



Lesson Notes

1.5

NAME _____

Module 1 Number Sense
Lesson 5 Estimation

Lesson Objectives

- Develop and use strategies to estimate the results of whole number computations and judge the reasonableness of such results.
- Read, write, compare, and solve problems involving whole number computations with and without appropriate technology.

Subtopic 1 Exact Answer or Estimate

The symbol \approx means “is approximately equal to.”

Estimate

- Shows what to expect
- Gives immediate feedback
- Helps determine if an answer is reasonable

Estimates are close answers, NOT exact answers.

For each of the following, decide if an exact answer is needed or if an estimate will work.

- 1 Approximately how many fish are in the aquarium? **Estimate**
- 2 How many nickels are in \$3? **Exact Answer**

Subtopic 2 Estimation Strategies: Front-End Estimation

Front-End Estimation is a method of estimating where one uses the numbers in front, the numbers with the greatest place value.

Front-End Estimation can be used in situations when a quick answer or a reasonable estimate is needed.

Estimate using Front-End Estimation.

- 3 $415 + 748 \approx 1,100$
- 4 $570 - 228 \approx 300$

Subtopic 3 Estimation Strategies: Rounding

To round a number:

- Select the place value to which to round.
- Look at the digit to its **right**.
- If digit is 5 or greater, **increase** the rounding place digit by 1. If less than 5, rounding place stays the **same**.
- Replace digits to the **right** with zeros.

Round each number to the given place value.

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Round 92 to the nearest 10. **90**

6

Round 995 to the nearest 100. **1,000**

Subtopic 4 Estimation Strategies: Compatible Numbers

Compatible numbers are numbers that are easy to use mentally.

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Vic donated \$337 to charity last month. This month, he donated \$467. Approximately how much did Vic donate? **Possible answer: \approx \$800**

Subtopic 5 Comparing and Combining Estimation Strategies

To use Front-End Estimation and Rounding, round each number to its **greatest** place value.

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Jax purchases a MP3 player for \$189 and a DVD player for \$125. About how much does he pay for both items? **Possible answer: \approx \$300**

Estimate using the given estimation strategy.

Front-End Estimation $344 + 275 \approx$ **500**

Front-End Estimation with Rounding $344 + 275 \approx$ **600**

Rounding to Nearest Ten $344 + 275 \approx$ **620**

Exact Answer $344 + 275 =$ **619**

Which estimation strategy one uses depends on how close the **estimate** needs to be to the **exact answer**.