

# Cross-Departmental Partnerships to Enhance Mathematical Learning for English Learners

by Jessica Kent—Math Specialist, Alabama Math, Science, and Technology Initiative

Promising practices...

In education, we often stay within our lanes. Elementary teachers attend elementary trainings, special education teachers attend special education trainings, and English language teachers attend professional development tailored to their roles. As a Math Specialist with the Alabama Math, Science, and Technology Initiative (AMSTI), it's rare for professionals outside the math and science world to join our training sessions. So when Alabama's English Learner Education Department offered the opportunity to attend the Achievement Inspired Mathematics for Scaffolding Student Success (AIM4S<sup>3</sup>) training in the fall of 2024, I was excited to step outside my usual focus and bridge the gap between math instruction and support for English learners (ELs).

From the beginning of the AIM4S<sup>3</sup> training, I was struck by how well it aligned with AMSTI's approach. The Alabama Math, Science, and Technology Initiative (AMSTI) takes a hands-on, inquiry-based approach to teaching math and science in Alabama schools. AMSTI focuses on providing professional development for teachers, equipping them with materials and resources, and fostering a classroom environment where students learn by doing, connecting concepts to real-world applications. This wasn't simply a training focused on ELs—it was deeply rooted in strong math instruction and best practices for supporting all learners. The presenters were not only knowledgeable about language acquisition but also demonstrated a strong foundation in mathematics, which made the learning especially meaningful for someone in my role.

Each day included practical homework that allowed me to immediately apply what I was learning in the schools I support. As a math specialist, I work directly with math coaches across multiple districts in Alabama. This training empowered me to support those coaches more effectively by modeling strategies that make math instruction more inclusive for EL students.



Jessica Kent and colleague Robin Stutts present a Compendium to a group of newcomer students from diverse linguistic backgrounds.

One of the most impactful takeaways from the training was the importance of including EL students in every aspect of a math lesson. As a former classroom teacher, I now realize how often I unintentionally allowed EL students to remain passive participants in discussions. With the guidance of my regional EL specialist, Robin Stutts—with whom I attended AIM4S<sup>3</sup> training—I learned practical strategies for

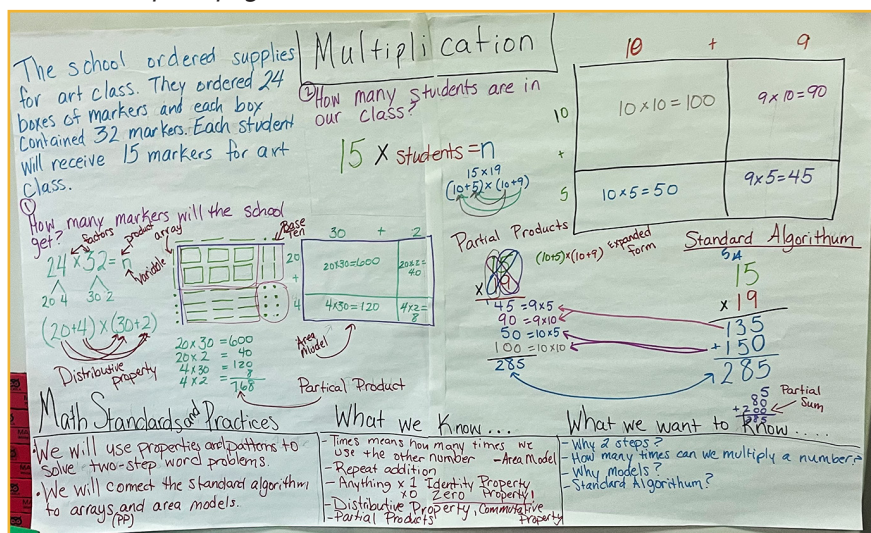
engaging EL students in Number Talks in ways that made them feel confident and valued. With Robin's help, I facilitated Number Talks in multiple classrooms. During these Number Talks, I was able to include EL learners by allowing them to answer in their native language, use hand signals that allowed everyone to participate, and help build motivation in students through perseverance. Robin also joined me in classrooms, providing additional support and insight in how to group students with peers and incorporate scaffolding strategies such as sentence frames.

