

Necessary skills for students entering to 7/8 compacted

Students enrolling in 7/8 compacted should have mastered the basic math facts with quick recall.

They should also be proficient with the following skills:

- adding, subtracting, multiplying, and dividing fractions without a calculator
- adding, subtracting, multiplying, and dividing integers without a calculator
- the order of operations including exponents
- writing and graphing inequalities
- linear relationships in the form of tables, graphs, equations, and word problems including concepts like rate tables, functions, rate of change, and independent and dependent variables

Content covered in 6/7 compacted:

Ratios and Proportional Relationships

- Understand ratio concepts and use ratio reasoning to solve problems.
- Analyze proportional relationships and use them to solve real-world and mathematical 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.
- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide 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

- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability

- Develop understanding of statistical variability.
- Summarize and describe distributions.
- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
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You can check for on-line resources or go to a bookstore and get a workbook or two. Some on-line resources include

- www.khanacademy.org
- www.youtube.com/user/MyWhyU
- www.brightstorm.com/math (may cost money after a certain number of uses)
- www.ixl.com/math (may cost money after a certain number of uses)
- You may or may not be able to access the Holt textbook on-line over the summer.

Student Attributes for Math Success

Demonstrates intellectual engagement.

- Perceives mathematics as a way of understanding — a view that mathematics must make sense, and is not a sequence of algorithms to be memorized and applied.
- Actively explores new ideas, posing questions about their meaning, significance, and implications.
- Recognizes patterns—as well as deviations—from previously learned patterns in data, diagrams, symbols, and words.
- Appreciates that abstraction and generalization are important sources of the power of mathematics.
- Is willing to take risks and be challenged as part of the learning process.
- Contributes to and benefits from group problem-solving activities.

Takes responsibility for own learning.

- Attends nearly every class session and when absent, seeks ways to learn the material covered in class.
- Conscientiously prepares work assigned for class.
- Examines and learns from his or her errors and seeks help when needed.
- Takes advantage of available resources — class time, notes, textbook, assignments, tutoring services, supplemental materials.

Perseveres when faced with time-consuming or complex tasks.

- Sets aside the time necessary to be successful.
- Is willing to work on problems that require time and thought, particularly problems that cannot be solved by mimicking a previously seen example.
- Successfully completes tasks that require organizing and implementing multiple steps, concepts, or techniques.
- Recognizes when an approach is unproductive and makes logical modifications to that approach or switches to another approach.
- Is convinced that effort is an important component of success in mathematics.

Pays attention to detail.

- Correctly follows all parts of oral and written directions without needing additional reminders.
- Makes few notational errors, e.g., accidentally changing digits, dropping or altering algebra symbols, incorrectly positioning points on a grid, etc.