

Standards for Mathematical Practice

Ask these standards-based questions to support students in cultivating the habits of mind and interactions that form the basis of math learning:

SMP 1: Make sense of problems and persevere in solving them.

1. Describe the problem in your own words.
2. What is the problem asking? What information can you use to solve the problem?
3. How can you begin solving the problem?
4. Show me the steps you have used to get to this point.
5. What can you do if you are stuck? What is another strategy or tool you can use if you are stuck?
6. What other strategies can you use to organize, represent, or show?

SMP 2: Reason abstractly and quantitatively.

1. How would you represent this problem?
2. What does ___ mean to you? (e.g., quantity, math term, symbol)
3. Explain/show in your own words or representations how ___ is related to ____.
4. How can you connect the problem to math that you already know?
5. What do you anticipate the solution to be? How do you know?

SMP 3: Construct viable arguments and critique the reasoning of others.

1. What words, representations, drawings, equations, or other tools can you use to explain your thinking?
2. How can listening to others help inform your own mathematical thinking or arguments?
3. Explain/show ___ and how you decided to try that strategy.
4. What connections do you see between your thinking and that of your classmates?
5. What questions can you ask to help others explain their thinking?

SMP 4: Model with mathematics.

1. What mathematics can you use to help you with this problem?
2. What math do you know that you could use to represent this problem?
3. What questions can you ask to better define the problem?
4. How can you represent the mathematics in this situation?
5. How can you use a picture to model the problem?

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SMP 5: Use appropriate tools strategically.

1. What math tool can help you to make sense of the problem?
2. How does this math tool help you visualize and represent the problem?
3. What math tool can help you represent this problem?
4. What math tool can help you solve this problem?
5. How does this tool help represent and solve the problem?
6. Why is this a good tool to represent the problem? How do you know?

SMP 6: Attend to precision.

1. Explain/show your solution and/or answer to the problem.
2. What math terms can you use to show understanding?
3. What words can you use to describe the concept?
4. What math terms can you use to help explain your thinking to others?
5. Which symbols are appropriate to solve the problem?

SMP 7: Look for and make use of structure.

1. How can you connect mathematical ideas to representations?
2. What do you notice when ____?
3. How do the representations connect to the equations?
4. How do you know if something is a pattern? How can exploring patterns be helpful in solving this problem?
5. How can you organize the problem into pieces that you can make sense of to help you move forward?
6. How does this relate to ____?

SMP 8: Look for and express regularity in repeated reasoning.

1. Are there calculations that are being repeated?
2. How does looking for patterns help to solve this problem?
3. What do you notice about ____?
4. How can you use a pattern to make a rule?
5. What about the process is repeating?
6. How can you use a pattern to make a generalization?