



## Mathematics eLearning Guide Week 2

### Algebra I: Exponential Functions

- Graph exponential functions
- Write the equation of exponential functions based on graph
- Understand exponential growth and decay

### Geometry: Volume & Surface Area

- Calculate the surface area of pyramids and cones using formula
- Calculate the volume of pyramids and cones using formula

### MMA: Personal Financial Planning

- Make responsible financial decisions based on real-life situations

### Algebra II: Logarithmic Function

- Understand how to solve logarithmic equations
- Understand how to solve exponential equations using logs

### preCalculus: Conic Sections

- Graph and write the equations for hyperbolas
- Identify conic sections by general and standard equations

### AP Courses: Calculus AB, Calculus BC, Statistic

- Content Support from Khan Academy [Calculus AB](#), [Calculus BC](#), [Statistics](#)
- AP Resources from College Board: [Calculus AB](#), [Calculus BC](#), [Statistics](#)
- *Schmoop* AP Exam Test Prep [Calculus AB](#), [Calculus BC](#), [Statistics](#),  
[Log in and test prep directions for Schmoop](#)

# Mathematics eLearning Guide Week 2

## Algebra 1

### Objectives

- Students will be able to graph and write exponential functions.
- Students will be able to apply exponential functions to real-world situations.

**Note: Tasks are not intended to be graded. This work is to support understanding of the subject area.**

### For Parents

- Exponential functions are introduced in Algebra I, and they are further studied in Algebra 2, preCalculus, and Calculus. These functions are used to model populations, carbon date artifacts, help coroners determine the time of death, compute investments, as well as many other applications.

### For Students

#### Exponential Function

- [Task 1](#) Exponential Function Graph
- [Task 2](#) Writing the Exponential Equation from the Graph
- [Task 3](#) Based on Khan Academy Lessons 1 & 2 (Worksheet & Answer Key)

#### Exponential Growth and Decay

- [Task 1](#) Exponential Decay Intro
- [Task 2](#) Exponential Growth and Decay Worksheet (Practice with Answer Key)

### Resources

- [Desmos Graphing Calculator](#)
- [Math is fun](#)
- [Openstax](#)
- [IXL](#)

# Mathematics eLearning Guide Week 2

## Geometry

### Objectives

- Students will use formulas to calculate the surface area of pyramids and cones.
- Students will use formulas to calculate the volume of pyramids and cones.

**Note: Tasks are not intended to be graded. This work is to support understanding of the subject area.**

### For Parents

- Your students will be building on skills learned in 8th grade to find the surface area and volume of solid shapes (pyramids and cones). The surface area is the area that describes the material that will be used to cover a geometric solid. The volume is a measure of how much a figure can hold and is measured in cubic units.

### For Students

#### Pyramids

- [Task 1](#) Surface Area & Volume of Pyramids
- [Task 2](#) Mathopolis Questions (online practice)

#### Cones

- [Task 1](#) Surface Area & Volume of Pyramids
- [Task 2](#) Mathopolis Questions (online practice)

### Resources

- [Math is fun](#)
- [IXL](#)

# Mathematics eLearning Guide Week 2

## MMA

### Objectives

- Students will read about responsible financial behaviors and match these behaviors with given situations.
- The students will be able to evaluate various financial situations and make financial decisions.

**Note: Tasks are not intended to be graded. This work is to support understanding of the subject area.**

### For Parents

- Your students are presented with real-life situations in which young people have to make important decisions about their future. Students use an online tool to examine how the cost of living affects students' financial situations.

### For Students

#### Financially Responsible Decision

- [Task 1](#) Responsible Financial Behavior (notes)
- [Task 2](#) Responsible Financial Behavior (activity) ( [Answer Key](#) )

### Resources

- [Unemployment rates and earnings by educational attainment](#)
- [Family Budge](#)
- [Math is Fun](#)

# Mathematics eLearning Guide Week 2

## ALGEBRA II

### Objectives

- Students will be able to solve logarithmic equations using properties of logs.
- Students will be able to evaluate logarithmic expressions using the change of base rule.
- Students will be able to solve exponent equations using logs.

**Note:** Tasks are not intended to be graded. This work is to support understanding of the subject area.

### For Parents

- Your student will learn how to solve logarithmic and exponential equations. The logarithm is the inverse function of exponentials. In its simplest form, a logarithm answers the question: How many of one number do we multiply to get another number? Some examples of log include sound (decibel measures), earthquakes (Richter scale), the brightness of stars, and chemistry (pH balance, a measure of acidity and alkalinity).

### For Students

#### Logarithmic Equations

- [Task 1](#) Solving Logarithmic Equations (Notes and Practice) ([Answer Key](#))

#### Evaluating Logarithm: Change of Base Rule

- [Task 1](#) The Change of Base Rule (notes)
- [Task 2](#) The Change of Base Rule (video)
- [Task 3](#) The Change of Base Rule (practice)

#### Solving Exponential Equations using Logarithms

- [Task 1](#) Solving Exponential Equations using Log Base 10(Notes)
- [Task 2](#) Solving Exponential Equations using Log Base 10(Video)
- [Task 3](#) Solving exponential equations using Log base 10 (Practice)

### Resources

- [Desmos Graphing Calculator](#)
- [Math is Fun](#)
- [Openstax](#)

# Mathematics eLearning Guide Week 2

## preCALCULUS

### Objectives

- Students will graph and write equations for conic sections (hyperbolas) formed by the intersection between a plane and a double-napped cone. Students will classify each conic section based on its equations in standard or general form.

**Note: Tasks are not intended to be graded. This work is to support understanding of the subject area.**

### For Parents

- Your student will learn by taking different slices through a cone, they can create a hyperbola. In this lesson, students will learn how to graph and write equations for hyperbola.

### For Students

#### Hyperbola

- [Task 1](#) Hyperbola (video)
- [Task 2](#) Hyperbola (study guide and practice) ([Answer Key](#))

#### Identify Conic Sections

- [Task 1](#) Identify conic section (video)
- [Task 2](#) identify Conic Sections (study guide and practice) ([Answer Key](#))

### Resources

- [Math is fun](#) (hyperbola)
- [Math is fun](#) ( conic sections)
- [Openstax](#)