

Math Practice #3: Construct viable arguments and critique the reasoning of others

We explain and defend answers using good mathematical thinking. We listen carefully and ask good questions in order to understand the thoughts of others. We work hard to understand correct answers and to find mistakes.



WHY THIS IS IMPORTANT

Communication is critical for success in jobs and relationships. Being a good communicator in life means:

- *explaining your thoughts in a way that someone else can understand*
- *defending your ideas with logic and evidence*
- *listening carefully in order to understand someone else's thoughts*
- *asking good questions*
- *recognizing when you or someone else makes a mistake*

WHAT TO EXPECT IN MATH CLASS

Having to think through a problem instead of being told what to do.

Discussing problems and working through problems with classmates.

Being asked to explain your thinking and to understand the thinking of classmates.

The question, "Why?"

HOW TO SUPPORT

"Why is that calculation a good idea for this problem?"

"Can you show or explain that in another way?"

"What mistakes do you think some students might make when they are solving this problem?"

"I'm going to make a mistake when I solve this problem. Find my mistake, then turn to your neighbor and explain what I did wrong."

"What other methods might your classmates use to solve this problem?"

"Are there other answers that could also be correct?"

"Trade your work with someone else's. Then, explain how the OTHER person solved the problem."

WHAT TO DO IN MATH CLASS

- *Ask yourself, "Why?"*
- *Ask your classmates, "Why?"*
- *Explain your thoughts and reasons to your classmates.*
- *Use evidence from the problem to defend why your answer is correct.*
- *Listen carefully to the thoughts and reasons of your classmates.*
- *Ask questions whenever you don't understand.*
- *Help classmates understand when they've made a mistake.*
- *Listen carefully as classmates explain when you've made a mistake.*