

# **NC SIP Math Foundations Crosswalk**

The course goals and competencies of the North Carolina State Improvement Project (NCSIP) Foundations of Mathematics Training (MFT) are strongly aligned to the concepts and skills in the Math K–12 Common Core State Standards (CCSS). This crosswalk is designed as a resource to inform educators about how the Foundations of Mathematics course aligns with the CCSS and NC Teacher Evaluation System standards. The purpose of the Foundations of Math course is to provide teachers with an understanding of the instructional principles derived from scientific-based research and a solid foundation of knowledge and skills to begin using research-proven teaching strategies with students with disabilities who have persistent mathematical problems. In doing so, the course emphasizes the Standards for Mathematical Practices so that teachers begin or continue developing the varieties of expertise they, in turn, will develop in their own students.

## **Common Core State Standards Initiative Standards for Mathematical Practice**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

<http://www.corestandards.org/the-standards/mathematics/introduction/standards-for-mathematical-practice/>

Math Foundations Training Unit Alignment		Common Core Math Standards Sixth Grade
Unit 4-2 stories; determining ratio Unit 5-Relational sentences; raccoons to deer Unit 7-Proportional reasoning; scalar & functional method; ratio vs. fraction; caterpillar problem; informal proportional reasoning with the coffee problems	<b>Ratio &amp; Proportional Relationships</b>	<ul style="list-style-type: none"> <li>* Understand ratio concepts and use ratio reasoning to solve problems</li> </ul>
Unit 3-Problem #3; Marilyn Burns fractions kits; bean party Unit 5-Hands on Equations; equality Unit 6-Base tens; form of a number	<b>The Number System</b>	<ul style="list-style-type: none"> <li>* Apply and extend previous understandings of multiplication and division to divide fractions by fractions</li> <li>* Compute fluently with multi-digit numbers and find common factors and multiples</li> <li>* Apply and extend previous understandings of numbers to the system of rational numbers</li> </ul>
Unit 5-Equality, Hands on Equations; relational sentences Unit 7-Proportional reasoning; Dollar Deals etc.	<b>Expressions &amp; Equations</b>	<ul style="list-style-type: none"> <li>* Apply and extend previous understandings of arithmetic to algebraic equations</li> <li>* Reason about and solve one-variable equations and inequalities</li> <li>* Represent and analyze quantitative relationships between dependent and independent variables</li> </ul>
Unit 2-Geometry; measurement Unit 3-Problem #4 area/perimeter Unit 7-Geometric thinking; Max and Challenge Problems	<b>Geometry</b>	<ul style="list-style-type: none"> <li>* Solve real world mathematical problems involving area, surface area, and volume</li> </ul>
Unit 2-Translating relational sentences	<b>Statistics &amp; Probability</b>	<ul style="list-style-type: none"> <li>* Develop understanding of statistical variability</li> <li>* Summarize and describe distributions</li> </ul>

Math Foundations Training Unit Alignment		Common Core Math Standards Seventh Grade
Unit 4-Determining how to represent ratio Unit 5-Relational vs. assignment sentences; proportional relationship- raccoon to deer ; Integer representations Unit 7-Portportional reasoning; scalar & functional method; Caterpillar Problem; Coffee Strength; Paper Clip Chains; String Around the Earth	<b>Ratio &amp; Proportional Relationships</b>	<ul style="list-style-type: none"> <li>* Analyze proportional relationships and use them to solve real world problems</li> </ul>
Unit 3-Bean party; problem #3 division of fractions Unit 7-Ratio vs. fraction	<b>The Number System</b>	<ul style="list-style-type: none"> <li>* Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers</li> </ul>
Unit 5-Relational sentences; equality; Hands on Equations Unit 7 Paper Clip Chains; String around the Earth; -Dollar Deals, etc.; Max	<b>Expressions &amp; Equations</b>	<ul style="list-style-type: none"> <li>* Use properties of operations to generate equivalent expressions</li> <li>* Solve real-life and mathematical problems using numerical and algebraic expressions and equations</li> </ul>
Unit 2-Geometry; measurement Unit 3-Problem #4 area/perimeter Unit 7-Geometric thinking; Max; Challenge Problems; Foot Problem	<b>Geometry</b>	<ul style="list-style-type: none"> <li>* Draw, construct and describe geometrical figures and describe relationships between them</li> <li>* Solve real-life and mathematical problems involving angle measure, area, surface area and volume</li> </ul>
Unit 2-Translating relational sentences	<b>Statistics &amp; Probability</b>	<ul style="list-style-type: none"> <li>* Use random sampling to draw inferences about a population</li> <li>* Draw informal comparative inferences about two populations</li> <li>* Investigate chance processes and develop, use and evaluate probability needs</li> </ul>

Math Foundations Training Unit Alignment		Common Core Math Standards Eighth Grade
Unit 6-Form of a number	<b>The Number System</b>	<ul style="list-style-type: none"> <li>* Know that there are numbers that are not rational, and approximate them by rational numbers</li> </ul>
Unit 5-Concrete display of integers; number line; proportional relationship- raccoon to deer Unit 7-Portportional reasoning; dollar deals; plotting points for circumference & diameter of earth	<b>Expressions &amp; Equations</b>	<ul style="list-style-type: none"> <li>* Work with radical and integer exponents</li> <li>* Understand the connections between proportional relationships, lines and linear equations</li> <li>* Analyze and solve linear equations and pairs of simultaneous linear equations</li> </ul>
Unit 2-Translating relational sentences Unit 7-Portportional reasoning; diagram literacy; scalar & functional method; Paper Clip Chains; String Around the Earth; Dollar Deals, etc.	<b>Functions</b>	<ul style="list-style-type: none"> <li>* Define, evaluate, and compare functions</li> <li>* Use functions to model relationships between quantities</li> </ul>
Unit 2-Geometry; measurement Unit 7-Measuring "Earth"; geometric thinking	<b>Geometry</b>	<ul style="list-style-type: none"> <li>* Understand congruence and similarity using physical models, transparencies, or geometry software</li> <li>* Understand and apply the Pythagorean Theorem</li> <li>* Solve real-world and mathematical problems involving volume of cylinders, cones and spheres</li> </ul>
Unit 2-Translating relational sentences Unit 5-Relational sentences; raccoon to deer Unit 7-Portportional reasoning; diagram literacy	<b>Statistics &amp; Probability</b>	<ul style="list-style-type: none"> <li>* Investigate patterns of association in bivariate data</li> </ul>