

Standards for Mathematical Practice

#1 Make sense of problems and persevere in solving them

What it means: Understand the problem, find a way to attack it, and work until it is done. Basically, you will find practice standard #1 in every math problem, every day. The hardest part is pushing students to solve tough problems by applying what they already know and to monitor themselves when problem-solving.

#2 Reason abstractly and quantitatively

What it means: Get ready for the words contextualize and decontextualize. If students have a problem, they should be able to break it apart and show it symbolically, with pictures, or in any way other than the standard algorithm. Conversely, if students are working a problem, they should be able to apply the “math work” to the situation.

#3 Construct viable arguments and critique the reasoning of others

What it means: Be able to talk about math, using mathematical language, to support or oppose the work of others.

#4 Model with mathematics

What it means: Use math to solve real-world problems, organize data, and understand the world around you.

#5 Use appropriate tools strategically

What it means: Students can select the appropriate math tool to use and use it correctly to solve problems. In the real world, no one tells you that it is time to use the meter stick instead of the protractor.

#6 Attend to precision

What it means: Students speak and solve mathematics with exactness and meticulousness.

#7 Look for and make use of structure

What it means: Find patterns and repeated reasoning that can help solve more complex problems. For young students this might be recognizing fact families, inverses, or the distributive property. As students get older, they can break apart problems and numbers into familiar relationships.

#8 Look for and express regularity in repeated reasoning

What it means: Keep an eye on the big picture while working out the details of the problem. You don't want kids that can solve the one problem you've given them; you want students who can generalize their thinking.

References:

<http://www.scholastic.com/teachers/top-teaching/2013/03/guide-8-mathematical-practice-standards>

<https://www.cde.state.co.us/comath/statestandards>

<http://www.corestandards.org/Math/Practice/>