

SPRING BRANCH ISD

**DIGITAL
BACKPACK**

MATH



Mathematics eLearning Guide – Week 1

Algebra I: Properties of Exponents

- Simplify expression using the law of exponents
- Understand fractional/ rational exponents

Geometry: Volume & Surface Area

- Calculate the surface area of Prism and cylinder using formula
- Calculate the volume of Prism and cylinder using formula

MMA: Personal Financial Planning

- Calculate a monthly budget
- Plan a family budget

Algebra II: Logarithmic Function

- Understand how exponents and logarithms are related
- Simplify expression using the law of exponents

preCalculus: Conic Sections

- Identify conic sections
- Graph and write the equations for parabolas
- Graph and write the equations for circle and ellipses

AP Courses: Calculus AB, Calculus BC, Statistic

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

MATH eLearning - Algebra 1

Objectives

- Students will be able to simplify expressions using the laws of exponents
- Students will simplify expression with rational exponents

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

For Parents

- Your student will be building on skills to simplify expressions using the laws of exponents. These skills are essential to solving equations in courses from Algebra I through Calculus.

For Students

Exponent properties with multiplication

- [Task 1](#) Exponent properties involving products
- [Task 2](#) Exponent properties--products and exponents raised to exponents
- [Task 3](#) Based on Khan Academy Lessons 1 & 2 (Worksheet & Answer Key)

Exponent properties with quotients

- [Task 1](#) Exponent properties with quotients
- [Task 2](#) Exponents & division(Worksheet & Answer Key)

Rational Exponent

- [Task 1](#) Fractional Exponents
- [Task 2](#) Mathopolis Questions (online practice)

Resources

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

MATH eLearning - Geometry

Objectives

- Students will use formulas to calculate the surface area of prisms and cylinders
- Students will use formulas to calculate the volume of prisms and cylinders

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 (prisms and cylinders). 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

Prisms

- [Task 1](#) Surface Area of Prisms
- [Task 2](#) Mathopolis Questions (online practice)
- [Task 3](#) Volume of Prisms
- [Task 4](#) Mathopolis Questions (online practice)

Cylinders

- [Task 1](#) Surface Area & Volume of Cylinders
- [Task 2](#) Mathopolis Questions (online practice)
- [Task 3](#) Surface Area and Volume of Prisms and Cylinders (Worksheet & Answer Key)

Resources

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

MATH eLearning - MMA

Objectives

- Students will be setting up a realistic budget based on what they would make out of college. Students will complete each step and input their data into the worksheet in order to come up with a budget.

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

For Parents

- Your students will access their prior knowledge of linear functions and their knowledge of personal finance from middle school to apply linear functions to finance and budget applications.

For Students

Personal Financial Planning

- **Task 1** Texas Reality Check - create your own post high school budget using <http://www.texasrealitycheck.com>
- **Task 2** Family Budget Estimator

Resources

- [Texas Reality Check.](#)
- [Math is Fun](#)

MATH eLearning - ALGEBRA II

Objectives

- Students will simplify and evaluate expressions using the properties of logs.

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

For Parents

- 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

Logarithm

- [Task 1](#) Introduction to Logarithms
- [Task 2](#) Mathropolis Questions (online practice)
- [Task 3](#) Intro to Logarithm Properties (khan Academy notes)
- [Task 4](#) Use the Properties of Logarithms (Khan Academy practice)

Resources

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

MATH eLearning - preCALCULUS

Objectives

- Students will graph and write equations for conic sections (parabola, circle, and ellipse) 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 circle, an ellipse, a parabola or a hyperbola. In this lesson, students will learn how to graph and write equations for parabola, circle, and ellipses.

For Students

Conic Sections

- [Task 1](#) Intro to Conic Sections

Parabolas

- [Task 1](#) Parabolas- Conic Sections
- [Task 2](#) Study Guide and Practice Parabolas([Answer Key](#))

Ellipses and Circles

- [Task 1](#) Completing the Square to Write Equation in Standard form of Circle
- [Task 2](#) Writing Equations of Ellipses in Standard form & Graphing Ellipses
- [Task 3](#) Identify an Ellipse from Equations
- [Task 4](#) Study Guide and Practice Ellipses & Circles([Answer Key](#))

Resources

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