

UNIT FRACTIONS

Name: 6614 1 Know This??

Type: Routine

About the Routine: Reasoning with rational numbers requires moving among decimals and fractions. *If I Know This* (SanGiovanni & Milou, 2018) is a routine for developing skill with converting fractions to decimals. It focuses students' attention on conversions with unit fractions and uses them for other conversions. For example, if one knows that $\frac{1}{8}$ converts to 0.125 they can think of $\frac{3}{8}$ as 3×0.125 or 0.375.

Materials: Record two or three unit fraction conversions (see example) along with two or three prompts wherein students can use the given conversions.

Directions: 1. Post basic conversions (or have students generate them).

- 2. Pose conversion prompts that connect to the If I Know This given conversions.
- 3. Give think time for students to think about possible conversions.
- 4. Ask students to share their conversion strategies with a partner.
- 5. Bring the group together to share their conversion strategies.

Example A

| If I Know | | | |
|--------------------------------------|----------------------|-----------------------|--|
| $\frac{1}{5} = 0.2$ | $\frac{1}{10} = 0.1$ | $\frac{1}{20} = 0.05$ | |
| | | | |
| What is $\frac{3}{5}$ as a decimal? | | | |
| What is 29/10 as a decimal? | | | |
| What is $\frac{8}{40}$ as a decimal? | | | |

For the first prompt, students may think of $\frac{3}{5}$ as 3 × 0.2 or 0.6, whereas some students may just double the fraction to get $\frac{-6}{10}$ and know that is 0.6 (or they may "just know" this conversion).

Example B

| If I Know | | | |
|-------------------------------------|----------------------|-----------------------|--|
| $\frac{1}{2} = 0.5$ | $\frac{1}{4} = 0.25$ | $\frac{1}{8} = 0.125$ | |
| | | | |
| What is $\frac{3}{8}$ as a decimal? | | | |
| What is $\frac{5}{2}$ as a decimal? | | | |
| What is $\frac{6}{4}$ as a decimal? | | | |

In the first prompt, students might reason that $\frac{3}{8}$ is the same as 3×0.125 . Some might think of it as 0.25 + 0.125 because they recognize $\frac{3}{8}$ as $\frac{1}{4} + \frac{1}{8}$ or 0.25 + 0.125. For the second problem, students might use the known conversion for $\frac{1}{2}$ and then multiply 5×0.5 finding $\frac{5}{2}$ to be 2.5. Although another student might multiply it by 5 finding $\frac{25}{10}$, which they can easily convert to 2.5. And in the last example, students might convert $\frac{6}{4}$ as 6×0.25 . Others might think of it as 1 and a half sharing that they didn't need the conversions to help them.

Retrieved from the companion website for Figuring Out Fluency—Operations With Real Numbers and Algebraic Expressions: A Classroom Companion by Jennifer M. Bay-Williams, John J. SanGiovanni, C. David Walters, and Sherri Martinie. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2023 by Corwin Press, Inc. All rights reserved. Reproduction authorized for educational use by educators, local school sites, and/or noncommercial or nonprofit entities that have purchased the book.