The Massachusetts Curriculum Framework for Mathematics forms the basis of mathematics study at Sherwood and Oak Middle Schools in Shrewsbury, MA. That document describes the mathematics content and practices for grades Pre-K through 12. In Shrewsbury, students and teachers at Sherwood and Oak Middle Schools utilize the resource, *Illustrative Mathematics (IM)*, to support teaching and learning. Below is a list of the Standards for Mathematical Practice and the Standards for Mathematical Content, as well as the report card standards for grades 5-8.

Massachusetts Framework for Mathematics, PK-12, 2017

<http://www.doe.mass.edu/frameworks/math/2017-06.pdf>

**Standards for Mathematical Practice**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Grade 5 Content Standards Overview**

Operations and Algebraic Thinking

Write and interpret numerical expressions.

Analyze patterns and relationships.

Number and Operations in Base Ten

Understand the place value system.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

Number and Operations—Fractions

Use equivalent fractions as a strategy to add and subtract fractions.

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

The Number System

Gain familiarity with concepts of positive and negative integers.

Measurement and Data

Convert like measurement units within a given measurement system.

Represent and interpret data.

Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems.

Classify two-dimensional figures into categories based on their properties.

**Sherwood Middle School Grade 5 Report Card Standards**

| Solves problems involving the volume of right rectangular prisms and solid figures composed of two right rectangular prisms. IM-U1 |
| --- |
| Interprets a fraction as division and solves problems that involve multiplication of a whole number and a fraction. IM-U2 |
| Uses models, multiplication, and division to solve problems with fractions. IM-U3 |
| Solves problems using place value patterns, models, and operations with whole numbers. IM-U4 |
| Solves problems using place value patterns, models, and operations with decimals. IM-U5 |
| Uses estimation and equivalence to solve problems involving addition and subtraction with fractions. IM-U6 |
| Classifies and represents figures on the coordinate plane. IM-U7 |

**Grade 6 Content Standards Overview**

Ratios and Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems.

The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

Compute fluently with multi-digit numbers and find common factors and multiples.

Apply and extend previous understandings of numbers to the system of rational numbers.

Expressions and Equations

Apply and extend previous understandings of arithmetic to algebraic expressions.

Reason about and solve one-variable equations and inequalities.

Represent and analyze quantitative relationships between dependent and independent variables.

Geometry

Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability

Develop understanding of statistical variability.

Summarize and describe distributions.

**Sherwood Middle School Grade 6 Report Card Standards**

| Solves problems involving area, surface area, and volume. IM-U1 |
| --- |
| Uses ratio and rate reasoning to analyze relationships and solve problems. IM-U2 |
| Solves problems using unit rates, measurement conversions, and percents. IM-U3 |
| Interprets, computes, and solves problems involving division of fractions. IM-U4 |
| Solves problems using estimation and arithmetic operations with decimals. IM-U5 |
| Evaluates expressions and solves one-variable equations. IM-U6 |
| Applies understanding of the number system to integers and other rational numbers. IM-U7 |
| Represents, describes, and analyzes data distributions. IM-U8 |

**Grade 7 Content Standards Overview**

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Expressions and Equations

Use properties of operations to generate equivalent expressions.

Solve real-world and mathematical problems using numerical and algebraic expressions and equations.

Geometry

Draw, construct and describe geometrical figures and describe the relationships between them.

Solve real-world and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability

Use random sampling to draw inferences about a population.

Draw informal comparative inferences about two populations.

Investigate chance processes and develop, use, and evaluate probability models.

**Oak Middle School Grade 7 Report Card Standards**

| Solves problems involving scaled copies and scale drawings of geometric figures. IM-U1 |
| --- |
| Represents and uses proportional relationships to solve problems. IM-U2 & U4 |
| Applies understanding of the number system to rational numbers. IM-U5 |
| Uses properties of operations, expressions, and equations to solve problems. IM-U6 |
| Applies geometric relationships to solve problems involving circumference, area, surface area, and volume. IM-U3 & U7 |
| Evaluates probability models and makes inferences based on data. IM-U8 |

**Grade 8 Content Standards Overview**

The Number System

Know that there are numbers that are not rational, and approximate them by rational numbers.

Expressions and Equations

Work with radicals and integer exponents.

Understand the connections between proportional relationships, lines, and linear equations.

Analyze and solve linear equations and pairs of simultaneous linear equations.

Functions

Define, evaluate, and compare functions. Use functions to model relationships between quantities.

Geometry

Understand congruence and similarity using physical models, transparencies, or geometry software.

Understand and apply the Pythagorean Theorem.

Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

Statistics and Probability

Investigate patterns of association in bivariate data.

Two mathematics courses are offered in grade 8: *Grade 8 Math* and *Grade 8 Honors Math*. The standards and units of instruction for both courses are the same, although the honors course moves at a faster pace and, therefore, incorporates a range of extension topics within each standard.

**Oak Middle School Grade 8 Report Card Standards**

| Demonstrates an understanding of rotations, reflections, and translations and congruence of 2-D figures. IM-U1 |
| --- |
| Demonstrates an understanding of dilations and similarity of 2-D figures. IM-U2 |
| Makes connections among proportional relationships, lines, and linear equations. IM-U3 |
| Analyzes and solves linear equations and systems of linear equations. IM-U4 |
| Uses functions to model and describe relationships and solve problems. IM-U5 |
| Analyzes data involving two-variable relationships. IM-U6 |
| Simplifies exponential expressions and solves problems with scientific notation. IM-U7 |
| Understands and applies Pythagorean Theorem. IM-U8 |

**Report Card Performance Levels**

| Advanced  (4) | Proficient  (3) | Needs Improvement  (2) | Warning  (1) |
| --- | --- | --- | --- |
| Demonstrates a comprehensive and in-depth understanding of rigorous subject matter. | Demonstrates a solid understanding of challenging subject matter. | Demonstrates a partial understanding of subject matter. | Demonstrates a minimal understanding of subject matter. |
| Provides sophisticated solutions to complex problems. | Solves a wide variety of problems. | Solves some simple problems. | Does not solve simple problems. |