

**STUDENT ENGAGEMENT**

## **Creating a Community of Math Leaders in High School**

When teachers utilize four Cs—check-ins, collaboration, connections, and communication—students gain confidence.

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A classroom is a small community where students come together to learn, grow, and prepare themselves for the future. What do you see in your math classroom? In my classroom, I see engagement in problem-solving, pattern

recognition in making connections, and students having fun learning math. Creating a culture that follows the four Cs—check-ins, collaboration, connections, and communication—in my math classroom helps my students appreciate being problem solvers and math leaders.

Getting students started with exploring a concept using check-ins and enabling teamwork eases them into learning with less anxiety. Developing creative and critical minds is essential for students to become successful leaders.

Making connections and finding multiple ways to solve a problem through reflection and feedback help my students know that there is no one way to solve a problem. This culture of effective communication through reflection and constructive feedback lays the foundation of trust, deepening the learning experiences and building a stronger community.





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## USING THE 4 CS TO BUILD MATH LEADERS

1. Check-ins. Students use a check-in activity to help them comprehend what they know to bridge their understanding to what they need to know. I use a simple graphic organizer such as an emotion check to understand how my students are feeling and a KWL chart, which sorts what a student knows, wants to know, and has learned about a topic, to help build clarity about the learning process.

Check-ins can also look like starting class with a question and *encouraging more productive questions* (</article/teaching-students-how-ask-productive-questions>) to understand what the students currently know and understand and what they're struggling with in order to diversify instruction. Through the check-ins, I instill a culture of curiosity and a safe place to encourage my young students to begin their learning journey.

2. Collaboration. Working in teams can enhance student learning and lead to better focus and engagement. Collaboration can occur through peer-to-peer coaching, cooperative learning activities, or working on group projects to enable problem-solving and develop a deeper understanding.

I use strategies such as think-pair-share, which encourages students to think first, then pair up, and share their steps. Sometimes my students are surprised to find out that there are multiple ways to solve a given problem.

I enjoy the discussions in my class and encourage my students to work together to have debates on the real-world applications of math. (This article shares some *great strategies to get students talking in math class* (</article/3-strategies-get-students-talking-math-classrooms>).) Debate may seem out of place in a math class, but it encourages my students to think outside the box.

For example, while working on my class's concept of interest, I organized a debate between groups to talk about simple interest versus compound interest. Then, we discussed which one they should choose if they were a borrower versus a lender. It generated an engaging conversation on loans, banking, finance, and more.

3. Connections. There are different ways to make connections to learning, which can build a critical and creative mindset. Students can connect with prior knowledge to bridge a new conceptual understanding that increases engagement in education and helps students relate to the content.

I encourage students to connect the concept taught to real-life scenarios. The word *algebra* always creates anxiety in my students. Connecting algebra to real life makes the unknown known. For example, connecting linear equations to shopping is something that most of my students enjoy. On top of everything, when they connect a problem such as “If one shirt costs \$7, then how much will three shirts cost?” they realize that they have been finding the unknown all their lives.

Helping my students connect with the math concepts taught in class makes *math learning relevant* ([/article/how-make-math-concepts-feel-relevant-students](#)), and they start leading the way in solving problems.

4. Communication. Communication is vital in a math classroom. Students can communicate during discussions through questioning, working on collaborative projects, sharing problem-solving strategies, and, most notably, reflecting on “What and how did I learn today?”

Discussing a concept helps students develop a deeper understanding, and using questions such as *why* and *how* allows my students to explore through different perspectives. It’s vital, for me as an educator, to understand *how to generate effective questions* ([/blog/new-classroom-questioning-techniques-todd-finley](#)) to help my students learn and work together. I design several group projects to connect math to real life where my students work together to reveal the solution to the given problem.

For example, we would work on a project to bring out the entrepreneurs in us and design our futures by looking at investments, profits, and loans to learn about percentages, decimals, and interest. Some wanted to open a restaurant or manage a car showroom, while a few wanted to open their own bakery. This project ended with group presentations graded on a rubric based on effective communication.

Self-reflection is an excellent approach to communicating to yourself what you’ve learned, what you still need to work on, and what’s the best way for you to learn effectively. I also use journaling with *PEMS*

([https://www.heartfulnessinstitute.org/\\_files/ugd/d7a5fa\\_4e3ec122f7c5400b9da81c84a31d77f3.pdf](https://www.heartfulnessinstitute.org/_files/ugd/d7a5fa_4e3ec122f7c5400b9da81c84a31d77f3.pdf)), a tool that facilitates observation, to

support my students' emotional awareness.

Reflection through feedback and hours of contemplation can help a student know that there is no one way to solve a problem and thus help build a growth mindset. Using *a simple framework* (</article/frameworks-reflection>) can help boost this moment to think back and gear up for what's to come.

The four Cs can help develop skills that our youth need to learn effectively and to feel confident in leading their learning.

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