# College and Career Ready
# Math SBAC Claims and Targets Quick Reference

| **Claim 1 ~ Concepts & Procedures**<br>Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency. | **Claim 2 ~ Problem Solving**<br>Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies. | **Claim 3 ~ Communicating Reasoning**<br>Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others. | **Claim 4 ~ Modeling & Data Analysis**<br>Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems. |
|---|---|---|---|
| **Assessment Targets** | | | |
| A) Extend the properties of exponents to rational exponents.<br><br>B) Use properties of rational and irrational numbers.<br><br>C) Reason quantitatively and use units to solve problems.<br><br>D) Interpret the structure of expressions.<br><br>E) Write expressions in equivalent forms to solve problems.<br><br>F) Perform arithmetic operations on polynomials.<br><br>G) Create equations that describe numbers or relationships.<br><br>H) Understand solving equations as a process of reasoning and explain the reasoning.<br><br>I) Solve equations and inequalities in one variable.<br><br>J) Represent and solve equations and inequalities graphically.<br><br>K) Understand the concept of a function and use function rotation.<br><br>L) Interpret functions that arise in applications in terms of a context.<br><br>M) Analyze functions using different representations.<br><br>N) Build a function that models a relationship between two quantities.<br><br>O) Prove geometric theorems.<br><br>P) Summarize, represent, and interpret data on a single count or measurement variable. | A) Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.<br><br>B) Select and use appropriate tools strategically.<br><br>C) Interpret results in the context of a situation.<br><br>D) Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas). | A) Test propositions or conjectures with specific examples.<br><br>B) Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.<br><br>C) State logical assumptions being used.<br><br>D) Use the technique of breaking an argument into cases.<br><br>E) Distinguish correct logic or reasoning from that which is flawed, and-if there is a flaw in the argument-explain what it is.<br><br>F) Base arguments on concrete referents such as objects, drawings, diagrams, and actions.<br><br>G) At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plan figures.) | A) Apply mathematics to solve problems arising in everyday life, society, and the workplace.<br><br>B) Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.<br><br>C) State logical assumptions being used.<br><br>D) Interpret results in the context of a situation.<br><br>E) Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.<br><br>F) Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).<br><br>G) Identify, analyze, and synthesize relevant external resources to pose or solve problems. |
| | **8 Mathematical Practices**<br><br>1. Make sense of problems & persevere in solving them.<br><br>2. Reason abstractly and quantitatively.<br><br>3. Construct viable arguments and critique the reasoning of others.<br><br>4. Model with mathematics.<br><br>5. Use appropriate tools strategically.<br><br>6. Attend to precision.<br><br>7. Look for and make use of structure.<br><br>8. Look for and express regularity in repeated reasoning. | | |

**Mathematical Content** | **Mathematical Process**

## SHIFTS in Mathematics

| | | |
|---|---|---|
| Shift 1 | Focus | Teachers significantly narrow and deepen the scope of how time and energy is spent in the math classroom. They do so in order to focus deeply on only the concepts that are prioritized in the standards. |
| Shift 2 | Coherence | Principals and teachers carefully connect the learning within and across grades so that students can build new understanding onto foundations built in previous years. |
| Shift 3 | Fluency | Students are expected to have speed and accuracy with simple calculations; teachers structure class time and/or homework time for students to memorize, through repetition, core functions. |
| Shift 4 | Deep Understanding | Students deeply understand and can operate easily within a math concept before moving on. They learn more than the trick to get the answer right. They learn the math. |
| Shift 5 | Application | Students are expected to use math and choose the appropriate concept for application even when they are not prompted to do so. |
| Shift 6 | Dual Intensity | Students are practicing and understanding. There is more than a balance between these two things in the classroom – both are occurring with intensity. |