who were probably needing a little more enrichment than they are getting at this time in their Math 7 course and help them build that confidence, help them build that mathematical reasoning, and be able to compete with the Honors Math students who will also be in that Honors Algebra class.