

CCSSO Standards for Mathematical Practice Student “Look-Fors”

1. Make sense of problems and persevere in solving them

- Consider or attempt multiple entry points
- Analyze information (givens, constraints, relationships, goals)
- Make conjectures and plan a solution pathway
- Use objects, drawings, and diagrams to solve problems
- Monitor progress and change course as necessary
- Check answers to problems and ask, “Does this make sense?”

2. Reason abstractly and quantitatively

- Make sense of quantities and relationships in problem situations
- Represent abstract situations symbolically
- Create a coherent representation of the problem
- Translate from contextualized to generalized or vice versa
- Flexibly use properties of operations

3. Construct viable arguments and critique the reasoning of others

- Use definitions and previously established causes/effects (results) in constructing arguments
- Make conjectures and use counterexamples to build a logical progression of statements to explore and support their ideas
- Listen to or read the arguments of others
- Ask probing questions to other students

4. Model with mathematics

- Determine equation that represents a situation
- Illustrate mathematical relationships using diagrams, two-way tables, graphs, flowcharts and formulas
- Apply assumptions to make a problem simpler
- Check to see if an answer makes sense within the context of a situation and change a model when necessary

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5. Use appropriate tools strategically

- Choose tools that are appropriate for the task.
Examples: *Manipulative Calculator Ruler Digital Technology*
- Use technological tools to visualize the results of assumptions, explore consequences and compare predications with data
- Identify relevant external math resources (digital content on a website) and use them to pose or solve problems

6. Attend to precision

- Communicate precisely using appropriate terminology
- Specify units of measure and provide accurate labels on graphs
- Express numerical answers with appropriate degree of precision
- Provide carefully formulated explanations

7. Look for and make use of structure.

- Look for patterns or structure, recognizing that quantities can be represented in different ways
- Use knowledge of properties to efficiently solve problems
- View complicated quantities both as single objects or compositions of several objects

8. Look for and express regularity in repeated reasoning

- Notice repeated calculations and look for general methods and shortcuts
- Continually evaluate the reasonableness of intermediate results while attending to details and make generalizations based on findings

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. – CCSSO, 2010, p. 8

Adapted from Bay-Williams, J.M., McGatha, M.B., Kobett, B. M., & Wray, J. (2014). *Mathematics Coaching: Resources and Tools for Coaches and Leaders, K-12*. Boston, MA: Pearson.

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