Content Standards:

1. Number Sense 2. Operations 3. Estimation and Approximation 4. Ratio, and Proportion and Percent 5. Measurement
6. Spatial Relations and Geometry 7. Probability and Statistics 8. Patterns 9. Algebra 10. Discrete Math

Grade 8
Content Standard #1: Number Sense

Connecticut Framework	Mansfield Objectives	Lessons/Materials/ Activities	CMT/ CAPT	Assessment
1. Use real life experiences, physical materials, and technology to construct number meanings for powers and roots, absolute value, and scientific notation	a. Understanding squares and square roots. b. Using scientific notation to express, compare and calculate large numbers	MiC: Reflections on Number Supplementary work on Scientific Notation.	CAPT 2a CMT 1c CAPT 1a	MiC Unit Assessments and teacher generated assessments
2. Develop, use, and explain applications of direct and indirect variation	a. Use direct variation to make and use scale drawings	MiC: Reflections on Number	CAPT 4c CMT 12a,12b	MiC Unit Assessments and teacher generated assessments
3. Develop and use an intuitive sense of the magnitude of numbers including millions, billions, and trillions.	a. Develop and use an intuitive sense of the magnitude of numbers including millions, billions, and trillions.	Supplementary Work on Large numbers	CAPT1c CMT4c	MiC Unit Assessments and teacher generated assessments
4. Understand, represent, and use numbers in a variety of equivalent forms to solve problems which arise from real-world situations	a. Understand, represent, and use numbers in a variety of equivalent forms to solve problems which arise from real-world situations.	MiC: All	CAPT 1a	MiC Unit Assessments and teacher generated assessments

Content Standard #2: Operations

Connecticut Framework	Mansfield Objectives	Lessons/Materials/Activities	CMT CAPT	Assessment
1. Develop, use, and explain operations and applications involving integers, rational numbers, and irrational numbers	a. Exploring the relationships among basic operations using different subsets of real numbers.	MiC: Reflections on Number	CAPT 2a CMT 5a	MiC Unit Assessments and teacher generated assessments
2. Develop, use, and explain calculations and applications of powers, roots, and absolute value	a. Develop, use, and explain calculations and applications of powers, roots, and absolute value.	MiC: Reflections on Number/ Growth	CAPT 2a	MiC Unit Assessments and teacher generated assessments
3. Extend the identification and use of inverse relationships to include powers and root	a. Using the inverse tangent function to find angle measures. b. Use inverse relationships to solve problems.	MiC: Reflections on Number MiC: Going the Distance	CAPT 4c	MiC Unit Assessments and teacher generated assessments
4. Select and use an appropriate method for computing from among estimation, paper and pencil, and technology in real-world problem situations	a. Select and use an appropriate method for computing from among estimation, paper and pencil, and technology in real-world problem situations.	MiC: All	CAPT 2b	MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #3: Estimation and Approximation

Connecticut Framework	Mansfield Objectives	Lessons/Materials/ Activities	CMT CAPT	Assessment
1. Assess the reasonableness of answers to problems arrived at using pencil and paper techniques, mental math, formulas, and technology	a. Assess the reasonableness of answers to problems arrived at using pencil and paper techniques, mental math, formulas, and technology	MiC: All	CAPT 3a CAPT 3b CMT 11a,11b	MiC Unit Assessments and teacher generated assessments
2. Develop, use, and apply a variety of estimation strategies in problem situations	a. Develop, use, and apply a variety of estimation strategies in problem situations	MiC: All	CAPT 2b CMT 10a,10c	MiC Unit Assessments and teacher generated assessments
3. Make reasonable estimates of the values of formulas, functions, and roots	a. Make reasonable estimates of the values of formulas, functions, and roots	MiC: Reflections on Number/ Growth	CMT 23c CAPT 3a	MiC Unit Assessments and teacher generated assessments
4. Recognize the limitations of estimation and assess the amount of error resulting from estimation	a. Recognize the limitations of estimation and assess the amount of error resulting from estimation	MiC: All	CMT 10b CAPT 3b	MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #4: Ratio, Proportion and Percent

