

Standards for Mathematical Practice

and Excel Math Grade 3

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 students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. They consider analogous problems. Students use concrete objects or pictures to help them conceptualize and solve problems. They check their answers and ask, "Does this make sense?" Students listen to the strategies of others and use various problem-solving methods.

2. Reason abstractly and quantitatively. Mathematically proficient students recognize that a number represents a specific quantity. They connect the quantity to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities, not just how to compute them.

3. Construct viable arguments and critique the reasoning of others. In third grade, mathematically proficient students construct arguments using concrete references such as objects, pictures, and drawings. They justify their conclusions as they participate in discussions that the teacher facilitates by asking questions such as "How did you get that?" and "Why is that true?" They explain their thinking, construct arguments and respond to others' thinking.

4. Model with mathematics. Mathematically proficient students represent problem situations in multiple ways including numbers, mathematical words, drawing pictures, using objects, acting out, making a chart (or list or graph), creating equations, etc. Students require many opportunities to generate various mathematical representations and to solve equations and story problems, and explain connections between representations as well as between representations and equations. Students evaluate the results in the context of the situation and ask whether the results make sense.

5. Use appropriate tools strategically. In third grade, mathematically proficient students consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use graph paper to find all the possible rectangles that have a given perimeter. They compile the possibilities into an organized list or a table, and determine whether they have all the possible rectangles.

6. Attend to precision. Mathematically proficient students develop their mathematical communication skills and try to use clear and precise language in their discussions with others and in their own reasoning. They are careful to specify units of measure and state the meaning of the symbols they choose. For instance, when giving the area of a rectangle, they answer in square units.

7. Look for and make use of structure. In third grade, mathematically proficient students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to multiply and divide (commutative and distributive properties).

8. Look for and express regularity in repeated reasoning. Mathematically proficient students notice repetitive actions in computation and look for shortcut methods. Students use the distributive property as a strategy for using products they know to solve products they don't know. For example, if students are asked to find the product of 7×8 , they might decompose 7 into 5 and 2 and then multiply 5×8 and 2×8 to arrive at $40 + 16$ or 56. They ask, "Does this make sense?"