

# GRADE 7 MATH SYLLABUS

## **Text and Support Materials:**

Scott Foresman Addison Wesley- *Middle School Math Course 1 & 2*

Creative Publications- *The Problem Solver: Activities for Learning Problem Solving Strategies*

Dr. Henry Borenson and Associates- *The Hands-On Equations Learning System*

Grow Publications- *Arithmetic Daily Development 7*

New York Times- *Up Front Magazine*

## ***TRIMESTER I SEQUENCE***

### STAR MATH TEST 1- BASELINE TEST

### HANDS-ON EQUATIONS LESSONS 1-15

#### Chapter 2 FORMULAS

8 lessons, 2 reviews, 1 test

Essential Learning Objectives:

- Formulas and Variables
- Order of Operations
- Formulas and Tables
- Inverse Operations
- Translating Words to Expressions
- Solving Addition and Subtracting Equations
- Solving Multiplication and Division Equations
- Problem Solving with Two-Step Equations

#### Chapter 3 NUMBER SENSE: DECIMALS AND FRACTIONS

10 lessons, 3 reviews, 1 test

Essential Learning Objectives:

- Express Ratios as Fractions
- Determine Equivalent Fractions
- Model, Read, and Write Decimals Through the One-Millionths
- Compare and Order Decimals
- Write a Fraction in Lowest Terms
- Recognize the Difference Between Prime and Composite Numbers
- Convert Between Fractions and Decimals
- Compare and Order Fractions
- Find the GCF and LCM of Two Numbers
- Use Factor Trees (Prime Factorization)
- Add, Subtract, Multiply and Divide Decimals

#### Chapter 4 OPERATIONS WITH FRACTIONS

6 lessons, 3 reviews, 1 test

Essential Learning Objectives:

- Write a Fraction in Lowest Terms
- Convert Between Improper and Mixed Fractions
- Add, Subtract, Multiply, and Divide Fractions (Proper, Improper or Mixed)

### Chapter 9 INTEGERS

7 lessons, 3 reviews, 1 test

Essential Learning Objectives:

- Graph an Equation Using Positive and Negative Integers (Number Line)
- Use Appropriate Strategies
- Recognize the Difference Between Prime and Composite Numbers
- Find the Prime Factorization of a Number
- Find the Least Common Multiple of Two Numbers
- Use Factor Trees
- Know the Rules of Divisibility
- Graph on Equation Using Positive and Negative Integers (Number Line)
- Graph Ordered Pairs of Numbers

### PROBLEM SOLVER

Use and Make a Table-3 lessons

Organize List-3 lessons

Act Out/Use Objects-2 lessons

### DAILY PRACTICE AND/OR REVIEW

A.D.D. (Arithmetic Daily Development) Per Day

Problem of the Day

Vocabulary-Per Lesson

You Will Learn-Per Chapter

Examples-Per Lesson

Key Facts-Per Lesson

### PRE W.A.S.L. INDICATOR TEST 1

Mid-trimester

## **TRIMESTER 2**

### STAR MATH TEST 2-PROGRESS TOWARDS MASTERY OF 7<sup>TH</sup> GRADE CONCEPTS AND SKILLS

### Chapter 5 GEOMETRY AND MEASUREMENT

10 lessons, 3 reviews, 1 test

Essential Learning Objectives:

- Find the Area of Circles, Triangles

- Predicts Perimeters, Areas and Volumes of Objects with Different Dimensions
- Develop an Appreciation of Geometry as a Means of Describing the Physical World
- Measures Angles
- Recognizes Parallel Lines and Their Properties
- Classify Triangles
- Classify Quadrilaterals
- Find the Perimeter and Area of Triangles and Quadrilaterals
- Use the Pythagorean Theorem
- Construct and Bisect Lines and Angles
- Identify Interior, Exterior, and Congruent Angles

### Chapter 10 The Patterns of Algebra: Equations and Graphs

\*As relates to 7<sup>th</sup> grade Essential Academic Learnings

12 lessons, 3 reviews, 1 test

Essential Learning Objectives:

