

Look at “math practices” in the common core and see how we connect with them.

<http://www.insidemathematics.org/index.php/standard-1>

		Engineering Lens
<p><u>Standard 1: Make sense of problems and persevere in solving them</u></p>	<p><i>Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution..</i></p> <p><i>Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem.</i></p>	<p><i>Focus on the first step in Design and problem solving ... What is the core problem we are trying to solve.</i></p> <p><i>Problem Framing</i></p>
<p><u>Standard 2: Reason abstractly and quantitatively</u></p>	<p><i>Mathematically proficient students bring] the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved.</i></p>	<p><i>Use of Reflection or asking questions during the design process.</i></p> <p><i>The iterative process</i></p>
<p><u>Standard 3: Construct viable arguments and critique the reasoning of others</u></p>	<p><i>Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades.</i></p>	<p><i>Use of mind maps and design drawings... Gallery Sketch</i></p>
<p><u>Standard 4: Model with mathematics</u></p>	<p><i>Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation...</i></p>	<p><i>Taking a system view point to describe the problem and how you will map out a solution</i></p>
<p><u>Standard 5: Use appropriate tools strategically</u></p>	<p><i>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator.</i></p>	<p><i>In doing this program, we show how engineering is involved with the tools used.</i></p>
<p><u>Standard 6: Attend to precision</u></p>	<p><i>Mathematically proficient students try to communicate precisely to others.... They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately... In the elementary grades, students give carefully formulated explanations to each other.</i></p>	<p><i>Will focus on the precision of understanding what the real problem is.</i></p>
<p><u>Standard 7: Look for and make use of structure</u></p>	<p><i>Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have.</i></p>	<p><i>Talk a lot about the process and the structure it follows. Doing sketches reflect shapes and their connection</i></p>
<p><u>Standard 8: Look</u></p>	<p><i>As they work to solve a problem, mathematically</i></p>	<p><i>We are all about problem</i></p>

for and express
regularity in
repeated reasoning

proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

solving