One especially powerful tool we explored during the training was the use of Compendiums—what I like to call “anchor charts on steroids.” This tool became central to several coaching cycles I led during the 2024–2025 school year. Compendiums,

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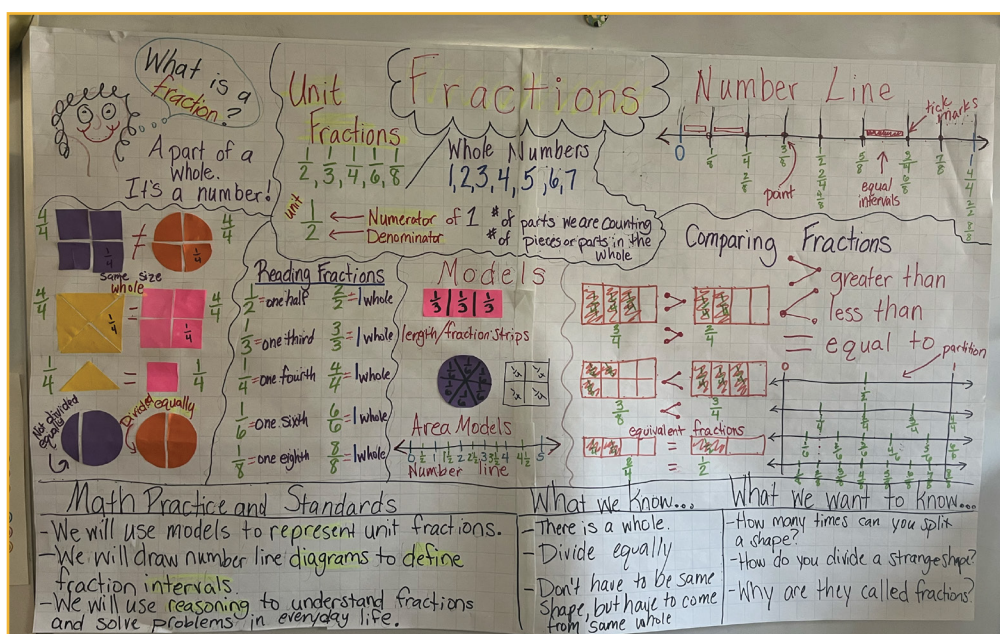
a component of the AIM4S<sup>3</sup> Math Framework, helped introduce concepts, track ongoing learning, and encourage reflection. A Compendium consists of three parts: student-friendly goals tied to state math practices or process goals, an inquiry chart highlighting student voices, and a concept frame. The concept frame is a visual representation of key information in the unit/math domain that the students are studying. This chart is carefully planned by the teacher ahead of time and then delivered in front of students throughout the unit. I observed both EL and general education students referring to the Compendiums regularly, using them to make sense of new ideas and monitor their own growth. Students were always eager to contribute, often excited by the chance to add something they had discovered in math class themselves.

A fifth-grade Compendium, in particular, stood out for its role in helping students grasp the standard algorithm for multiplication. It not only supported content understanding but also gave students a sense of ownership in their learning. During a coaching cycle focused on multi-digit multiplication, students used

the Compendium to explore partial products and the area model. Their understanding was visibly enhanced through consistent engagement with these visual representations. Once we introduced the standard algorithm to the Compendium, I found that little to no direct instruction was necessary. The fifth-grade students were able to collaboratively analyze and make sense of the mathematical concepts presented, engaging in meaningful discussion without my prompting. This level of student autonomy and peer-led learning was a powerful indicator of success. By the end of the cycle, the math coach and I observed an

80% proficiency gain among the students.

