

(CTE) MATHEMATICS IN (NAME OF PROGRAM)
Professional Math IV
Unit Pacing Guide

Rational and Purpose:

Integrated math is provided to enhance mathematics in high school and provide students with the math skills necessary for the current job market and/or prepare students for college entry. Curriculum that is contained within Career Technology Education (CTE) provides enhanced mathematics instruction that makes mathematics more explicit in a meaningful context and helps reinforce students' mathematics understanding both in and out of context.

Guidelines:

All objectives must be mastered at a passing efficiency level in order to receive 1 Math credit. The content/objectives to be completed in four (4) semesters are listed below in each trade specific program. Since each program contains differing content at various stages, an independent content/objective list will be constructed for each curriculum in every course. Once a designated semester worth of content/objectives (which are listed in the following table) are accomplished, .25 credits will be earned per semester for a total of 1 math credit at the end of 2 years. Failure to complete the required semester content/objectives may result in the student being removed from the Math program.

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
<p><u>Unit Title:</u> (Pre-knowledge) Review of all mathematic objectives for mastery to be a success in the program of study</p> <p><u>Core Concept:</u> Addition and subtraction of whole numbers, multiplication and division of whole numbers, mathematical operation of addition and subtraction of decimal fractions, mathematical operation of multiplication and division of decimal fractions, addition and subtraction of fractions, multiplication and division of fractions, changing common fractions to decimal fractions, changing decimal fractions to common fractions.</p>							
Addition and subtraction of whole numbers	1 st quarter 1 week	After completing this unit the Student will be able to calculate whole numbers through the mathematical processes of addition, subtraction,	MA1, G, 1.10 CLEs N-1B, N-1C, M-2D	Whole numbers Real numbers Natural numbers Rational numbers addend sum minuend	Worksheets of addition and subtraction problems	Paper and pencil problems and software demonstrational activities	Test of at least 10 problems in each operation to demonstrate mastery

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				subtrahend difference			
Multiplication and division of whole numbers	1 st quarter 1 week	After completing this unit the Student will be able to calculate whole numbers through the mathematical processes of multiplication and division.	MA1, G, 1.10 CLEs N-1B, N-1C. M-2D	Whole numbers Real numbers Natural numbers Rational numbers multiplicand multiplier product factor quotient divisor dividend	Worksheets of multiplication and division problems	Paper and pencil problems and software demonstrational activities	Test of at least 10 problems in each operation to demonstrate mastery
Reducing proper and improper fractions	1 st quarter 1 week	After completing this unit the student will be able to add & subtract proper and improper fractions	MA1 G, 3.3, 3.4 CLEs N-1B, N-1C, N-2D, N-3E	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction.	Test of at least 10 problems in each operation to demonstrate mastery
Add fractions With like denominators and reducing to lowest terms	1 st quarter 1 week	After completing this unit the student will be able to add rational numbers with like denominators and reduce them to lowest terms	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Add fractions	1 st quarter 1	After completing this unit the student	MA 1, MA 5	Prime numbers	Hardcopy	Paper and pencil	Test of at least 10

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with unlike denominators	week	will be able to add rational numbers with unlike denominators	G 3.3, 1.6, 3.4 CLEs N-1C, N-2D, N-3D, N-3E	greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	worksheets, video, internet and other electronic sources	problems and software demonstrational activities. Peer grouping for additional support and interaction	problems in each operation to demonstrate mastery
Add fractions With unlike denominators When neither is lowest common denominator	1 st quarter 1 week	After completing this unit the student will be able to add rational numbers with unlike denominators when neither is lowest.	MA 1, MA 5 G 3.3, 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N-2D, N-3D, N-3E	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Add mixed numbers with like denominators	1 st quarter 1 week	After completing this unit the student will be able to add mixed numbers with like denominators.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N-2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Add mixed numbers with unlike denominators	1 st quarter 1 week	After completing this unit the student will be able to add mixed numbers with rational numbers when neither rational number has a common denominator.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N-2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for	Test of at least 10 problems in each operation to demonstrate mastery

