

Fractions, Decimals, and Percents with Hundred Grids

STRAND: Number and Number Sense

STRAND CONCEPT: Rational Number Equivalencies

SOL 4.3d, 5.2a, 6.2a

Remediation Plan Summary

Students will represent and determine equivalencies among fractions, decimals, and percents using a 100 grid.

Common Misconceptions

- Students may not realize that a percent is out of 100.
- Students may not see that 0.5 and 0.50 are equivalent values.

Materials

- Chart paper with
- 3-6 different colored markers
- Understanding Percents recording sheet
- Blank Base Ten grids

Introductory Activity

- Make three charts, headed as follows: “Real-Life Uses of Fractions,” “Real-Life Uses of Decimals,” and “Real-Life Uses of Percent.” Model the use of the charts by listing one example of how we use each kind of number. Divide the students into three groups, and assign one group to each chart. If dividing the class into three groups would make the groups too large, then make two charts of each type and have six groups, two groups per each type of chart.
- Give each group a different colored marker. Give the students approximately five minutes at each station. Have the groups rotate to the three different charts to record their uses. Continue until the groups are back to their starting places.

After the gallery walk, display the charts for everyone to see. Initiate a class discussion by asking questions such as:

What do you notice?

Do the lists have any items that are the same?

Are there any items that are only on one list?

Listen to student discussions about the use of fractions, decimals, and percents. In certain cases, one representation may be more commonly used than others. For example, a hitter can have a .265 batting average, but we do not say he has a “265 thousandth” average. In some situations, one form may not make sense to us. For example, we say “ $\frac{1}{2}$ inch” but not “50% of an inch.” Sale prices may be 25% or $\frac{1}{4}$ off, but

not 0.25 off. A jogger runs 3 and $\frac{1}{2}$ miles, but not 3 and 50% miles. The language of their

AR Remediation Plan – Rational Number Equivalences

answers and comparisons of different uses is an important discussion to assess understanding of the representations of rational numbers.

Plan for Instruction

1. Write the fraction “one-half” on the board in the three notations: $\frac{1}{2}$, 0.5, 50% .
 - a. *What do you know about these three numbers?*
 - b. *How are they the same?*
 - c. *How are they different?*
 - d. *Where do you see these numbers on our charts?*
2. *What would a picture of $\frac{1}{2}$ look like?* Students may draw a picture of a circle or rectangle divided in half and shade one side.
What would a picture of 50 percent or five tenths look like?
Display a grid with 100 squares. Explain that a good example of what 50 percent looks like is a grid of 100 squares with 50 (or half) of the squares shaded. Model shading 50 of the squares for the class. Lead a discussion of where students see $\frac{1}{2}$ and 0.5 in the model.
Explain to students that 0.5 and 0.50 are equivalent.
3. Distribute the “Understanding Percents” recording sheet. Have students shade in the three grids to represent the given percents. Ask students to explain the shadings. They should say that since “25 percent” means 25 out of 100 and since there were 100 boxes, they shaded 25 boxes.
4. Have students write the decimal and fraction equivalencies for each chart as well. Discuss student answers as a group and correct any misconceptions.
5. Ask students to write the fractions, decimals, and percent equivalencies for the following numbers. Provide students with blank hundreds grids to use as a resource.
60% 0.10 $\frac{45}{100}$

Pulling It All Together (Reflection)

Have students reflect on and answer the following questions:

In what ways are fractions, decimals, and percents alike?

In what ways are they different?

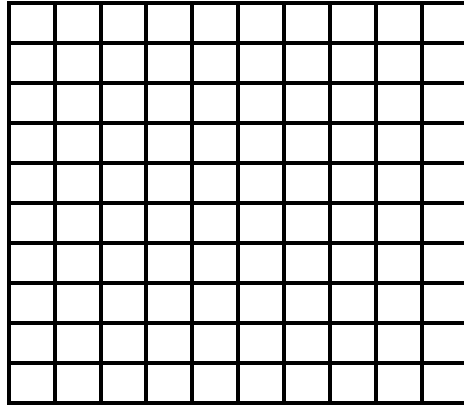
Note: The following pages are intended for classroom use for students as a visual aid to learning.

Name: _____

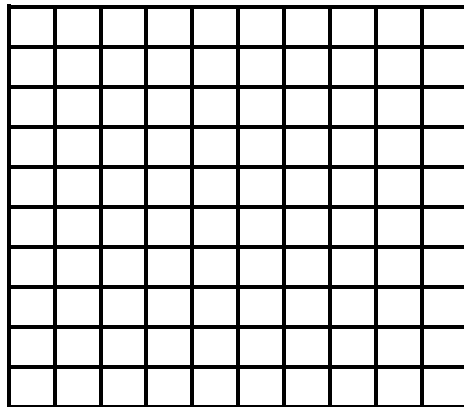
Understanding Percents

Each grid below has 100 squares. Shade in the appropriate number of squares to create a picture of the given percent.

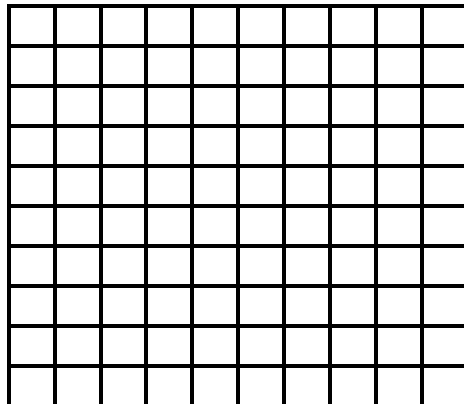
25%



30%



80%



Base-Ten Grids