- Quantities, Constants, and Variables
- Relating Graphs to Stories
- Tables and Expressions
- Understanding and Writing Equations
- Equations and Graphs
- Solving Equations Using Tables
- Solving Equations Using Graphs
- Relating Equations and Inequalities
- Integer Addition and Subtraction Equations
- Integer Multiplication and Division Equations
- Solving Two-Step Equations
- Problem Solving with Integer Equations

### Chapter 11 SOLIDS, CIRCLES, AND TRANSFORMATIONS

12 lessons, 4 reviews, 1 test

Essential Learning Objectives:

- Know and Use the Formula for Finding the Volume of Simple Geometric Shapes
- Find the Area of Circles and Triangles
- Predicts Perimeters, Areas, and Volumes of Objects with Different Dimensions
- Use a Protractor and Compass
- Copy and Construct Three-Dimensional Geometric Shapes
- Classify 2-3 Dimensional Shapes in Different Ways According to Their Attributes
- Develop an Appreciation of Geometry as a Means of Describing the Physical World

- Graph Transformations on a Coordinate Grid
- Classify Geometric Figures According to Line and Rotational Symmetry
- Construct Transformations of Plane Figures
- Makes Sketches of Three-Dimensional Shapes

### PROBLEM SOLVER

Picture/Diagrams-2 lessons

Patterns-4 lessons

Guess and Check-2 lessons

### DAILY PRACTICE AND/OR REVIEW

A.D.D. (Arithmetic Daily Development)-Per Day

Problem of the Day

Vocabulary-Per Lesson

You Will Learn-Per Lesson

Examples-Per Lesson

Key Facts-Per Lesson

### PRE W.A.S.L. INDICATOR TEST 2

Mid-trimester

## **TRIMESTER 3**

### STAR MATH TEST 3-PROGRESS TOWARDS MASTERY OF 7<sup>TH</sup> GRADE CONCEPTS AND SKILLS

#### Chapter 12 COUNTING AND PRABABILITY

7 LESSONS, 3 REVIEWS, 1 TEST

Essential Learning Objectives:

- Find Probability Using Area Models
- Understand and Use Permutations Appropriate to Determine the Number of Possible Outcomes
- Develop and Use Rules for Computing Permutations and Combinations
- Use Vocabulary of Probability and Statistics
- Make and Test Inferences Based on Analysis of Data
- Justify Conclusions by Use of Examples From Data
- Make and Test Inferences
- Makes Inferences Based on Previous Knowledge

#### Chapter 6 RATIOS, RATES, AND PROPORTIONS

8 lessons, 3 reviews, 1 test

Essential Learning Objectives:

- Express Ratios as Fractions and Vice Versa
- Use Equivalent Ratios to Write Proportions

- Use Cross Products to Check Whether Two Ratios Form a Proportion
- Apply Estimating Strategies to Real Life Situations
- Use Rate Formulas to Solve Mathematical Problems

### Chapter 8 PERCENTS

12 lessons, 4 reviews, 1 test

Essential Learning Objectives:

- Find the Percent of a Number
- Express Percents Greater Than 100% and Less Than 1% as Fractions and Decimals
- Explains Relationship Between: Fraction, Ratio, and Percent

### PROBLEM SOLVER

Logical Reasoning-3 lessons

Make It Simple-2 lessons

Brainstorming-1 lesson

Work Backward-2 lessons

### DAILY PRACTICE AND/OR REVIEW

A.D.D. (Arithmetic Daily Development)-Per Day

Problem of the Day

Vocabulary-Per Lesson

You Will Learn-Per Lesson

Examples-Per Lesson

Key Facts-Per Lesson

### PRE W.A.S.L. INDICATOR TEST 3

Early trimester

**[April 18-May 6 W.A.S.L. Testing Window Grades 4, 5, 7, 8, 10](#)**

**STAR MATH TEST 4-END OF YEAR TEST**