Standards for Mathematical Practice

and Excel Math Grade 1

The Common Core State Standards for Mathematical Practice are integrated into Excel Math lessons. Below are some examples of how to include these Practices into the tasks and activities your students will complete throughout the year.

Mathematical Practices

1. Make sense and persevere in solving problems. Mathematically proficient students become aware of what they know and how they solve problems and tasks, can make sense of the meaning of the task and find an entry point or a way to start the task. First Grade students are willing to try other approaches when solving the task. In First Grade, students' work continues to use concrete manipulatives and pictorial representations to solve a problem. They eventually become fluent with mental mathematics. They ask themselves, "Does this make sense?"
2. Reason abstractly and quantitatively. Mathematically proficient students recognize that a number represents a specific quantity. They use numbers and symbols to represent a problem, explain thinking and justify a response. When solving addition word problems first grade students may use a making ten strategy, counting-on, or doubles +/- 1 or 2 strategy to find the solution.
3. Construct viable arguments and critique the reasoning of others. In First Grade, mathematically proficient students continue to develop their ability to clearly express, explain, organize and consolidate their math thinking both verbally and in writing. Their understanding of First Grade vocabulary helps them to construct viable arguments about mathematics. Mathematically proficient students are willing and eager to share their ideas with others, consider other ideas proposed by classmates and question those ideas that don't make sense.
4. Model with mathematics. Mathematically proficient students model real-life mathematical situations with a number sentence or an equation, and check to make sure that their equation accurately matches the problem context. They use concrete manipulatives and pictorial representations to provide further explanation of the equation. Students also use tools such as tables to help collect information, analyze results, make conclusions, and review their conclusions to see if the results make sense, revising their conclusions as needed.
5. Use appropriate tools strategically. In First Grade, mathematically proficient students have access to a variety of concrete tools (clock patterns, spinner wheels, ten frames, exchange boards, number lines, rulers) and technological tools such as virtual manipulatives, calculators, Timed Basic Fact Practice, etc. They recognize that multiple tools can be used for the same problem. For example, a student who is in the counting stage may choose ones or tens pieces to solve a problem, while a student who understands parts of numbers may solve the same problem using ten frames to decompose numbers instead of using individual pieces.
6. Attend to precision. Mathematically proficient students communicate clearly, using grade-level appropriate vocabulary accurately as well as giving more precise explanations and reasoning regarding their process of finding solutions. While measuring an object, students make sure there are no gaps or overlaps as they place each unit end to end to measure the object precisely.
7. Look for and make use of structure. In First Grade, mathematically proficient students carefully look for patterns and structures in the number system and other areas of mathematics. For example, when decomposing two-digit numbers, students realize that the number of tens they have constructed is the same as the digit in the tens place.
8. Look for and express regularity in repeated reasoning. Mathematically proficient students begin to look for regularity in problem structures when solving mathematical tasks. For example, when adding three one-digit numbers by making tens or using doubles, students begin future tasks by looking for ways to use those same strategies. When solving 6 + 7 + 4, a student may think, "I know that 6 and 4 equal 10, and then I add 7 more. That makes 17."