Connecticut Framework	Mansfield Objectives	Lessons/Materials/Activities	CMT CAPT	Assessment
1. Extend applications of ratio and proportion	a. Extend applications of ratio and proportion	MiC: Triangles and Patchwork/ Going the Distance	CAPT 4a CMT 12a,12b	MiC Unit Assessments and teacher generated assessments
2. Develop, use, and explain applications of direct and indirect variation	a. Develop, use, and explain applications of direct and indirect variation	MiC: Growth/Graphing Equations	CAPT 4c	MiC Unit Assessments and teacher generated assessments
3. Develop, use, and explain processes to identify and find equivalent rates	a. Develop, use, and explain processes to identify and find equivalent rates	MiC: Graphing Equations	CAPT 4b CMT 16a	MiC Unit Assessments and teacher generated assessments
4. Develop, use, and explain applications of trigonometric ratios	a. Develop, use, and explain applications of trigonometric ratios	MiC: Graphing Equations/ Going the Distance		MiC Unit Assessments and teacher generated assessments
5. Use real-world problems to develop an understanding of scaling concepts	a. Use real-world problems to develop an understanding of scaling concepts	MiC: Triangles and Patchwork/Going the Distance	CMT 18d CAPT 5d	MiC Unit Assessments and teacher generated assessments
6. Use appropriate technology to enhance development of concepts of ratio, proportion, and percent	a. Use appropriate technology to enhance development of concepts of ratio, proportion, and percent	MiC: Graphing Equations/ Going the Distance/ and others…		MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #5: Measurement

Connecticut Framework	Mansfield Objectives	Lessons/Materials/Activities	CMT CAPT	Assessment
1. Use the concepts of perimeter, area, volume, angle measure, capacity, weight, and mass to describe and compare various objects	a. Use the concepts of perimeter, area, volume, angle measure, capacity, weight, and mass to describe and compare various objects	MiC: Graphing Equations (angle) Triangles and Patchwork (area) Going the Distance (area) Supplement volume, capacity, mass, perimeter	CAPT 5a CMT 16b	MiC Unit Assessments and teacher generated assessments
2. Develop and apply formulas and procedures for determining measures	a. Develop and apply formulas and procedures for determining measures	MiC: Growth/ Going the Distance/ : Triangles and Patchwork	CMT 23d CAPT 5d	MiC Unit Assessments and teacher generated assessments
3. Select and use appropriate tools and techniques to measure quantities to specified degrees of precision and accuracy	a. Select and use appropriate tools and techniques to measure quantities to specified degrees of precision and accuracy	MiC: Going the Distance	CAPT 5b CMT 16c	MiC Unit Assessments and teacher generated assessments
4. Understand and apply the relationship between precision of measurements and accuracy of calculations	a. Understand and apply the relationship between precision of measurements and accuracy of calculations	MiC: Going the Distance/Graphing Equations		MiC Unit Assessments and teacher generated assessments
5. Describe how a change in one dimension affects the measure of perimeter, area, and volume of an object	a. Describe how a change in one dimension affects the measure of perimeter, area, and volume of an object	MiC: Triangles and Patchwork		MiC Unit Assessments and teacher generated assessments
6. Develop, use, and explain how to measure objects indirectly	a. Develop, use, and explain how to measure objects indirectly	MiC: Triangles and Patchwork/ Going the Distance	CAPT 5d	MiC Unit Assessments and teacher generated assessments
7. Use appropriate technology to enhance understanding of measurement concepts	a. Use appropriate technology to enhance understanding of measurement concepts	MiC: Triangles and Patchwork/ Graphing Equations/ Growth/ Going the Distance		MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #6: Spatial Relationships and Geometry

