

Math Practice #2: Reason abstractly and quantitatively

WHY THIS IS IMPORTANT

Making sense of numbers and calculations is an important part of daily life. Whether making budgets, planning schedules, or working on a project, reasoning with numbers in life means:

- *Estimating to get approximate answers*
- *Calculating to get exact answers*
- *Asking if answers make sense for the situation*
- *Finding different ways to think about a situation in order to solve a problem*

WHAT TO EXPECT IN MATH CLASS

Being asked to think about and solve problems in multiple ways.

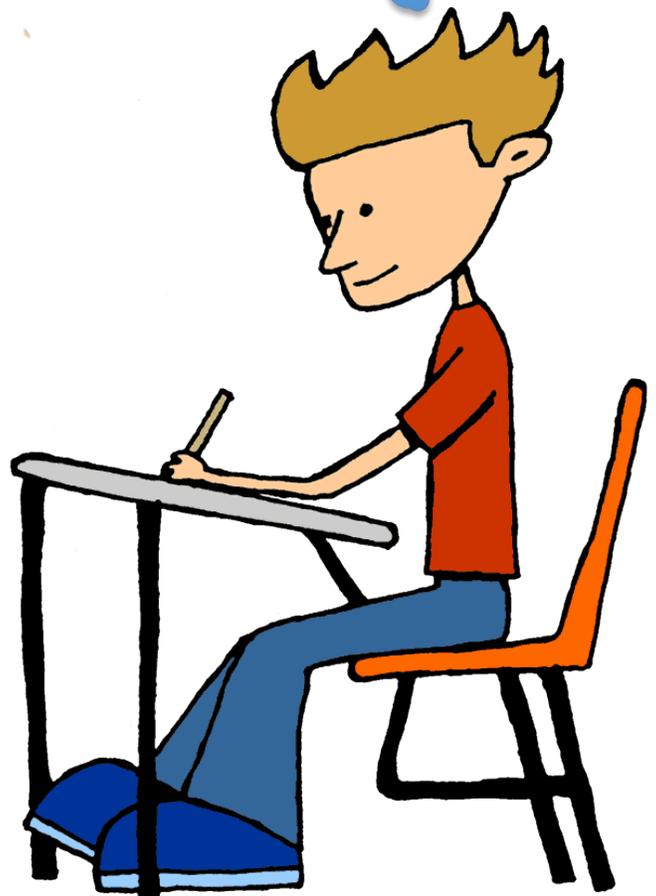
Lots of opportunities to practice calculations in order to get better and faster.

Needing to describe meanings of numbers and relationships between numbers, not just perform calculations.

WHAT TO DO IN MATH CLASS

- *Practice, practice, practice in order to become fluent and efficient with calculations*
- *Think about the **meanings** of numbers and calculations*
- *Think about how the numbers in problems are related to each other*
- *Find ways to break problems down into smaller steps and calculations*
- *Use mathematical words and symbols to describe calculations*
- *Continually ask if numbers and calculations make sense*
- *Be creative – brainstorm other ways to work through problems*

I think about numbers in many ways. I understand what numbers mean and work with numbers efficiently and strategically. I can use words, symbols, and drawings to explain my calculations.



HOW TO SUPPORT

“What do you know (or can guess) about the answer before you even start?”

“What is the meaning of these numbers in the problem?”

“Are there any steps that might help you get started or might make the problem simpler?”

“What does that calculation mean for the problem?”

“Explain your steps. Why do those steps make sense?”

“Does your answer make sense? Why or why not?”