"Converting Rational Numbers" Classroom Activities

Short description: Learn how to use division and place value to convert fractions to decimals in this Math Shorts video.

Long description: In this video, learn how to use division and place value to convert fractions to decimals. In the accompanying classroom activity, students watch the video to help them learn how to convert a fraction to a decimal using division. Then, they turn their attention to placing rational numbers on a number line. Practicing the placement of these numbers reinforces students' number sense. It also gives them practice converting among the different representations of a single rational number.

Activity Text

Learning Outcomes
Students will be able to
- convert a fraction to a decimal
- place rational numbers on a number line

Common Core State Standards: 7.NS.A.2d

Vocabulary: Rational number, fraction, integers, decimals

Materials: Rational Numbers worksheet, Number Line template

Preparation: Copy the Number Line template and cut out a sufficient quantity of number lines for the students in your class.

Procedure
1. Introduction (5 minutes, whole group)
Introduce students to the idea of *rational numbers*. A rational number is a number that can be written as a *fraction* in the form a/b. All rational numbers have a specific place on the number line, too.

Give some examples of rational numbers. Include a diverse set like –3, 0, 1/2, –2/99, 0.03, –2.9, and 101. Explain that *integers* are included in the set of rational numbers because they can be represented with a denominator of 1. Similarly, *decimals* are considered rational numbers because they can be converted into fractional form.

Introduce the activity by telling students that they will watch a brief video about rational numbers. They will then practice converting fractions to decimals and place rational numbers on a number line.

2. Watch the Video (5 minutes, pairs)

Have students watch the video in pairs. The video shows students how to use division and place value to convert a fraction to a decimal.

3. Activity (20 minutes, pairs)
Hand out the number lines you prepared earlier and the worksheet. Have students work together to convert the fractions into decimals. Then, have them place both the fraction and the equivalent decimal on the number line (decimals above the line, and fractions below).

A list of fractions, decimals, and challenge questions is provided on the worksheet.

4. Conclusion (5 minutes, whole group)
Ask students how they figured out where to place the rational numbers on the number line. Was it easier to place the decimals or fractions? Were there any numbers that they could not express in rational (a/b) form?

Have students share their work on the number line. Discuss any differences that students have in the placement of a specific rational number on the number line, and use this as a starting point for a conversation about fractions.