Math Topics (9240) Course Overview Curriculum Document

Course Description

The AASD Math Topics curriculum aligns with the Fox Valley Technical College (FVTC) College Mathematics curriculum. Students taking and successfully completing Math Topics with a minimum grade of "B" will receive Advanced Standing (AS) for FVTC class when they enroll there. The Advanced Standing status is also accepted by other Wisconsin Technical colleges per the receiving college's guidelines. This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric systems to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

Credits	Prerequisites
1	Geometry

Board Approved	Revised
August 2015	September 2022

Required Assessments

District-wide, standards-based common summative assessments

Textbooks/Resources

Blitzer, R. F. (2022). Thinking Mathematically [8th Ed.]. Pearson.
ISBN 13: 9780137551316

Course Essential Understandings	Course Relevance Questions
As a result of successfully completing this course, students will understand that: ● Math is a process. ● Mathematical knowledge, skill and strategies are used to solve mathematical, real-world and non-routine problems by reasoning, both with written and oral communication, and focusing on appropriate use of technology. ● Math can model relations, specifically functions in context of real-world applications. ● Algebraic Relationships can be discovered, used to describe and generalize simple and complex patterns. ● Algebraic techniques can be used to define and describe real world problems to determine and justify appropriate solutions. ● Numbers can be used for counting, measuring, estimating and problem solving. ● Appropriate tools and techniques can be selected to measure to a specified degree of accuracy. Those measurements can then be used in problem solving situations. ● Geometric concepts and relationships can be used with procedures to interpret, represent and solve problems. ● Statistics & probability can be utilized for data collection and analysis, and problem-solving situations.	● How are fundamental concepts of mathematics used to solve problems? ● How can understanding mathematics concepts make me a better consumer and citizen?

Unit Overviews

Unit Name	Unit Description	Unit Relevance Question	Instructional Standards	Assessed Standards
Unit 1: Algebra and Equations	Algebra and Equations focuses on simplifying algebraic expressions and solving equations and inequalities problems. For Simplify Algebraic Expressions, students will be able to perform operations on rational numbers and solve applied problems to show that their work is clear, organized and correct with the correct units. For Solve Equations and Inequalities, students will be able to solve equations in one variable, manipulate formulas and solve literal equations, solve applied problems, solve linear inequalities in one variable, and solve a system of equations by algebraic methods.	1. When can linear equations, inequalities or systems of equations be used to model, interpret and make informed decisions? 2. How can we use formulas in problem solving, and how does algebra help us understand the relation between quantities in formulas?	M.7.NS.A.1 M.A.REI.B.3 (F2Y) M.A.CED.A.4 (F2Y) M.A.REI.C.5 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3	M.7.NS.A.1 M.A.REI.B.3 (F2Y) M.A.CED.A.4 (F2Y) M.A.REI.C.5 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3
Unit 2: Percents	Percents focuses on solving ratio and proportional applications. Students will be able to solve ratio and proportion application problems, solve for missing quantities in percent problems, and solve financial problems involving percent (interest, finance charges, sale prices, credit transactions, etc.)	1. When can ratios and percentages be used for real life application, or utilized in the context of careers? 2. How does mathematical literacy support financial literacy?	M.7.RP.A.2 M.7.RP.A.3 SMP 4 SMP 6 SMP 2 SMP 3	M.7.RP.A.2 M.7.RP.A.3 SMP 4 SMP 6 SMP 2 SMP 3
Unit 3: Measurement	Measurement focuses on using measurement concepts both U.S. customary and metric to solve problems. Students will be able to convert measurements within the metric system and the U.S. customary system, convert between U.S and metric systems, convert area and volume measurements, express measurements with correct precision and accuracy, and estimate conversions without a calculator.	1. How do we convert between different units of measure or different measuring systems? 2. How do we select appropriate implements and units when problem solving involves measurement? 3. What level of precision and accuracy is needed in measurement?	M.N.Q.A.1 (F2Y) M.N.Q.A.3 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3	M.N.Q.A.1 (F2Y) M.N.Q.A.3 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3

Unit 4: Geometry	Geometry focuses on applying geometric concepts to solve problems. Students will be able to find perimeter and area of plane figures including composites, find volume and surface area of geometric solids including composites, solve problems involving similar and congruent triangles, use the Pythagorean Theorem to solve for the unknown side of a right triangle, and solve right triangles using trigonometric ratios.	1. How do you calculate area, perimeter and volume of composite shapes? 2. How do you find missing parts of a triangle?	M.7.G.B.6 M.G.SRT.B.5 (F2Y) M.G.SRT.C.8 (F2Y) M.N.Q.A.3 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3	M.7.G.B.6 M.G.SRT.B.5 (F2Y) M.G.SRT.C.8 (F2Y) M.N.Q.A.3 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3
Unit 5: Statistics	Statistics focuses on organizing data and summarizing results. Students will be able to organize data using grouped and ungrouped frequency distributions, find measures of central tendency for data sets, find measures of relative position, and find measures of dispersion for given data sets.	1. How do you organize and then analyze data sets? 2. What characteristics need to be considered when deciding how to measure and analyze data?	M.6.SP.A.3 M.SP.ID.A.1 (F2Y) M.SP.ID.A.2 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3	M.6.SP.A.3 M.SP.ID.A.1 (F2Y) M.SP.ID.A.2 (F2Y) SMP 4 SMP 6 SMP 2 SMP 3