

# Integrated Math A

## Course Preparedness Profile & Expectations

This course is designed for students who have a strong understanding of 6<sup>th</sup> grade standards.

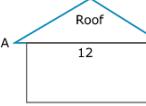
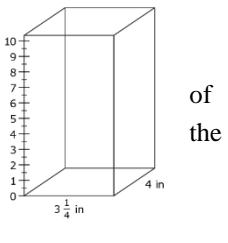
Below are some guidelines for choosing the best course for an individual student. This is *not* a placement test and it should *not* be used as the only criteria for making placement decisions.

### Student Background

Students entering **Integrated Math A** should *already* have a strong understanding of the following concepts:

- Connecting ratio and rate to whole number multiplication and division
- Using concepts of ratio and rate to solve problems.
- Operations with positive and negative rational numbers
- Understand the use of variables in mathematical expressions and equations.
- Writing, interpreting, and using expressions, equations, and inequalities that correspond to given situations and solve problems. Volume
- Represent and analyze quantitative relationships between dependent and independent variables.
- Develop understanding of statistical variability.
- Summarize and describe distributions.
- Describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data was collected
- Finding common factors and multiples.
- Solve real-world problems involving area, surface area, and volume.

Students entering **Integrated Math A** should also be able to solve problems such as

<p><u>Ratio Problem</u></p> <p>A landscape designer is planning the layout of trees in a park. There are two types of trees: elm and pine. There should be at least 16 total trees but no more than 30. The ratio of elm trees to pine trees will be 3:2. Draw a model to show a possible number of each type of tree.</p>	<p><u>Coordinate Geometry Problem</u></p> <p>Jose is transferring this drawing of a triangular roof to a coordinate plane. He plots point A at (-5, 2) and point B at (1, 6). The length of the base of the roof is 12 units. What are the coordinates of point C?</p> 
<p><u>Operations with Numbers Problem</u></p> <p>Sarah claims that any fraction multiplied by <math>\frac{2}{3}</math> will always be less than <math>\frac{2}{3}</math>.</p> <p>A. Give an example to support Sarah's claim. B. Give an example that does not support Sarah's claim.</p>	<p><u>Area Problem</u></p> <p>The area of a piece of land that is in the shape of a triangle is <math>\frac{1}{6}</math> square mile. One dimension of the piece of land is <math>\frac{2}{3}</math> mile. What is the other dimension of the land?</p>
<p><u>Problem</u></p> <p>Tanya fills the prism shown with <math>110\frac{1}{2}</math> in<sup>3</sup> liquid. What is the height of the liquid in the prism?</p> 	<p><u>Statistics Problem</u></p> <p>Several questions are shown. Which question(s) expects variability in the data related to it?</p> <p>A. How old is the athlete? B. How many pets does each 6<sup>th</sup> grader have? C. How many 6<sup>th</sup> graders attend our school? D. How old are the animals at the zoo? E. How many baseball cards does the boy have?</p>

## **Course Content and Expectations**

In **Integrated Math A**, students will learn concepts such as:

- Use their understanding of ratios and proportionality to solve scale drawings and a wide variety of percent problems.
- Analyze proportional relationships and use them to solve real world mathematical problems.
- Operations with positive and negative rational numbers and applying them to everyday contexts.
- Approximate irrational by rational numbers.
- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life problems involving angle measure, area, surface area, and volume.
- Solve real-life problems involving volume of cylinders, cones, and spheres.
- Use random sampling to draw inferences about a population and draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

As in all math courses offered at SDUHSD, students are aware of and make use of all **Standards for Mathematical Practices**:

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.

Grades will be calculated within the following guidelines:

- Assessments: 70-80%
- Assignments: 20 – 30%

Students will be expected to work collaboratively as well as individually. On a regular basis, classes will include:

- Group problem solving followed by group presentations.
- Open ended problems that are applications of the content being covered.
- Challenge problems, which may consist of detailed diagrams and a single page write-up.