Helping our children with math!

Under ***Common Core State Standards***, our students are expected to know much more than just the right answer. **What does it mean to be mathematically proficient?** Being mathematically proficient means to know **when**, why, and **how** to apply calculations to different mathematical situations.

Common Core Mathematical Practice Standard 5:

Use appropriate tools strategically.

What It Means:

'Tools' is a general term that refers to any type of **support** that students may use to perform a mathematical task. Tools may include measuring instruments such as rulers, yardsticks, protractors, balance scales, and linking cubes. Tools can ***also*** refer to computational aids such as paper and pencil, number lines, calculators or mental math. **Often, more than one tool can be used to help solve a problem**. However, it is very important students recognize the advantages and limitations of the available tools and select ones that are efficient and best meet the needs of a given task or problem . Although picking the most proficient tool is important, students must also understand how use it accurately. Otherwise the tool will not be beneficial to the student. For example, a calculator can only be helpful if you know how to use it!

Example:

Students are asked to solve the problem 3.15 x 76.32. The students choose to use a calculator to help solve the problem since the calculation can be tedious.

> Student A: Let's see, 3 x 75 is about 225 so my actual answer should be a little more than 225. Using the calculator, I got 240.408 for my solution. Since this is a little more than 225, I believe my answer makes sense and is reasonable.
>
> Student B: 24.0408 isn't even close. I estimated my answer to be about 225. Wait, what just happened? I need to recheck my solution.

Tools that are chosen, must be used effectively, otherwise they are not helpful in solving problems.

Information taken from: *Putting the Practices into Action: Implementing the Common Core Standards for Mathematical Practice K-8* by Susan O'Connell and John SanGiovanni

How to Help Your Child Become Successful with This Standard

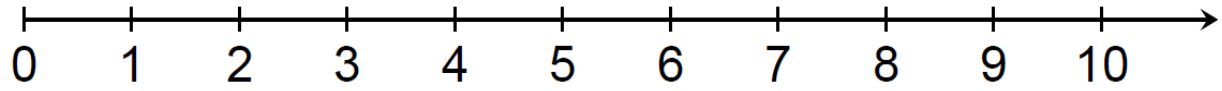
It is important for students to be exposed to a variety of tools. They also need to be explicitly taught how to accurately use the different tools. ***Discuss the advantages and limitations of specific tools. This will help students strategically pick the most appropriate tool for a given situation or problem and be able to readily justify their choices***.

Example: Ask your child to pick a tool to use to measure the length of their bedroom. Then ask him/her to explain why he/she chose this tool. Are there other tools he/she could have used? Encourage your child to justify his/her choice with support and details.

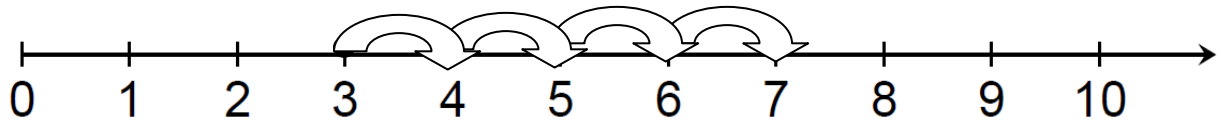
Number lines are useful tools for counting, computation and estimation. They provide a visual representation that allows students to see numbers in a sequence. They can be used to help students determine the value of numbers, make number comparisons and perform computation.

- Primary Grade Usage- Use number lines to help your child determine the next number when counting, to compare two numbers, or to help with adding and subtracting.

  Examples: **What number comes after 9? Which number is greater, 5 or 9?**

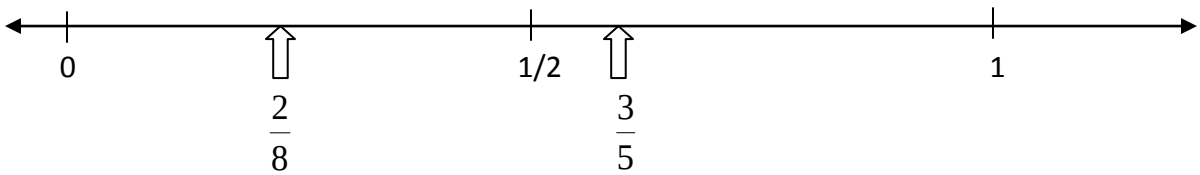


3 + 4 = ?



- Intermediate Grade Usage- With the help of a fraction number line, students can compare two fractions without having to find a common denominator by considering how close the given fractions are to the benchmarks 0, ½, or 1.

  Example: **Which is greater,** $\frac{3}{5}$ **or** $\frac{2}{8}$ **?**



Since $\frac{3}{5}$ is greater than one-half, and $\frac{2}{8}$ is less than one-half, $\frac{3}{5} > \frac{2}{8}$.

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