Connecticut Framework	Mansfield Objectives	Lessons/Materials/Activities	CMT CAPT	Assessment
1. Develop an understanding of the properties of geometric figures by applying knowledge of transformations	a. Develop an understanding of the properties of geometric figures by applying knowledge of transformations.	MiC: Triangles and Beyond (Gr.7) Supplement in 8th grade	CAPT 6b CMT 18a	MiC Unit Assessments and teacher generated assessments
2. Develop an understanding of the properties of geometric figures by applying knowledge of coordinate representations	a. . Develop an understanding of the properties of geometric figures by applying knowledge of coordinate representations	MiC: Graphing Equations "Hunting for Royal Treasure" HRW Algebra 1 interactive	CMT 18e CAPT 6e	MiC Unit Assessments and teacher generated assessments
3. Use inductive and deductive reasoning to develop properties of figures	a. Use inductive and deductive reasoning to develop properties of figures	MiC: Triangles and Patchwork/Going the Distance	CMT 17b CAPT 6c	MiC Unit Assessments and teacher generated assessments
4. Analyze properties of three-dimensional shapes by constructing models and by drawing and interpreting two-dimensional representations of them	a. Analyze properties of three-dimensional shapes by constructing models and by drawing and interpreting two-dimensional representations of them	MiC: Patterns and Figures/Going the Distance *Sphereland by* Dionys Burger (read in Content Reading)	CMT 18c CAPT 6a	MiC Unit Assessments and teacher generated assessments
5. Interpret algebraic equations and inequalities geometrically and describe geometric objects algebraically	a. Interpret algebraic equations and inequalities geometrically and describe geometric objects algebraically	MiC: Get The Most Out Of It	CAPT 6e, 6f	MiC Unit Assessments and teacher generated assessments
6. Classify figures in terms of congruence and similarity and apply these relationships	a. Classify figures in terms of congruence and similarity and apply these relationships	MiC: Triangles and Patchwork	CAPT 6d CMT 18d, 17b	MiC Unit Assessments and teacher generated assessments
7. Use vectors and simple operations on vectors (addition, scalar multiplication) to solve real-world problems	a. Use vectors to solve real-world problems	MiC: Graphing Equations/Going the Distance		MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #7: Probability and Statistics

Connecticut Framework	Mansfield Objectives	Lessons/Materials/ Activities	CMT CAPT	Assessment
1. Understand sampling and recognize its role in statistical claims	a. Understand sampling and recognize its role in statistical claims	MiC: Great Expectations Insights into Data	CAPT 7a	MiC Unit Assessments and teacher generated assessments
2. Understand and apply measures of central tendency and measures of dispersion	a. Understand and apply measures of central tendency and measures of dispersion	MiC : Insights into Data	CAPT 7b CMT 20b	MiC Unit Assessments and teacher generated assessments
3. Conduct a statistical experiment and interpret and communicate the results	a. Conduct a statistical experiment and interpret and communicate the results	MiC: Insights into Data		MiC Unit Assessments and teacher generated assessments
4. Develop, use, and explain real life application of linear (and non-linear) models	a. Develop, use, and explain real life application of linear (and non-linear) models	MiC: Growth Insights into Data	CAPT 9c CMT 23d	MiC Unit Assessments and teacher generated assessments
5. Develop, use, and explain linear models to interpolate and predict from data	a. Develop, use, and explain linear models to interpolate and predict from data	MiC: Growth/ Insights into Data	CAPT 9c	MiC Unit Assessments and teacher generated assessments
6. Use technology to collect, organize, display, and analyze data	a. Use technology to collect, organize, display, and analyze data	MiC: Growth/ Insights into Data Exploring Motion with the CBR		MiC Unit Assessments and teacher generated assessments
7. Draw and defend inferences from charts, tables, and data	a. Draw and defend inferences from charts, tables, and data	MiC: Insights into Data	CMT 20a	MiC Unit Assessments and teacher generated assessments
8. Use simulations to estimate probabilities and predict outcomes	a. Use simulations to estimate probabilities and predict outcomes	MiC: Great Expectations Insights into Data	CAPT 7f	MiC Unit Assessments and teacher generated assessments
9. Use linear and nonlinear models to formulate predictions from data	a. Use linear and nonlinear models to formulate predictions from data	MiC: Insights into Data, Growth	CAPT 9c	MiC Unit Assessments and teacher generated assessments
10. Use technology to reinforce, enhance, and extend understanding and application of probability and statistics	a. Use technology to reinforce, enhance, and extend understanding and application of probability and statistics	MiC: Growth		MiC Unit Assessments and teacher generated assessments

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Grade 8
Content Standard #8: Patterns

