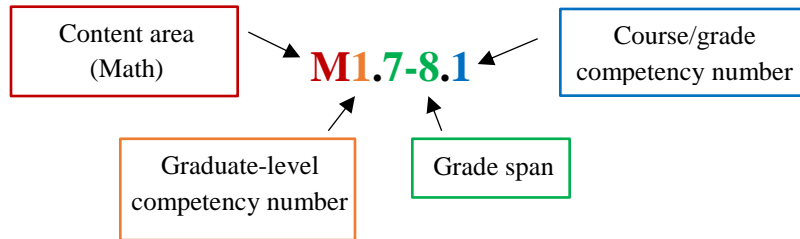


Grades 6-8 Math Competencies

Competency Coding



Middle School Math Competency Checklist

| Competencies | Math 6 | Middle School Math Lab | Math 7 | Math 8 |
|---|--------|------------------------|--------|--------|
| Symbolic Expression: M1: Graduates of the FNSBSD will be able to reason abstractly and utilize symbolic expressions and mathematical models. | ✓ | | ✓ | ✓ |
| M1.3-4.1: The learner will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables. | | | | |
| M1.5-6.1: The learner will reason abstractly and manipulate symbolic expressions to represent relationships and interpret expressions and equations in terms of a given context for determining an unknown value. | ✓ | | | |
| M1.7-8.1: The learner will reason abstractly and manipulate symbolic expressions to represent relationships and interpret expressions and equations in terms of a given context for determining an unknown value. | | | ✓ | ✓ |

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|--|--------|------------------------|--------|--------|
| Numbers and Number Systems: M2: Graduates of the FNSBSD will develop an applied knowledge of numbers and number systems to solve problems. | ✓ | ✓ | ✓ | ✓ |
| M2.3-4.1: The learner will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals. | | ✓ | | |
| M2.5-6.1: The learner will expand their understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using rational numbers. | ✓ | | | |
| M2.7-8.1: The learner will expand their understanding of number systems thinking flexibly and attending to precision and reasonableness when solving problems using rational and irrational numbers. | | ✓ | ✓ | ✓ |
| Reasoning and Strategic Thinking: M3: Graduates of the FNSBSD will use evidence to support authentic application of concepts and support mathematical arguments. | ✓ | ✓ | ✓ | ✓ |
| M3.3-4.1: The learner will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, & manipulatives) to solve authentic applied problems. | | | | |
| MS.3-4.2: The learner will use reasoning and self-monitoring to analyze and justify one or more solution pathways. | | ✓ | | |
| M3.5-6.1: The learner will expand the use of computational strategies, algorithms, and proportional reasoning to rational numbers. | ✓ | | | |
| M3.5-6.2: The learner will use reasoning and metacognitive skills through making conjectures, justifying, and communicating mathematical solutions and arguments. | ✓ | | | |
| M3.7-8.1: The learner will expand the use of computational strategies, algorithms, and proportional reasoning to rational and irrational numbers. | | ✓ | ✓ | ✓ |
| M3.7-8.2: The learner will use reasoning and metacognitive skills through making conjectures, justifying, and effectively communicating mathematical solutions and arguments. | | ✓ | ✓ | ✓ |

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| Measurement: M4: Graduates of the FNSBSD will explain reasoning when applying and modeling geometric principles. | ✓ | ✓ | ✓ | ✓ |
| M4.3-4.1: The learner will use measurement tools, units, and attributes to describe and compare objects, situations, or events, and to solve authentic applied measurement problems. | | | | |
| M4.5-6.1: The learner will use tools and apply precision and reasoning to solve measurement problems in authentic applied contexts. | ✓ | ✓ | | |
| M4.7-8.1: The learner will strategically use tools and apply proportional reasoning and precision to solve measurement problems in pure/ theoretical and authentic applied contexts. | | ✓ | ✓ | ✓ |
| Algebraic Functions, Patterns, and Relations: M5: Graduates of the FNSBSD will utilize patterns, relations, and functions to compare, interpret, and analyze situations. | ✓ | ✓ | ✓ | ✓ |
| M5.3-4.1: The learner will make use of structure to represent, analyze, and generalize change or patterns in various contexts using models and justification. | | | | |
| M5.5-6.1: The learner will make use of structure to describe and compare situations that involve change or patterns, and use the information to make conjectures and justify conclusions/solutions. | ✓ | | | |
| M5.7-8.1: The learner will make use of structure to describe and compare situations that involve proportionality, change, or patterns, and use the information to make conjectures and justify conclusions/ solutions. | | ✓ | ✓ | ✓ |

| Competencies | Math 6 | Middle School Math Lab | Math 7 | Math 8 |
|--|--------|------------------------|--------|--------|
| Geometry: M6: Graduates of the FNSBSD will solve problems involving spatial reasoning and model geometric concepts in applied contexts. | ✓ | ✓ | ✓ | ✓ |
| M6.3-4.1: The learner will use attributes of two-dimensional shapes and complex figures to solve authentic applied problems. | | | | |
| M6.5-6.1: The learner will solve problems involving reasoning using properties of two- and three- dimensional shapes to analyze, represent, and model geometric relationships in authentic applied contexts. | ✓ | | | |
| M6.7-8.1: The learner will solve problems involving reasoning using properties of two- and three- dimensional shapes to analyze, represent, and model geometric relationships in pure/ theoretical and authentic applied contexts. | | ✓ | ✓ | ✓ |
| Data, Analysis, Probability, and Statistics: M7: Graduates of the FNSBSD will apply statistical methods to summarize, represent, analyze, and interpret data. | ✓ | ✓ | ✓ | ✓ |
| M7.3-4.1: The learner will gather, represent, and interpret data related to a particular/ single context, including authentic applications. | | ✓ | | |
| M7.5-6.1: The learner will design investigations and gather data involving populations (data sets). | ✓ | | | |
| M7.7-8.1: The learner will design investigations and conduct probability experiments involving populations. | | ✓ | ✓ | ✓ |