The Common Denominator

A Family Math Newsletter

Welcome to Math 8 Newsletters

The BCPS Office of Mathematics is happy to share Math 8 Newsletters with our students and their families. The Newsletters are provided to help give parents and guardians insight into each Unit of the course. There are 4 sections in each Newsletter: Unit at a Glance, Resources, Exploring Mathematics, and a Quote. In this first edition, there is an explanation of each of the Newsletter sections included below the section name. There are six units in the Math 8 course:

1. Real Numbers, Exponents and Scientific Notation
2. Proportional and Non-proportional Relationships and Functions
3. Solving Equations and Systems of Equations
4. Statistics
5. Transformational Geometry
6. Measurement Geometry

Each unit will have its own Newsletter. While the Newsletters are meant to be informative, parents and guardians are encouraged to keep communication directly with their student's teacher through Schoology, email, Back-to-School Nights and/or conferences.

Unit at a Glance

The "Unit at a Glance" section is provided to give an overview of the specific topics and skills that students will be expected to learn in the unit. An estimated time frame is also stated. The first unit in Pre-Algebra is The Number System.

Exploring Mathematics

In the "Exploring Mathematics" section, connections are made between the math in the unit and practical applications. This can be an exploration of related careers, applications of the math to real-world problems, discussion prompts to have with your child, or information about growth mindsets. One of the best ways to support your child in math class is to have positive conversations about math. The prompts in this section are meant to help start some positive discussions surrounding the math in the unit.

Resources

Resource Toolkit

The "Resources" section has information about texts, videos, and practice problems that can benefit a student when working outside of the classroom. The first part of the "Resources" section lists three different locations where information and supports can be found: the physical text: Houghton Mifflin Harcourt, *Go Math Middle School Grade 8,* as well as the *Interactive Student Edition* and *Student Resources.* This resource and others such as Discovery Education, are accessed through BCPSone Instructional & Productivity Resources.
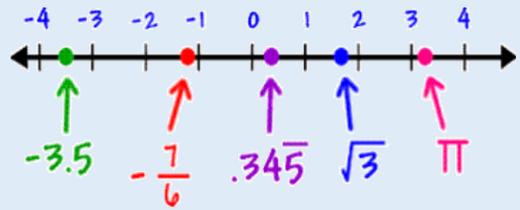
Homework Help Section

The *Homework Help* section references an item or two that are in the *Student Resources* portion of HMH that are the most beneficial for students in need of support outside of the classroom. Encourage your student to access these resources if they are having difficulty or confusion about a topic. If your student continues to have difficulty, encourage them to discuss with their teacher.

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Math 8 Unit 1: Real Numbers, Exponents, and Scientific Notation

$-3.5 \quad -\frac{1}{6} \quad .34\overline{5} \quad \sqrt{3} \quad \pi$
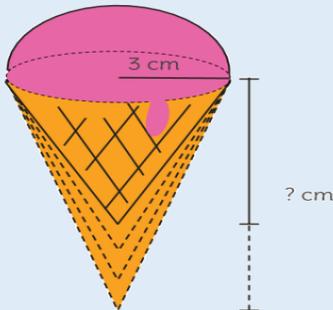
Unit at a Glance

Skills/ Topics:

- Distinguish between rational and irrational numbers.
- Locate and order real numbers on a number line.
- Apply the properties of integer exponents to generate equivalent expressions.
- Solve equations of the form $x^2=p$ and $x^3=p$ when p is a positive rational number.
- Write numbers in scientific notation and perform operations with numbers expressed in scientific notation.
- Solve real-world and mathematical problems using the formulas for the volumes of cones, cylinders, and spheres.

Length: 27 Days (45 minutes); 15 Days (90 minutes)

Exploring Mathematics

To find the height of the cone that would hold 113.04 cm³ of ice cream, use the formula for volume of a cone.

$$V = \frac{1}{3}\pi r^2 h$$

$113.04 = \frac{1}{3}(3.14)(3)^2(h)$

$\dfrac{113.04 = 9.42(h)}{9.42}$

height = 12 cm

https://learnzillion.com/lesson_plans/249-model-solutions-to-real-world-problems-involving-the-volume-of-a-sphere-by-using-the-relationship-to-the-volume-of-a-cone/

Resource Toolkit

HMH Resources

Module 1: Integers pg. 1-26
Module 2: Factors and Multiples pg. 27-42
Module 13: Area and Polygons pg. 367-396

Discovery ED Techbook Info

Grade 8
Exponents, Concept 1.1 and 1.2
Real Numbers, Concept 2.1, 2.2 and 2.3
Scientific Notation, Concept 5.1 and 5.2
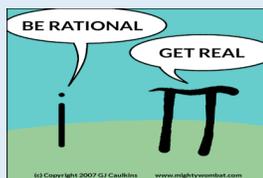Volumes of Solid Figures, Concept 11.1

HW Help Section

Khan Academy
Rational/Irrational, Classifying, Order, Exponents, Scientific Notation, Volume Cylinders/Cones/Spheres

The fact that logic cannot satisfy us awakens an almost insatiable hunger for the irrational.

-A. N. Wilson