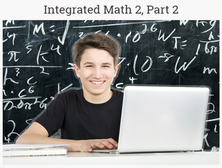
Integrated Math 2, Part 2



How to Take This Course

Complete all the quizzes and the assignment in each unit. Once the quizzes for a unit are complete, you will have access to the unit test. We recommend you complete the unit assignment before you attempt the unit test, the assignment will help you prepare. You will have access to the final when all unit tests are complete and your assignments are graded.

Allow 2-3 days for an assignment to be graded. Read the full course instructions to understand the course grading.

- Instructions for the Course
- How This Course Works & Suggested Timeline
- Submitting Your Assignments
- Ask The Teacher

Unit 1: Quadrilateral and Other Polygons

In this unit you will:

- Explore the sum of interior and exterior polygons. Use Algebra to solve problems related to angles.
- Learn the relationships between opposite sides and angles as well as diagonals of a parallelogram.
- Learn how to prove a quadrilateral is a parallelogram using algebra, properties and coordinate geometry.
- Learn what special characteristics make a parallelogram a square, rhombus, or rectangle.
- Learn to determine if a quadrilateral is a trapezoid and a kite by examining diagonals, opposite sides, and opposite angles.

- 1.1 Angles of Polygons
  - Quiz 1.1
- 1.2 Properties of Parallelograms
  - Quiz 1.2
- 1.3 Proving Quadrilaterals as Parallelograms
  - Quiz 1.3
- 1.4 Properties of Special Parallelograms
  - Quiz 1.4
- 1.5 Conditions for Special Parallelograms
  - Quiz 1.5
- 1.6 Trapezoids and Kites
  - Quiz 1.6
- Unit 1 Assignment: Classifying Parallelograms

Unit 2: Triangle Similarity

In this unit you will:

- Learn how a dilation is a transformation that creates similar figures in the coordinate plane.
- Extend the understanding of similarity to composite transformations which include dilations, translations, rotations and reflections.
- Explore the definition of similar polygons not on the coordinate plane.
- Learn to prove triangles are similar using the AA, SSS, and SAS similarity theorems, as well as apply these principles to determine angle and side measurements.
- Learn to use proportions to find the lengths of similar triangles.

- 2.1 Dilations
  - Quiz 2.1
- 2.2 Similarity and Transformations
  - Quiz 2.2
- 2.3 Similar Polygons
  - Quiz 2.3
- 2.4 Proving Similar Triangles by AA
  - Quiz 2.4
- 2.5 Proving Triangles by SSS and SAS
  - Quiz 2.5
- 2.6 Proportionality Theorems
  - Quiz 2.6
- Unit 2 Assignment: Two-dimensional Drawing of a Room

Unit 3: Right Triangles and Trigonometry

In this unit you will:

- Explore the Pythagorean Theorem which defines the relationship between the legs and hypotenuse of a right triangle.
- Apply the Pythagorean Theorem to special 30-60-90° and 45-45-90° triangles to determine a relationship between the legs and the hypotenuse of these special triangles.
- Learn more proportional theorems that relate right triangles within right triangles and the geometric mean.
- Learn the trigonometric ratios of sine, cosine, and tangent.
- Use all the above concepts to find the angle measurements and side lengths of any right triangle.

- 3.1 Pythagorean Theorem
  - Quiz 3.1
- 3.2 Special Right Triangles
  - Quiz 3.2
- 3.3 Similar Right Triangles (Geometric Mean)
  - Quiz 3.3
- 3.4 The Sine and Cosine Ratios
  - Quiz 3.4
- 3.5 The Tangent Ratio
  - Quiz 3.5
- 3.6 Solving Right Triangles
  - Quiz 3.6
- Unit 3 Assignment: Calculating Length

Unit 4: Circles

In this unit you will:

- Learn circle vocabulary such as secant, tangent, and chord; Learn the relationship between secants and radii.
- Learn the relationship between central angles, arc measures and congruent chords and arcs.
- Learn to compute the area of a sector and the length of an arc in a circle.
- Learn the definition and the properties of an inscribed angle.
- Learn the relationship between the angles of intersecting chords and secants and the proportional lengths.
- Learn to write the equation of a circle in a coordinate plane.

