

Integrated Math B Honors

Course Preparedness Profile & Expectations

This course is designed for students who have mastered 7th grade standards, earning a “B” or higher in Math A Honors. Math B Honors is a challenging course, covering all Math B standards in greater depth and rigor and is intended for students who excel in math.

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 B Honors** should easily grasp higher level concepts and embrace rigorous curriculum. Students should *already* have mastered the following concepts:

- Analyze proportional relationships and use them to solve real world mathematical problems.
- Operations with positive and negative rational numbers.
- 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.

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

<p><u>Proportional Reasoning Problem</u></p> <p>Tim makes 80 gallons of paint by mixing 48 gallons of green paint with 32 gallons of blue paint. What part of every gallon is from green paint?</p>	<p><u>Numerical and Algebraic Equations</u></p> <p>Tom bought several appliances and a new car. He paid a sales tax of 7.5% on the appliances and a tax of 6.5% on the car. Before these taxes, the appliances and car together cost \$15,200. If he paid a total of \$1015 in taxes, how much did the car cost?</p>
<p><u>Probability Problem</u></p> <p>Given two dice, explain why $P(\text{rolling a 1, and then 6}) = \frac{1}{36}$ but $P(\text{rolling a sum of 7}) = \frac{1}{6}$</p>	<p><u>Operations with Rational Expressions</u></p> <p>Alex claims that when $\frac{1}{4}$ is divided by a fraction, the result will always be greater than $\frac{1}{4}$.</p> <p>A. Create an expression that supports Alex’s claim B. Create an expression that contradicts Alex’s claim.</p>
<p><u>Geometry Problem</u></p> <p>The length of a rectangle is 10 m greater than twice its width. If the lengths were doubled and the widths were halved, the perimeter of the new rectangle would be 80 m more than the perimeter of the original rectangle. What are the dimensions of the original rectangle?</p>	

Course Content and Expectations

In **Integrated Math B Honors** students will go deeper into grade level standards. Student assignments will contain more critical thinking and have a higher depth of knowledge and more performance tasks. Students will learn concepts such as:

- Work with radicals and integer exponents
- Understand the connection between proportional relationships, lines, and linear equations.
- Solve linear equations as well as apply graphical and algebraic methods to analyze and solve systems of linear equations in two variables.
- Recognize equations for proportions as special linear equations and understand the relationship between the constant of proportionality and the slope.
- Use linear equations to describe the association between two quantities in bivariate data and to interpret components of the model (i.e. slope and y-intercept) in terms of the situation.
- Solve systems of equations and relate the systems to pairs of lines in the plane.
- Define, evaluate, and compare functions, and use them to model relationships among quantities.
- Understand how figures behave under translations, reflections, dilations, and rotations.
- Understand congruence and similarity to describe and analyze two-dimensional figures and to solve problems.
- Relates angles and similar triangles created when a transversal cuts parallel lines.
- Understand and apply the Pythagorean Theorem
- Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

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.