In another coaching cycle, I partnered with a third-grade teacher to focus on fractions. Recognizing that much of the fractional vocabulary was unfamiliar to the students, we made academic language development a central goal. We highlighted key terms within the Compendium and revisited them frequently during instruction. Though the Compendium became visually dense, it served as a living document of learning. By the end of the cycle, students were able to work flexibly with fractions



*The focus of this third-grade Compendium on fractions was on key terms related to the concepts taught.*

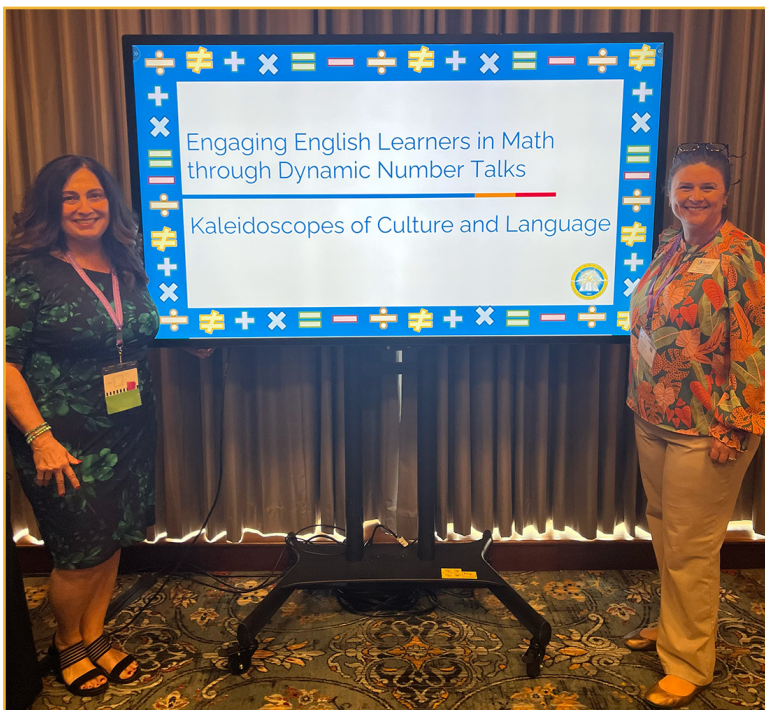
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and confidently use academic vocabulary when communicating their thinking to peers.

Together with Robin Stutts, I worked with a group of newcomer students in Grades 1 through 4. These students came from diverse linguistic backgrounds and had limited English proficiency. We decided that starting with a counting-focused Compendium would best support their learning. Given the wide range of ages and developmental levels, we emphasized language acquisition through mathematics. As a general education teacher, I quickly drew upon strategies and resources from my AIM4S<sup>3™</sup> training to meet the varied needs of the group. We integrated visual supports, consistent

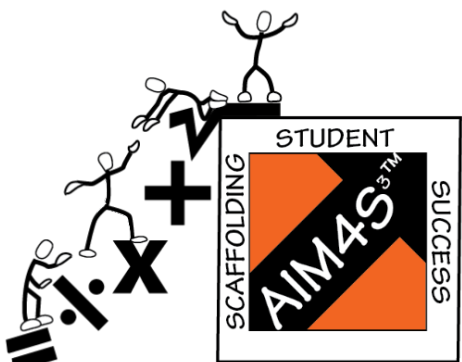
routes, and multimodal instruction to make mathematical language and concepts accessible. This experience reinforced the value of targeted math language instruction for multilingual learners.



*Robin and Jessica shared the impact their learning from AIM4S<sup>3™</sup> and the collaboration across departments had on their state.*

Robin Stutts and I were also able to present together at the Alabama Mississippi Teachers of English to Speakers of Other Languages (AMTESOL) conference in 2025. We shared with others the impact our learning from AIM4S<sup>3™</sup> and the collaboration across departments had on our schools and state. This experience reminded me that unification across disciplines in education is essential.

AIM4S<sup>3™</sup> opened new doors for me as a math specialist, and ultimately, for the students and educators I serve.



**Achievement Inspired Mathematics  
for Scaffolding Student Success**

### About AIM4S<sup>3™</sup> Math Framework

AIM4S<sup>3™</sup> provides a framework of instructional components that shelters mathematics content to make it comprehensible and accessible to all students, with a focus on English learners (ELs) and students who struggle with math. AIM4S<sup>3™</sup> can be utilized with any mathematics program and targets teachers in kindergarten through middle school (<https://dlenm.org/aim4s3-math-framework/>).

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