

Integrated Math A Essentials

Course Preparedness Profile & Expectations

This course is designed for students who have had exposure to, but have yet to develop an understanding of all 6th grade standards.

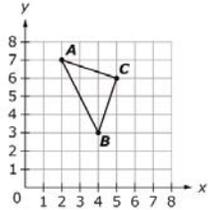
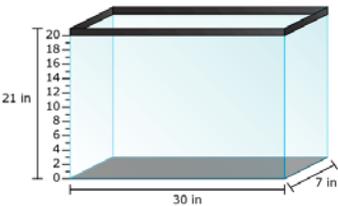
Below are some guidelines for choosing the best course for an individual student. This is *not* a placement test and it should *not* be used as the only criteria for making placement decisions.

Student Background

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

- Write and interpret numerical expressions
- Analyze patterns and relationships
- Understand the place value system
- Perform operations with multi-digit whole numbers and with decimals to hundredths.
- Use equivalent fractions as a strategy to add and subtract fractions
- Understand multiplication and division of fractions
- Convert like measurement units within a given measurement system
- Represent and interpret data.
- Understand concepts of volume and relate volume to multiplication and addition.
- Select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume.
- Graph points on the coordinate plane to solve real-world and mathematical problems.
- Classify two-dimensional figures into categories based on their properties.

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

<p><u>Operations with Decimals Problem</u></p> <p>Connor is buying tickets to a play. The play he and his friends want to see costs \$4.75 per ticket. Connor has \$26.00 in his pocket. What is the greatest number of tickets Connor can buy?</p>	<p><u>Coordinate Geometry Problem</u></p>  <p>What are the coordinates of points A, B, and C?</p>
<p><u>Operations with Fractions Problem</u></p> <p>A baker used 12 cups of batter to make muffins. It took $\frac{2}{3}$ cup of batter to make 1 muffin. How many muffins did the baker make?</p>	<p><u>Geometry Problem</u></p> <p>James folds a square piece of paper in half to create a rectangle with a perimeter of 12 inches. How long is each side of the original square piece of paper?</p>
<p><u>Volume Problem</u></p> <p>Tanya fills the tank shown with 1050 cubic inches of dirt. What is the height of the dirt in the tank?</p> 	<p><u>Numerical Expression Problem</u></p> <p>A. Tyler is 8 years old. His sister Olivia is 4 years less than twice his age. Write a numerical expression for Olivia's age.</p>

Course Content and Expectations

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

- 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
- Writing and interpreting and using expressions, equations, and inequalities
- Statistical thinking representing and analyzing quantitative relationships between dependent and independent
- Developing an understanding of statistical variability.
- Describing distributions
- Finding common factors and multiples
- Solve real-world problems involving area, surface area, and volume.
- Analyzing proportional relationships
- Drawing, constructing and describing geometrical figures
- Find angle measure.
- Evaluating 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.

This course is a below grade level course which will have an individualized remediation component. Throughout the course, students will be expected to work collaboratively while problem solving and working on open ended problems.

Integrated Math A

Course Preparedness Profile & Expectations

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

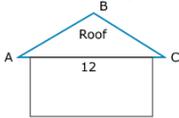
Below are some guidelines for choosing the best course for an individual student. This is *not* a placement test and it should *not* be used as the only criteria for making placement decisions.

Student Background

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

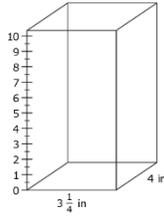
- Connecting ratio and rate to whole number multiplication and division
- Using concepts of ratio and rate to solve problems.
- Operations with positive and negative rational numbers
- Understand the use of variables in mathematical expressions and equations.
- Writing, interpreting, and using expressions, 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 package of party balloons has 3 red, 6 green, and 6 purple balloons.</p> <ol style="list-style-type: none"> Draw a model to represent the package of party balloons. Find the simplified ratio of red: green: purple balloons. If the ratio of red: green: purple is always the same and there are 120 balloons in a package, how many of each color do you expect? Explain. 	<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>What fraction makes the equation true.</p> $- \div \frac{2}{3} = \frac{3}{4}$	<p><u>Area Problem</u></p> <p>The area of a piece of land that is in the shape of a triangle is $\frac{1}{6}$ square mile. One dimension of the piece of land is $\frac{2}{3}$ mile. What is the other dimension of the land?</p>

Problem

Tanya fills the prism shown with $110\frac{1}{2} \text{ in}^3$ liquid. What is the height of the liquid in prism?



of
the

Statistics Problem

Several questions are shown. Which question(s) expects variability in the data related to it?

- A. How old is the athlete?
- B. How many pets does each 6th grader have?
- C. How many 6th graders attend our school?
- D. How old are the animals at the zoo?
- E. How many baseball cards does the boy have?

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.

Integrated Math A Honors

Course Preparedness Profile & Expectations

This course is designed for students who have mastered 6th grade standards with a “B” grade or higher. Math A Honors is a challenging course, covering all Math A 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 A Honors** should easily grasp higher level concepts and embrace rigorous curriculum. Students should *already* have mastered 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.
- 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 Honors** 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>The coordinates of this parallelogram are given.</p>  <p>Determine if each statement is True or False.</p> <table border="1" data-bbox="885 1480 1404 1690"> <thead> <tr> <th></th> <th>True</th> <th>False</th> </tr> </thead> <tbody> <tr> <td>The length of the longer side is $p - 2$.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>The length of the longer side is $n + 1$.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>The short side is 4 units in length.</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>$n = 5$</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>$m > n$</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>$p = 2$</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		True	False	The length of the longer side is $p - 2$.	<input type="checkbox"/>	<input type="checkbox"/>	The length of the longer side is $n + 1$.	<input type="checkbox"/>	<input type="checkbox"/>	The short side is 4 units in length.	<input type="checkbox"/>	<input type="checkbox"/>	$n = 5$	<input type="checkbox"/>	<input type="checkbox"/>	$m > n$	<input type="checkbox"/>	<input type="checkbox"/>	$p = 2$	<input type="checkbox"/>	<input type="checkbox"/>
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<p><u>Operations with Numbers Problem</u></p> <p>Sarah claims that any fraction multiplied by $\frac{2}{3}$ will always be less than $\frac{2}{3}$.</p> <p>A. Give an example to support Sarah’s claim.</p> <p>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 $\frac{1}{6}$ square mile. One dimension of the piece of land is $\frac{2}{3}$ mile. What is the other dimension of the land?</p>																					

Volume Problem

Micah constructs a rectangular prism with a volume of 360 cubic units. The height of his prism is 10 units. Micah claims that the base of the prism must be a square. Draw a diagram and explain why Micah's claim is incorrect.

Statistics Problem

Several questions are shown. Which question(s) expects variability in the data related to it?

- A. How old is the athlete?
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Course Content and Expectations

In **Integrated Math A 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:

- Use their understanding of ratios and proportionality to solve scale drawings and a wide variety of percent problems.
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