Standards for Mathematical Practice

and Excel Math Kindergarten

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 of problems and persevere in solving them. Mathematically proficient Kindergarten students begin to develop problem solving skills by learning to focus attention, test hypotheses, take reasonable risks, remain flexible, try alternatives, self regulate, and persevere. They begin to explain the meaning of a problem, look for ways to solve it, and determine if their thinking makes sense or if another strategy is needed. The teacher uses thoughtful questioning and gives opportunities for students to share their thinking.
2. Reason abstractly and quantitatively. Mathematically proficient students begin to use numerals to represent a specific amount or quantity. A student may write the numeral "10" to represent an amount of objects counted, build a pile of counters of that amount or select the correct number card "17" to follow "16" on the calendar. Students begin to draw pictures, manipulate objects and use diagrams or charts to express quantitative ideas. Through joining and separating activities, students begin to understand how symbols (+, - and =) are used to represent quantitative ideas in writing.
3. Construct viable arguments and critique the reasoning of others. In Kindergarten, mathematically proficient students begin to express, explain, organize and consolidate their thinking using verbal and written representations. Through exploration, discovery, and discussion, kindergarten students begin to learn how to express opinions, actively listen to others, describe their reasoning and respond to others' reasoning. They begin to develop the ability to reason and analyze situations. Students ask questions such as, "Are you sure…?" , "Do you think that would happen all the time…?", and "I wonder why…?"
4. Model with mathematics. In Kindergarten, students begin to experiment with representing real-life problems in multiple ways such as with numbers, mathematical words, drawings, objects, acting out, charts, lists, and number sentences. For example, when using counters to show various combinations of the number "5," the student writes the numerals for the various parts (such as "4" and "1") or chooses a number sentence to represent it (5 = 4 + 1).
5. Use appropriate tools strategically. Mathematically proficient students explore various tools and use them when solving a problem. They use concrete materials (cubes, ten frames, counters) and technological materials (virtual manipulatives, calculators, interactive websites) to explore concepts. They learn to decide which tools would be most helpful depending on the task.
6. Attend to precision. Kindergarten students begin to express their ideas and reasoning using words. Students begin to describe their actions and strategies more clearly, use vocabulary accurately, and begin to give precise explanations and reasoning regarding their process for finding solutions (such as using color words and descriptive words to describe a set of buttons.
7. Look for and make use of structure. Mathematically proficient students begin to look for patterns and structure in the number system and other areas of mathematics. For example, when looking for circles around the room, kindergarteners begin to notice that some circles are larger than others or come in different colors even though they are all circles.
8. Look for and express regularity in repeated reasoning. Mathematically proficient students begin to notice repetitive actions in geometry, counting, comparing, etc. When counting out loud to 100, they may recognize the pattern 1-9 being repeated for each decade.