- 4.1 Introduction to Circles and Tangents
  - Quiz 4.1
- 4.2 Arcs and Chords
  - Quiz 4.2
- 4.3 Sector Area and Arc Length
  - Quiz 4.3
- 4.4 Inscribed Angles
  - Quiz 4.4
- 4.5 Angle Relationships in Circles
  - Quiz 4.5
- 4.6 Segment Relationships in Circles
  - Quiz 4.6
- 4.7 Coordinate Circles
  - Quiz 4.7
- Unit 4 Assignment: Area of a Sector of a Circle

Unit 5: Volume

In this unit you will:

- Learn to find the area and circumference of a circle as well as use this information to find radius and diameter.
- Learn to find the area of any polygon using traditional methods as well as trigonometry.
- Learn to find the volume and surface area of a prism and cylinder and apply their formulas in real world scenarios.
- Learn the relationship between a pyramid and a cube, to find the formula for volume and surface area of pyramids with square, triangular and other bases.
- Find the volume and surface area of a cone and a sphere.

- 5.1 Area of a Circle
  - Quiz 5.1
- 5.2 Areas of Regular Polygons
  - Quiz 5.2
- 5.3 Surface Area and Volume of Prisms and Cylinders
  - Quiz 5.3
- 5.4 Volume and Surface Area of Pyramids
  - Quiz 5.4
- 5.5 Surface Areas and Volumes of Cones
  - Quiz 5.5
- 5.6 Surface Areas and Volumes of Spheres
  - Quiz 5.6
- Unit 5 Assignment: Exploring Volume - Messy Meatballs

Unit 6: Understanding Probability

In this unit you will:

- Learn to identify a sample space and population.
- Learn to count outcomes of a sample space using permutations and combinations.
- Compare and contrast independent and dependent events.
- Learn to find probability for two dependent overlapping events.
- Learn to distinguish between overlapping and disjoint events.
- Apply properties of probability to determine geometric outcomes.

- 6.1 Sample Spaces and Probability
  - Quiz 6.1
- 6.2 Permutations and Combinations
  - Quiz 6.2
- 6.3 Independent and Dependent Events
  - Quiz 6.3
- 6.4 Two Way Tables and Probability
  - Quiz 6.4
- 6.5 Probability of Disjoint and Overlapping Events
  - Quiz 6.5
- 6.6 Geometric Probability
  - Quiz 6.6
- Unit 6 Assignment: Carnival Games - Probability

Final Exam

Once you have completed all of the unit tests and all of your assignments have been graded, the final exam will become visible.

Warning: You have only ONE attempt at the final.

Are you ready to take the final? We highly recommend you take the practice final first and if you are weak in any area, review the relevant course material again. You have unlimited attempts at the practice final, it will help you to prepare.

Good Luck!

- Practice Final

Certificate of Completion

The "Certificate" and "Request a Course Completion Record" links below are not active, they cannot be accessed until you have completed the final. Upon satisfying this requirement, the links will become active and you can use them.

Before you go, we would appreciate your opinion on the course, please take 1 minute to complete the feedback form. We hope you enjoyed this course!

- Course Feedback

Thank you for taking this course! Let us know what you think about it.

- Request a Course Completion Record

If you need SVHS to send proof of your course completion directly to your school, complete this form.

If you need a hard copy mailed to your school please make a note of this on the form, use the field 'Instructions for SVHS'. Don't forget to provide the mailing address of your school.

Restricted Not available unless: The activity **Final Exam** is marked complete

- Certificate of Completion

Restricted Not available unless: The activity **Final Exam** is marked complete