Standards for Mathematical Practice

Overarching habits of mind of a productive mathematical thinker

1. Make sense of problems and persevere in solving them

- ★ Create a plan, follow through, make adjustments as necessary, evaluate result
- ★ Explain relationships between equations, tables, graphs, verbal problems, and data
- ★ Search for trends
- ★ Understand the approach of others problem solving methods and have the ability to compare

6. Attend to precision

- ★ Communicate precisely mathematical reasoning to others
- ★ Calculate accurately and efficiently
- ★ Attend to units and labels
- ★ Correctly use vocabulary and symbols

Reasoning and Explaining

2. Reason abstractly and quantitatively

- ★ Contextualize and decontextualize numbers
- ★ Reasoning habits include:
  - Create coherent representation of the problem
  - Consider units involved
  - Attend to the meaning of quantities
  - Use appropriate properties

3. Construct viable arguments and critique the reasoning of others

- ★ Make conjectures and critique the mathematical thinking of others
- ★ Construct, justify, and communicate mathematical arguments
- ★ Compare and respond to arguments
- ★ Listen to or read other arguments, decide plausibility and ask useful questions

Modeling and Using Tools

4. Model with mathematics

- ★ Apply math to solve problems in everyday life
- ★ Represent math by using symbols, pictures, concrete representation, graphs or equation writing
- ★ Analyze relationships and draw conclusions
- ★ Interpret results in context and reflect if the result makes sense

5. Use appropriate tools strategically

- ★ Consider and be familiar with available tools to solve problems
- ★ Identify relevant external mathematical resources
- ★ Detect possible errors using estimation
- ★ Use technological tools to explore and deepen understanding

Seeing Structure and Generalizing

7. Look for and make use of structure

- ★ See complicated problem as a single object or being composed of several objects
- ★ Identify a pattern
- ★ Understand numbers and spaces as multifaceted

8. Look for and express regularity in repeated reasoning

- ★ Notice if calculations are repeated
- ★ Look for known methods and shortcuts
- ★ Continually evaluate the reasonableness of their intermediate results

All Things Common Core essdack.org

Adapted from: Common Core State Standards for Mathematics with the Kansas Additions

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