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				numerator denominator reciprocal equivalent		additional support and interaction	
Subtracting fractions with like denominators	2nd quarter 1 week	After completing this unit the student will be able to subtract rational numbers with like denominators.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Subtracting fractions with unlike denominators	2 nd quarter 1 week	After completing this unit the student will be able to subtract rational numbers with unlike denominators.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Subtracting mixed numbers and reducing answers to lowest terms	2 nd quarter 1 week	After completing this unit the student will be able to subtract mixed numbers and reduce their answers to lowest terms.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Subtracting	2 nd quarter 1	After completing this unit the student	MA 1, MA 5	Prime numbers	Hardcopy	Paper and pencil	Test of at least 10

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fractions when borrowing is necessary	week	will be able to subtract rational numbers when borrowing is necessary.	G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	worksheets, video, internet and other electronic sources	problems and software demonstrational activities. Peer grouping for additional support and interaction	problems in each operation to demonstrate mastery
Multiplying fractions	2 nd quarter 1 week	After completing this unit the student will be able to multiply rational numbers.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Multiplying fractions and whole numbers	2 nd quarter 1 week	After completing this unit the student will be able to multiply rational numbers and whole numbers.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Dividing fractions	2 nd quarter 1 week	After completing this unit the student will be able to divide rational numbers.	MA 1, MA 5 G 1.6, 1.10, 3.4 CLEs N-1B, N-1C, N- 2D, N-3D,	Prime numbers greatest common factor least common multiple rational expression	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for	Test of at least 10 problems in each operation to demonstrate mastery

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
				numerator denominator reciprocal equivalent		additional support and interaction	
Changing common fractions to decimal fractions and decimal fractions to common fractions	2 nd quarter 1 weeks	After completing this unit the student will be able to Change common fractions to decimal fractions and decimal fractions to common fractions.	MA 1, MA 5 G 3.3, 1.6, 1.10, 3.4 CLEs N-1B, N-1C, M-2D, M-3D, M-3E	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery
Addition, subtraction, multiplication and divisions of decimals to recognize and collect data from Tables and Charts and use this data to perform more advanced Calculations.	2 nd quarter 1 week	After completing this unit the student will be able to add, subtract, multiply and divide decimal fractions.	MA 1, MA 5 G 3.3, 1.6, 1.10, 3.4 CLEs N-1B, N-1C, M-2D, M-3D, M-3E	Prime numbers greatest common factor least common multiple rational expression numerator denominator reciprocal equivalent	Hardcopy worksheets, video, internet and other electronic sources	Paper and pencil problems and software demonstrational activities. Peer grouping for additional support and interaction	Test of at least 10 problems in each operation to demonstrate mastery

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
<p><u>Unit Title:</u> (Current Knowledge) Module # I</p> <p><u>Core Concept:</u></p>							
Comp. # 1							
Comp. # 2							
Comp. # 3							

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
Comp. # 4							
<u>Unit Title:</u> (Current Knowledge) Module # II <u>Core Concept:</u>							
Comp. # 1							
Comp. # 2							

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
Comp. # 3							
Comp. # 4							
<p><u>Unit Title:</u> (Current Knowledge) Module # III</p> <p><u>Core Concept:</u></p>							

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
Comp. # 1							
Comp. # 2							
Comp. # 3							
Comp. # 4							

Competencies	Time Span (quarter/wks)	Course Objectives	Show-Me Standards and CLE Code	Vocabulary	Resources	Learning Activities & Instructional Strategies	Assessment
<p><u>Unit Title:</u> (Current Knowledge) Module # IV</p> <p><u>Core Concept</u></p>							
Comp. # 1							
Comp. # 2							

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Comp. # 3							
Comp. # 4							
<p><u>Unit Title:</u> (Post Knowledge) Higher education/career prep project</p> <p><u>Core Concept:</u> To unite in a project with at least one other program to utilize mathematical concepts learned in previous mathematics curriculum to provide evidential proof of mastery.</p>							

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