Connecticut Framework	Mansfield Objectives	Lessons/Materials/ Activities	CMT CAPT	Assessment
1. Describe, extend, analyze, and construct a wide variety of patterns, including those which are numerical, geometrical, and statistical	a. Describe, extend, analyze, and construct a wide variety of patterns, including those which are numerical, geometrical, and statistical	MiC: Patterns and Figures/ Graphing Equations	CAPT 8a CMT 22	MiC Unit Assessments and teacher generated assessments
2. Represent and describe pattern relationships using tables, rules, equations, and graphs.	a. Represent and describe pattern relationships using tables, rules, equations, and graphs	MiC: Patterns and Figures	CAPT 8b	MiC Unit Assessments and teacher generated assessments
3. Use patterns and relationships to represent and solve problems	a. Use patterns and relationships to represent and solve problems	MiC: Patterns and Figures		MiC Unit Assessments and teacher generated assessments
4. Make and justify predictions using patterns	a. Make and justify predictions using patterns	MiC: Patterns and Figures	CAPT 8c	MiC Unit Assessments and teacher generated assessments
5. Analyze tables and graphs to identify patterns and relationships in real world situations	a. Analyze tables and graphs to identify patterns and relationships in real world situations	MiC: Graphing Equations	CAPT 8b	MiC Unit Assessments and teacher generated assessments
6. Create appropriate mathematical models using patterns *{8th - develop}*	a. Create appropriate mathematical models using patterns	MiC: Patterns and Figures	CAPT 8c	MiC Unit Assessments and teacher generated assessments
7. Recognize and communicate the restrictions of mathematical models based on patterns	a. Recognize and communicate the restrictions of mathematical models based on patterns	MiC: Patterns and Figures		MiC Unit Assessments and teacher generated assessments
8. Use appropriate technology to extend understanding of patterns	a. Use appropriate technology to extend understanding of patterns	MiC: Patterns and Figures		MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #9: Algebra

Connecticut Framework	Mansfield Objectives	Lessons/Materials/ Activities	CMT CAPT	Assessment
1. Develop, use, explain, and analyze procedures for working with: a) algebraic expressions, equations, and inequalities b) systems of equations and inequalities c) absolute value functions d) matrices	a. Develop, use, explain, and analyze procedures for working with: i) algebraic expressions, equations, and inequalities ii) systems of equations and inequalities	MiC: Get the Most Out of It/ Graphing Equations	CAPT 9a	MiC Unit Assessments and teacher generated assessments
2. Translate among and use tabular, symbolic, and graphical representations of equations and inequalities	a. Translate among and use tabular, symbolic, and graphical representations of equations and inequalities	MiC: Graphing Equations/Get the Most Out of It/Growth	CAPT 9a	MiC Unit Assessments and teacher generated assessments
3. Develop, use, and explain relationships between slope and rate	a. Develop, use, and explain relationships between slope and rate	MiC : Graphing Equations/Growth		MiC Unit Assessments and teacher generated assessments
4. Model real-world phenomena using linear functions	a. Model real-world phenomena using linear functions	MiC: Growth	CAPT 9c	MiC Unit Assessments and teacher generated assessments
5. Analyze functional relationships to explain how a change in one quantity results in a change in another	a. Analyze functional relationships to explain how a change in one quantity results in a change in another	MiC: Graphing Equations/Going the Distance		MiC Unit Assessments and teacher generated assessments
6. use the coordinate plane to represent functions and relations	a. Use the coordinate plane to represent functions and relations	MiC: Graphing Equations		MiC Unit Assessments and teacher generated assessments

7. Use graphing calculators and computers to: a) solve equations and inequalities b) explore relationships between algebraic and graphical representations of functions c) represent and explore models of real-world situations	a. Use graphing calculators and computers to: i) solve equations and inequalities ii) explore relationships between algebraic and graphical representations of functions iii) represent and explore models of real-world situations	MiC: Get the Most Out of It/ Graphing Equations/ Growth		MiC Unit Assessments and teacher generated assessments

Grade 8
Content Standard #10: Discrete Mathematics

Connecticut Framework	Mansfield Objectives	Lessons/Materials/ Activities	CMT CAPT	Assessment
1. Use the recursive process to explore problems	a. Using recursion and direct formulas	MiC: Growth/Patterns and Figures	CAPT 10b	MiC Unit Assessments and teacher generated assessments
2. Use systematic listing and counting strategies including simple combinations and permutations			CAPT 10a	MiC Unit Assessments and teacher generated assessments
3. Devise, describe, and test algorithms for solving optimization problems	a. Devise, describe, and test algorithms for solving optimization problems	MiC: Get the Most Out of It		MiC Unit Assessments and teacher generated assessments
4. Represent problem situations using matrices				MiC Unit Assessments and teacher generated assessments
5. Use analogies and similarities to solve problems				MiC Unit Assessments and teacher generated assessments
6. Understand and use inductive reasoning to formulate reasonable conjectures recognizing the limitations {8^{th} grade}	a. Understand and use inductive reasoning to formulate reasonable conjectures recognizing the limitations	MiC: Reflections on Number/Patterns and Figures		MiC Unit Assessments and teacher generated assessments