

Excel Math Fourth Grade

Standards for Mathematical Practice

The Common Core State Standards for Mathematical Practice are integrated into Excel Math lessons. Below are some examples of how we 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 thinking by asking, "Does this make sense?" Students listen to the strategies of others and try various approaches. They may use another method to check their answers.

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, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to fractions and decimals.

3. Construct viable arguments and critique the reasoning of others. Mathematically proficient students construct arguments using concrete references such as objects, pictures, and drawings. They explain their thinking and make connections between models and equations. They justify their conclusions in discussions and ask 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 need opportunities to connect various mathematical representations and explain the connections. Students should evaluate their results in the context of the situation and decide whether the results make sense.

5. Use appropriate tools strategically. In fourth grade, mathematically proficient students consider the available tools (including estimation) when solving a problem and decide which tools might be helpful. They use graph paper or a number line to represent and compare decimals and use protractors to measure angles. They use other measurement tools to find the relative size of units within a system and express measurements given in larger units in terms of smaller units.

6. Attend to precision. As fourth grade students develop their mathematical communication skills, they 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 example, they use appropriate labels when creating a number line or a line plot.

7. Look for and make use of structure. Mathematically proficient students look closely to discover a pattern or structure. For example, they use properties of operations to explain calculations (partial products model). They use visual representations of fractions such as models and number lines to generate equivalent fractions. They generate number patterns that follow a given rule.

8. Look for and express regularity in repeated reasoning. Mathematically proficient students notice repetitive actions in computation to make generalizations. Students use models to explain calculations and understand how algorithms work. They also use models to examine patterns and generate their own algorithms. They ask, "Does this make sense?"