Statewide Transportation, Distribution, and Logistics (TDL) Curriculum Contextualized Math Module

Students will:

OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
1. Develop successful study skills in math	Math anxiety Personal success strategies in math	• Math anxiety inventory - Use: **Revised Math Attitude Scale** • Math anxiety discussion - Use: **Math Anxiety Discussion Handouts** (Ten Ways to Reduce Math Anxiety, Math Anxiety Code of Responsibility) • Mathematics Diagnostic Test • Learning Styles Inventory • Discussion on success strategies in math	Student demonstration Teacher observation
2. Solve whole number problems in TDL contextualized formats	Whole numbers Integers and Order of Operations Applications	• i-Pathways: *Basic Math*—Unit 1: Lesson 2 Addition and Subtraction, Lesson 3 – Multiplication and Division, and Lesson 4 – Problem Solving • CARS: *Math*—Unit 1: Whole Numbers (Lessons 1-4) • Integers and Order of operations explanation • Use: **Resource file worksheets** • Use: **TDL Math Learning Project 1 – Trucking** • Use: **TDL Math Learning Project 2 – Warehousing & Distribution Center Operations**	Student demonstration Teacher observation Student completion of project(s)
3. Solve fraction problems in TDL contextualized format	Equivalent fractions Factors and lowest terms	• Review of fractions and all properties • i-Pathways: *Basic Math*—Unit 1: Lesson 2 Addition and Subtraction, Lesson 3 – Multiplication and Division, and Lesson 4 – Problem Solving. • i-Pathways: *Basic Math*—Unit 3: Fractions: All lessons. • CARS: *Math*—Unit 3: Fractions (Lessons 1-5)	Student demonstration Teacher observation

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Students will:

OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
3. Solve fraction problems in TDL contextualized format (Continued)	Evaluating fractions with like and unlike terms	- Addition of fractions - Subtraction of fractions - Multiplication of fractions - Division of fractions	Student demonstration Teacher observation
	Complex fractions	Definition and explanation of complex fractions	
	Improper fractions and mixed numbers	- Working with improper fractions - Working with mixed numbers - i-Pathways: *Basic Math*—Unit 4: Mixed Numbers: All Lessons - CARS: *Math*—Unit 3: Fractions (Lessons 1-5) - Use: **Resource file worksheets**	
	Applications	- Use: **TDL Math Learning Project 1 – Trucking** - Use: **TDL Math Learning Project 2 – Warehousing Distribution Center Operations**	Student completion of project(s)
4. Solve decimal problems	Significant digits	Significant digits explanation	
	Rounding rules	- Rounding rules and review - i-Pathways: *Basic Math*—Unit 5: Decimal Numbers: All Lessons	
	Scientific notation	Scientific notations and exponents explanation	

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OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
4. Solve decimal problems (continued)	Evaluating with decimal numbers	• Addition and subtraction of decimals • Multiplication and division of decimals • CARS: *Math*—Unit 5: Decimal Numbers--(Lessons 1-3) • Use: **Resource file worksheets**	Student demonstration
	Decimal and common fraction equivalents	• Converting between decimal fractions and common fractions	Teacher observation
	Applications	• Use: **TDL Math Learning Project 1 – Trucking** • Use: **TDL Math Learning Project 2 – Warehousing & Distribution Center Operations**	Student completion of project(s)
5. Solve ratio and proportion problems in the TDL context	Ratios Proportions	• Definition of ratios, rates, and unit rates/prices, conversions • Definition of proportion • Load size, floor space, time and distance, etc. • Cost per unit, miles per gallon, shipping rates, etc. • i-Pathways: *Basic Math*—Unit 6: Lesson 2 Ratios and Proportions • CARS: *Math*—Unit 6: Ratios and Proportions (Lessons 1-4):and Unit 7: Percents--(Lesson 6) • Use: **Resource file worksheets**	Student demonstration Teacher observation
	Applications	• Use: **TDL Math Learning Project 1 – Trucking** • Use: **TDL Math Learning Project 3 – Staffing Logistics**	Student completion of project(s)

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Students will:

OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
6. Use percents, averages and estimates in the TDL and business contexts	Percents Averages Estimates	• Definition of percentage • Computing averages/average cost per unit • Estimating material and labor cost • i-Pathways: *Basic Math*—Unit 7: Lesson 1, Decimals and Percents, Lesson 2 – Fractions and Percents • CARS: *Math*—Unit 7: Percents—Lessons 1-3) CARS: *Math*—Appendix B: Elementary Statistics: Mean, Median, Mode • Use: **Resource file worksheets**	Student demonstration Teacher observation
	Applications	• Use: **TDL Math Learning Project 2 – Warehousing & Distribution Center Operations** • Use: **TDL Math Learning Project 3 – Staffing Logistics**	Student completion of project(s)
7. Solve percent proportion problems	Percent proportions	• Using percentages with proportions • i-Pathways: *Basic Math*—Unit 7: Lesson Lesson 3 – Applications with Percents and Lesson 5 Percent of Increase and Percent of Decrease • Use: **Resource file worksheets**	Student demonstration
	Applications	• Use: **TDL Math Learning Project 3 – Staffing Logistics**	Student completion of project

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Students will:

OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
8. Complete TDL applications of basic measurements	Geometry	- Geometry formulas: perimeter, area, volume - Time and Distance - Work/Energy - Angles and triangles - Circles - i-Pathways: *Math*—Unit 3: Lesson 2, Classifying Triangle, Lesson 4 Circles, and Lesson 5 Area of Polygons - CARS: *Math*—Unit 10: Introduction to Geometry—Lesson 1: Points, Lines, Planes, and Angles Lesson 2: Classifying Triangles and The Pythagorean Theorem Lesson 4: Circles - Use: **TDL Math Learning Project 2 – Warehousing & Distribution Center Operations**	Student demonstration Teacher observation Student completion of project
9. Solve problems with exponents and roots with order of operations in applied settings	Exponents Roots	- Definition of exponents - Exponent rules - Exponents in Area and Volume - CARS: *Math*—Unit 2: Exponents, Prime Numbers, & Least Common Multiples—Lesson 1: Exponents Lesson 2: Order of Operations Unit 5: Decimal Numbers—Lesson 5: Square Roots and Pythagorean Theorem - Definition of roots - Rules of roots - i-Pathways: *Basic Math*—Unit 3: Lesson 1- Exponents - Use: **Resource file worksheets**	Student demonstration Teacher observation

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Students will:

OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
10. Interpret graphic representation of data from work settings	Basic Statistics (Mean, Median, Mode)	• Line graphs • Pie graphs • Bar graphs • Mean, median, and mode • i-Pathways: *Math*—Unit 1: Lesson 5, Mean, Median, and Mode • CARS: *Math*—Appendix A: Reading Graphs and Charts	Student demonstration Teacher observation
	Applications	• Use: **TDL Math Learning Project 2 – Warehousing & Distribution Center Operations**	Student completion of project
11. Use formulas and equations to solve problems	Working with formulas	• Work • Energy • Area of triangles and circles • Volume of sphere, prism, cylinder, and cone	Student demonstration Teacher observation
	Writing expressions	• Writing expressions from word problems • Evaluating expressions • i-Pathways: *Math*—Unit 2: Lesson 1 Variable and Algebraic Expressions • CARS: *Math*—Unit 9: Introduction to Algebra—Lesson 1: Variables and Algebraic Expressions	
	Solving equations	• Solving linear equations • Use: **Resource file worksheets**	

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OUTCOMES	CONTENT	ACTIVITIES/RESOURCES	ASSESSMENT
12. Solve practical geometry and trigonometry problems	Pythagorean Theorem	- Definition of the Pythagorean Theorem - Applications of the Pythagorean Theorem - Planning delivery routes - i-Pathways: *Math*—Unit 3: Lesson 2, Classifying Triangles and the Pythagorean Theorem - CARS: *Math*—Unit 10: Introduction to Geometry—Lesson 2: Classifying Triangles and the Pythagorean Theorem - Use: **Resource file worksheets**	Student demonstration Teacher observation