

Increasing Math Achievement at Lee County Middle School with *Common Core Coach*

Lee County Middle School in rural Kentucky wanted to reduce the percentage of students performing at the lowest of Kentucky's four achievement levels (Novice) on K-PREP, its state-wide test. The use of [Common Core Coach Mathematics](#) with Lee County Middle School 6th, 7th and 8th grade students contributed to a significant increase in math achievement. Between 2011-2012 and 2012-2013, the percentage of students in the lowest achievement level (Novice) dropped by 13% in 6th, 25% in 7th grade and 16% in 8th grade. In the 7th and 8th grades, there was also a significant increase in the top two achievement levels, going from 18% to 44% and 26% to 43% respectively.

School Profile

Lee County Middle School, Eastern Kentucky
Metro Status: Rural
Grades: 6, 7, 8
Enrollment: 250
Title 1: 79%

The Challenge

Lee County Middle School math teachers wanted to increase their math proficiency scores on the end-of-grade *Kentucky Performance Rating for Education Progress or K-PREP*, where the percentage of students at the Novice level (the lowest of Kentucky's four achievement levels) was approximately 30% for grades 6 and 8, and 45% for grade 7. Faced with the more rigorous standards of the Common Core, teachers also felt the need to provide students additional practice with higher-level math questions of the types required by the CCSS. In addition, there was a need for another diagnostic, intervention, and instructional resource to help students overcome misconceptions and/or skill weaknesses revealed in the

ThinkLink predictive assessments that were administered three times during the school year.

Overview

There is only one math teacher per grade level at Lee County Middle School, which is part of a small, rural district in Kentucky.

Common Core Coach was used primarily as a resource for review and assessment of key concepts, as well as to help students practice the kind of higher level thinking questions they face on state *K-PREP* tests. One teacher reported that she also used *Coach* with her Response to Intervention (RtI) students every Friday because the step-by-step approach in *Coach* allowed her to identify the exact point at which each student got confused—something that she could not accomplish with the core math textbook. She also was able to select from multiple grade levels of *Coach* to find exactly what each student needed. Another teacher valued *Coach* for its specific explanations and examples of Common Core Standards.

“Students have a general weakness in applying knowledge to new problems. We’ll go through a *Coach* lesson, short answer, long answer, multiple choice—whatever’s in the lesson,” said Amber Stacy, 7th grade math teacher. “More often, [typically] on a weekly basis, I include *Coach* questions in their homework and weekly quizzes. Once we do that, they have better success with the questions.”

Keys to Success

Common Core Coach provided these middle school teachers with an effective supplemental resource that helped their students practice the application of new math knowledge in a format consistent with what they would find on their end-of-grade *K-PREP* exam. The teachers appreciated the organization and accessibility of the *Coach* content, as well as the additional instruction and practice it provided their students while mastering Common Core standards.

“Both the Common Core Standards and the new questions are more rigorous. They involve a higher level of thinking. I would say to any math teacher that it is a benefit to pull *Coach* questions into their lessons regularly to give the kids different kinds of practice,” said Amber Stacy.

These math teachers used *Coach* content in a variety of ways: as bell ringer assessment activities (posted problems to be completed as soon as students entered the classroom and immediately checked by the teacher for understanding); independent practice; exit slips (quick assessments to see if students understood the day’s lesson); homework; and quizzes. Often teachers allowed students to work in pairs for peer-to-peer instruction, or selected material to be used with Rtl students who were struggling.

Teachers frequently pulled questions and problems from the *Coach* books to give their students additional opportunities to apply their knowledge. When students had difficulty mastering concepts from their core math textbook, the teachers often used full lessons from *Coach* either weekly or every other week to ensure that their students understood the concepts on which they would be tested.

8th grade math teacher Serita McCoy reported, “*Coach* is a good resource to help my students better understand higher order questions and the appropriate way to explain their work... that there is not just one answer, but multiple ways to get the answer.”

Overall Results

The addition of *Common Core Coach* to the math program at Lee County Middle School contributed to a dramatic increase in year-over-year math scores in grades 6, 7 and 8 at the end of the 2012-2013 school year.

