

Sanborn Regional School District
Middle School Course Syllabus and Competencies

Course Title: **Integrated Math 2**

Grade: 7

Course Description:

This is the second course of a three-part program in middle school integrated mathematics called Mathscape. In this standards-based program, students will spiral through topics in number sense, data and statistics, algebra, and geometry. Students will be expected to think mathematically, to write and reflect on what they are learning in the classroom, and to use acquired math skills to interpret situations and solve real-world problems. The program consists of seven units each broken into several lessons. Each unit emphasizes one of the content strands, however, not in isolation of its connections to one or more of the other strands. For example, the unit on two-dimensional figures incorporates patterns, statistics, and probability. Each unit has a real life theme such as learning to be a “better” consumer.

Text/Major Resources:

MathScape: Seeing and Thinking Mathematically, Course 2, by Glencoe (2005)

Texas Instruments TI-73 Graphing Calculator Technology

Manipulatives

Math Lab

Other handouts and resources as provided by the teacher

Core Course Competencies:

1. Student will understand what is involved in being an educated consumer.
 - Compare the prices and sizes of products to determine which is the better buy
 - Write ratios to compare quantities
 - Use ratios to compare quantities
 - Use proportions to solve problems
 - Use percents, counting, and rounding skills in real-world budget problems
2. Student will understand the mathematics involved in testing and analyzing games of chance.
 - Explore the concept of chance
 - Use various graphs to show chance visually
 - Experiment with ways of changing games to improve your chances of scoring
 - Use outcome grids to determine the probability of outcomes in a game
 - Design, test, and present a simulation game
3. Student will be able to write a mathematical argument.
 - Use cubes to model addition, subtraction, multiplication, and division of signed numbers
 - Identify special cases of mathematical arguments in squares, cubes, and roots
 - Understand the basic properties of primes, patterns, and generalizations
4. Student will begin to understand what math is involved in designing and building a model home.
 - Be able to use scale and metric measurements to model the real world (such as designing a floor plan and creating a construction budget for it)
 - Be able to use nets to model three-dimensional structures
 - Understand how cost and design can be related when given a budget constraint
5. Student will begin to understand how math is used to describe and display relationships.
 - Be able to use variables to write equations and inequalities
 - Identify a list of rules for deciding when two expressions are equivalent
 - Understand the basic concepts of the coordinate plane
 - Understand the concept of a solution to a real-world situation
 - Use various methods to solve equations

6. Student will begin to understand how math is used to increase profits.
 - Understand the concepts of profit, income, and expense
 - Use spreadsheets to model data and make predictions
 - Understand the relationship between price and income, price and expense, and price and profit

7. Student will understand the basic relationships that exist among two-dimensional figures.
 - Estimate angle measures and draw and measure different types of angles
 - Understand the different ways to classify triangles
 - Understand the concept of a similar triangle
 - Use formulas to calculate angle relationships in polygons
 - Use transformations to determine congruence between polygons
 - Identify the basic properties of a circle
 - Understand the relationship between circumference and diameter

Essential Questions:

- What math is involved in being an educated consumer?
- What mathematics is involved in testing and analyzing games of chance?
- What is involved in writing a mathematical argument?
- What math is involved in designing and building a model home?
- How can math help you describe and display relationships?
- What math is used to increase profits?
- What relationships exist among two-dimensional figures?
- What are the different number systems and how are they related?
- How are algebraic expressions and equations useful to us?
- What are the similarities and differences between congruency and similarity?
- How can our knowledge of economics improve our buying habits?
- What problem solving strategies could you use to answer an open response question?

Instructional Practices

Lecture, Demonstrations, Research, Independent Learner, Reading, Writing, Education By Design, Essential Questions, Class Discussions, Cooperative Learning, Investigations, Constructed Response Questions, Test-Taking Strategies, Differentiated Instruction, and Other Practices as Needed

Assessment Strategies

Do Nows, Class Participation, Portfolios/Notebooks, Quizzes & Tests, Presentations, Projects & Labs, Homework & Classwork, Midterm & Final Exam, NWEA Map Goal Area Assessments, NECAP, Reading and Writing Assignments, Writing Portfolios & Journals, and Other Strategies as Needed.

SRMS

Mission and Expectations

The faculty and staff of the Sanborn Regional Middle School have a commitment to recognize and nurture each student's abilities within the context of the educational setting. Through reflection, reinforcement and challenge we anchor within the student a sense of his/her ability, success, and dignity.

We believe this goal is best served when a holistic approach is used.

Students

Recognize student ability
Nurture student ability
Help students recognize their strengths and needs
Help students recognize their success
Help students behave with dignity

Classroom Lessons and Activities

Ask students to reflect on their learning
Create experiences that reinforce skills
Offer opportunities for students to be challenged

Classroom Climate

Create a safe classroom climate
Develop clear and coherent expectations
Provide a consistent system for expectations, behavior, and assessment

Communications

Develop partnerships with community
Develop partnerships with parents

GRADEQUICK: Parents and students may access grades and course information on EDLINE:

<https://www.edline.net/index.page>

All student grades are updated every two weeks.