

Hundreds Grids

STRAND: Number and Number Sense

STRAND CONCEPT: Rational Number Equivalencies

SOL 4.3d, 5.2a, 6.2a

Remediation Plan Summary

During this lesson students will use hundreds grids (and/or optional Base 10 Blocks) to form a conceptual understanding of fraction and decimal equivalencies.

Common Errors and Misconceptions

Some students who do not have a conceptual understanding of rational numbers will write the numerator as the tenths digit and the denominator as the hundredths digit. For example: $\frac{3}{5}$ would be 0.35

Materials

- Hundreds grids, colored pencils, introductory activity sheet, (optional – base 10 blocks)

Introductory Activity

- Hand each student an introductory activity sheet and have them complete the two questions on their own. Have students partner up and discuss the way they shaded and their answer. Ask students, “Who would like to share how their number of shaded blocks related to the decimal of either problem one or two?”

Plan for Instruction

- Ask the question, “How would I shade the decimal 0.55 on a hundreds grid?” “What about $\frac{1}{2}$?” How are these two numbers different? “How are they similar?”
- Hand students multiple hundreds grids and colored pencil for shading. If Base 10 Blocks are available, use them in conjunction with the hundreds grid to give students a hands on experience alongside the representation.
- Display the number $\frac{2}{5}$ and instruct students to represent this number on a hundreds grid by shading in the blocks. Ask, “How would you read this number as a decimal?” “How does the way you read the number relate to the area in the hundred grid?” Have student use a calculator to check their answer.
- If needed, complete a few more examples with denominators that are factors of 100.
- Display the number $\frac{2}{3}$ and instruct students to represent this number on a hundreds grid by shading in the blocks. Encourage students to work with a partner and discuss the similarities and difference between this number and the last number. Have a whole group discussion on how each person shaded the grid. Have student use a calculator to check their answer. (Students may struggle because they cannot shade the exact

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amount. This struggle will help them see that the decimal is an approximation when rounded to the hundredths place.)

- Ask, “How many blocks do you think will be shaded for the fraction $\frac{5}{6}$?” Have students discuss their answer with a partner. Ask, “How can you prove your answer is correct?” Have students prove their answer.
- Give students several more fractions to shade and check with a calculator. Then ask, “How are fractions and decimals related?”, “How can you use what we did in this lesson to find the equivalent decimal or approximate value for any fraction?”, “How could you use this information to find the equivalent fraction when given a decimal?”

Extension – If students are ready, have them also find the percent equivalent for each fraction.

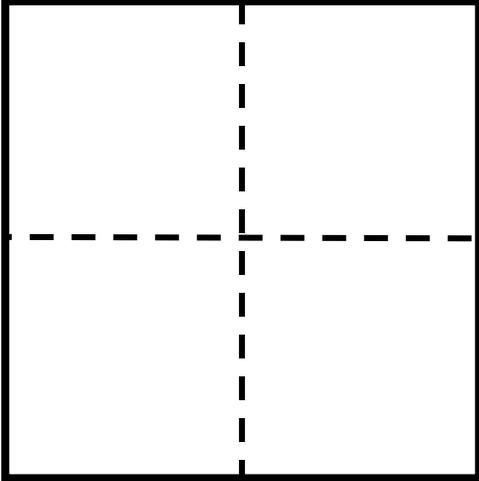
Pulling It All Together (Reflection)

Explain how you would use a hundreds grid approximate the decimal equivalent for the fraction $\frac{2}{9}$.

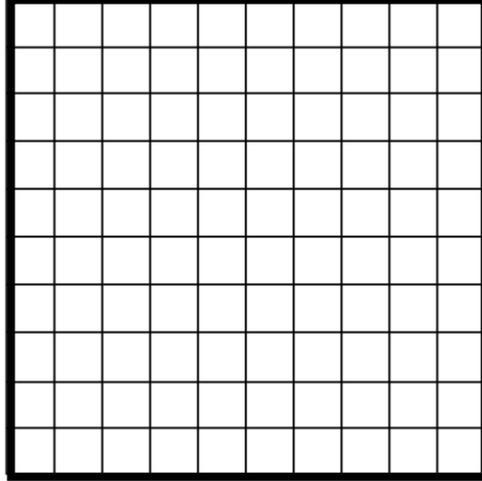
Note: The following pages are intended for classroom use for students as a visual aid to learning.

Fraction Decimal Equivalence with Models Introductory Activity

Square A

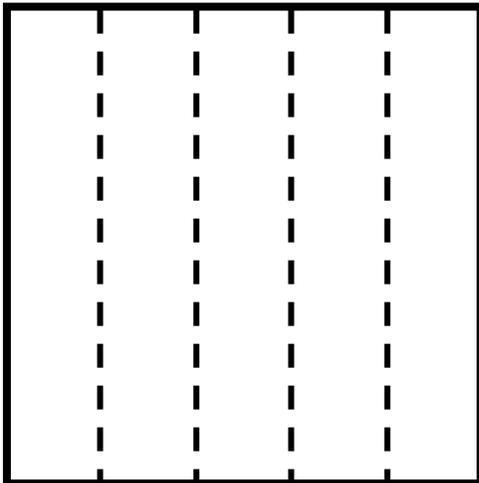


Square B

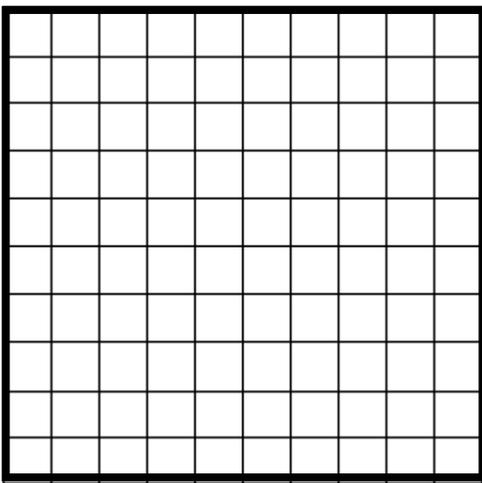


Each square represents one whole. Shade $\frac{3}{4}$ of each square. How many squares were shaded in square B? How does this number relate to the decimal value of $\frac{3}{4}$?

Square A



Square B



Each square represents one whole. Shade $\frac{1}{5}$ of each square. How many squares were shaded in square B? How does this number relate to the decimal value of $\frac{1}{5}$?

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