

Standards for Mathematical Practice Brief Form

Students using these practices understand and apply mathematics with confidence. Therefore, the mathematical practices describe behaviors that we want all students to develop.

1 Make sense of problems and persevere in solving them.

► Find meaning in problems, ► Analyze, predict and plan solution pathways, ► Verify answers, ► Continually ask themselves: “Does this make sense?”

2 Reason abstractly and quantitatively.

► Make sense of quantities and their relationships, ► Use two complementary abilities: *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols, and *contextualize*—to pause during the manipulation process to consider the referents for the symbols involved, ► Create coherent representations.

3 Construct viable arguments and critique the reasoning of others.

► Understand and use information to construct arguments, ► Make and explore the truth of conjectures, ► Justify conclusions and respond to arguments of others.

4 Model with mathematics.

► Apply mathematics to problems in everyday life, society, and the workplace, ► Identify quantities in a practical situation, ► Interpret results in the context of the situation and reflect on whether the results make sense.

5 Use appropriate tools strategically.

► Consider the available tools when solving problems, including mental math, pencil and paper, concrete models, protractor, calculators, and other technological tools.

6 Attend to precision.

► Communicate precisely to others, ► Use clear definitions, ► State the meaning of symbols, and specify units, ► Label axes, ► Calculate accurately and efficiently.

7 Look for and make use of structure.

► Discern patterns and structures, ► Can step back for an overview and shift perspective, ► See complicated things as single objects or as being composed of several objects.

8 Look for and express regularity in repeated reasoning.

► When calculations are repeated, look for general methods, patterns and shortcuts, ► Maintain oversight of the process, while attending to the details, ► Evaluate whether intermediate results and answers makes sense.

The full version Mathematical Practices is on pages 6-8 of the Common Core State Standards for Mathematics. Available for download at: www.corestandards.org/

By Jim Olsen

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