Sacred Heart School
Course Syllabus

Class Subject: Grade 8 Mathematics
Teacher Information: Amy Ward
Sacred Heart School: 860-445-0611
warda@sacredheartgroton.org

Course Description: Mathematics is important in school and throughout life. The ability to use math skills in the process of high-level thinking and problem solving situations is critical for students in their future. Through the study of number operations, data analysis, measurement, geometry, and algebra students will be able to apply these abilities in a way to benefit our community and the world.

General Course Objectives:

Number Operations: Students will:

- Use Order of Operations
- Relate and show relationships between decimals, fractions, and percents
- Interchange decimals, fractions, and percents
- Relate, compare, order, and determine equivalence of whole numbers, fractions, decimals, and percents
- Set up and solve problems using ratio and proportions
- Read and write Roman numerals
- Estimate square root, scientific notation, area and perimeter
- Add, Subtract, Multiply, and Divide integers
- Use compatible numbers to estimate answers
- Use Front-End estimate strategy and other rounding strategies
- Estimate averages
- Use distributive property to compute mentally
- Mentally compute solutions to simple equations

Data Analysis: Students will:

- Symbolize problems using algebraic expressions
- Explore spreadsheets for creating tables and charts
- Develop and interpret frequency tables

- Collect data and determine the most appropriate graph and scale to present information
- Explore permutations and combinations and their relationships

Measurement: Students will:

- Estimate, measure, and calculate weight and volume of various objects
- Demonstrate square and cube
- Convert, compare, and compute with common units in Customary and Metrics Systems

Geometry: Students will:

- Determine surface area and volume of solids
- Explore patterns resulting from reflections, rotations, translations of geometric figures
- Understand and identify point, ray, line, line segment, intersecting, parallel, and perpendicular lines
- Read and construct acute, obtuse, and right angles

Algebra: Students will:

- Use algebraic expressions with ratios, percents, proportions
- Solve linear equations with one variable
- Use and relate tables, graphs, and equations to solve problems
- Solve number sentences and use formulas
- Investigate solutions to pairs of simultaneous equations
- Solve and graph linear inequalities with one variable
- Interpret in words, problem situations described by linear inequalities
- Find distance between two points in the coordinate plane
- Factor mathematical expressions involving a common factor

Instructional Strategies: Include but are not limited to the following. Lecture, Discussions/Questioning, Viewing/Listening/Answering, Problem Finding/Solving, Data Collection, Collaborative Learning Groups, Independent Learning, Computer Applications

Assessments:

Class Discussions, Teacher Observation, Class Work, Homework, Tests/Quizzes, Projects/Oral Presentations,

Materials: The Mathematics Experience (8). Houghton Mifflin Company, Boston, 1994. (With Practice Booklet)
Supplemental Materials, Teacher Generated Materials