

## ESTIMATE, SOLVE AND CHECK

### Performance Standard (6C/8D).B

Estimate, solve, and check a series of addition and subtraction number and word problems:

- *Mathematical knowledge*: Use mental math to estimate, and solve addition and subtraction problems;
- *Strategic knowledge*: Solve problems using appropriate strategies, use calculator correctly to check answers;
- *Explanation*: Explain completely what was done and why it was done.

### Procedures

1. *In order to compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers (6C), and use algebraic concepts and procedures to represent and solve problems (8D)*, students should experience sufficient learning opportunities to develop the following:
  - Explain and use mental math strategies to solve simple addition and subtraction problems.
  - Estimate sums and differences of one- or two- digit numbers.
  - Analyze situations to determine whether exact numbers or estimates are appropriate.
  - Utilize a calculator to solve addition and subtraction problems.
  - Solve word problems involving unknown quantities.
2. Part 1 of this assessment can be given as a whole class assignment. The teacher will read each problem. The students will write their estimates in the first column with a crayon. Then they will compute and write the answer in the next column. The students will use a calculator to check their answers and explain their estimates, calculations and checking to the teacher aloud. Part 2 must be done individually with the teacher or videotaped to observe the checking on the calculator.
3. Use the standard rubric to assess the Mathematical Knowledge and Strategic Knowledge of this task. Check the Mathematical Knowledge by assessing the estimates and answers to each problem. Check the Strategic Knowledge by assessing the number sentences created from the word problems and how efficiently the calculator is used to check the answer.

### Examples of Student Work not available

### Time Requirements

- 20 - 25 minutes for Part 1 (Some students may need the word problems read aloud.)
- Less than five minutes per student for Part 2

### Resources

- Pencil
- 2 different color crayons
- Calculator
- Copies of the “Estimate, Solve, and Check” recording sheet
- Mathematics Rubric

NAME \_\_\_\_\_ DATE \_\_\_\_\_

**ESTIMATE, SOLVE AND CHECK**

Student Recording Sheet

Fill in the estimate and solve the following problems and write your answers in the grid. Please write your estimates in crayon and your solutions in pencil. You will fill in the last column with the teacher.

<b>PROBLEM #</b>	<b>ESTIMATE</b>	<b>SOLUTION</b>	<b>CHECK</b>
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			
<b>5</b>			
<b>6</b>			
<b>7</b>			
<b>8</b>			
<b>9</b>			
<b>10</b>			

NAME \_\_\_\_\_ DATE \_\_\_\_\_

## ESTIMATE, SOLVE AND CHECK

### Student Recording Sheet

1.  $23 + 19 =$
2.  $86 - 38 =$
3.  $8 + 13 =$
4.  $32 - 11 =$
5. Two friends went sledding down a hill in the woods. One of the boys went down the hill 17 times. The other boy went down the hill 12 times. How many times did they go down the hill altogether?
6. My mother bought 36 doughnuts at the grocery store. My friends came over and ate 7 of them. How many doughnuts are left?
7. 11 beautiful bluebirds landed in the park yesterday. Suddenly, some more joined them. In all there were 20 bluebirds in the park. How many bluebirds joined the first ones?
8. The circus clown had a handful of 28 balloons. He let go of some of them and they floated away. Now he has 16 in his hand. How many did he lose?
9. My father's garden has yellow and red roses. If he has 50 roses in all and 23 of them are red, how many are yellow?
10. For the week the teacher gives us 8 pages of homework on Monday and 6 more on Tuesday. How many homework pages do we have this week?