

Number and Operations

Estimating the Sum or Difference

As students become more familiar with adding and subtracting, they come to understand that sometimes a situation calls for an estimate rather than an exact answer. Estimates are helpful when dealing with very large numbers, and save time when an exact answer is not needed. It is important that students learn to discern when a problem is asking for an estimate.

Objective

Estimate the sum or difference in addition and subtraction problems.

Skills

- Adding
- Subtracting
- Estimating

NCTM Expectations

Number and Operations

- Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.
- Develop and use strategies to estimate the results of whole-number computations and to judge the reasonableness of such results.
- Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- **Ask:** *When is an estimate enough information to solve a problem? Guide students to understand that when a problem asks for “about” how many, they can use an estimate.*
- **Ask:** *What number did you round 104 to? How did you know to round down instead of up? What about 328? How did you know to round up?*
- Emphasize that students can do estimates in their heads, rather than using pencil and paper. For example, in the problem they just did, they can tell that $104 + 328$ is less than 500, because $100 + 300 = 400$.

Solve It

With students, reread the problem. Have students write to describe how they used Base Ten Blocks to help them estimate $104 + 328$. They should then write a sentence telling whether the class will have enough labels for a new computer.

More Ideas

For other ways to teach about estimating sums and differences—

- Have students use Base Ten Blocks to estimate differences. Give students a subtraction problem. Then ask them to round the numbers in the problem and subtract to find an estimate.
- Give students sample addition and subtraction word problems. For problems requiring an estimate, have students estimate using mental math first. Then have them use Base Ten Blocks to check their answers.

Standardized Practice

Have students try the following problem.

What is the best estimate for the difference of 812 and 489 when you round to the nearest 10?

- A. 300 B. 320 C. 420 D. 480