Each of the three middle school math teachers saw double-digit improvements in student achievement with *Coach* as

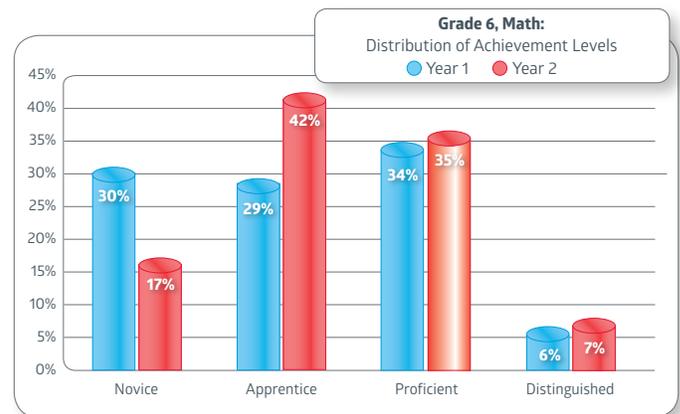
part of the math curriculum mix. “When our assessments reveal non-understanding, we use *Coach* and it helps increase understanding,” said Ashley Brooks, 6th grade teacher. “I do know my test scores went up. I notice that if I focus on a certain topic like equations and I use *Coach* for Rtl with students who are struggling on that topic, I see improvement in their *ThinkLink* interim tests, which we give three times a year. So I’ve seen growth that way.”

Year-over-year test data reveals specific achievement growth by grade level.

Results

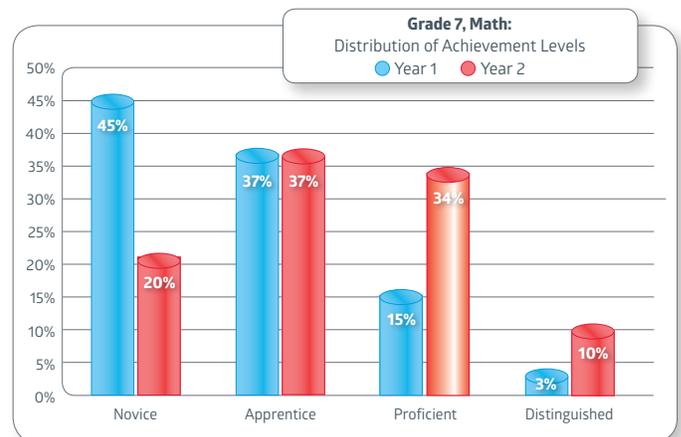
The use of *Coach* in 6th, 7th and 8th grades from 2011-12 to 2012-13 resulted in a decline of the number of students in the Novice or lowest category.

At the 6th grade level, this decline was 13% which was coupled with a double-digit increase (12.5%) in the number of students who scored in the Apprentice category.



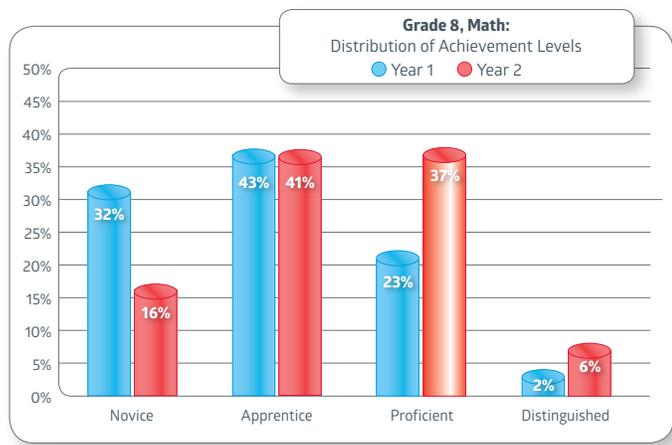
Source: KY Department of Education/SRC/Data Set

The results from 7th grade were remarkable. There was a dramatic 25% decline in the Novice category year-over-year, which was paired with an 18.4% increase in the Proficient category and a 6.9% increase in the Distinguished category.



Source: KY Department of Education/SRC/Data Set

Similar results can be seen in the 8th grade year-over-year test data: a decrease of 16% with a corresponding increase in the Proficient and Distinguished categories combined.



Source: KY Department of Education/SRC/Data Set

Conclusion

Common Core Coach established itself as a trusted addition to the math program at Lee County Middle School. Its alignment to specific Common Core Standards made it a valuable resource for both teachers and students. Teachers often used *Coach* questions as a model for the variety and complexity of questions that reflect the rigor of the Common Core, and to help students learn how to respond to both short answer and extended response questions.

Teachers also turned to *Coach* as a primary review and assessment tool. When difficulties were uncovered, teachers used *Coach* to instruct their students through step-by-step lessons, which provided additional practice to help them achieve proficiency. When asked what they would tell other teachers who might be interested in *Common Core Coach*, these middle school teachers highlighted *Coach's* alignment to the Common Core Standards and the increased rigor of the questions, as well as *Coach's* step-by-step process, which allowed them to determine exactly where students struggled for understanding.

“I like *Coach's* alignment to the Common Core. There is a lot of variety in the question types, and they help me form better questions of my own that emphasize higher order thinking skills. I pull questions from *Coach* almost daily,” reported Serita McCoy.

“*Coach* is really good about specifically pinpointing what students are missing. A child could be struggling with expressions, but *Coach* breaks it apart into so many different steps that you can really pinpoint what the struggle is. You are more likely to master whatever has caused the student to be confused,” said Ashley Brooks.