

## 1<sup>st</sup> GRADE PROBLEM SOLVERS

### Performance Standard 6B.A

Record number sentences on the recording sheet to match word problems accordingly:

- *Mathematical knowledge:* Apply mathematical concepts to arrive at the correct answer with a correct number sentence recorded.
- *Strategic knowledge:* Use manipulatives to solve the problems.
- *Explanation:* Explain completely and clearly what was done and why it was done.

### Procedures

1. ***In order to investigate, represent, and solve problems using number facts, operations, and their properties, algorithms, and relationships (6B)***, students should experience sufficient learning opportunities to develop the following:
  - Solve one-step addition and subtraction number sentences and word problems using concrete materials.
  - Construct number sentences to match word problems.
2. Pass out recording sheets and counters to small groups of students. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it.
3. Direct the student to listen to the following problems and write a number sentence to match. (You must be able to observe the students as they compute/manipulate the problem.) Read each problem twice:
  - 1) Six dogs were running through the backyard. Four more dogs joined them. How many dogs are in the backyard now?
  - 2) Mom made 12 cupcakes for my friends to share. My brother ate 5 of them. How many cupcakes were left?
  - 3) In my marble collection I have 8 yellow marbles and 8 green marbles. How many marbles do I have altogether?
  - 4) The squirrel in our tree ate 7 nuts on the ground and then carried 4 more into the tree to eat. How many nuts did the squirrel eat?
  - 5) I had 10 pennies in my pocket. While I was walking, 3 pennies fell out. How many pennies are in my pocket now?
  - 6) My mom has 8 children. Four of the children are girls. How many of her children are not girls?
  - 7) Sue has 9 pieces of bubble gum. Joe gave her 3 more. How many pieces of bubble gum does Sue have now?
  - 8) Seven birds were sitting on a fence. Three birds flew away. Now how many birds are on the fence?
  - 9) There are 12 cows on the farm. Two of the cows are black. How many cows are not black?
  - 10) On Tuesday, 5 flowers were growing in my garden. On Thursday, I found 4 more flowers. How many flowers are in the garden?
4. Ask students to determine the answer to their number sentence by using the manipulatives if needed.
5. Listen as the students explain their use of manipulatives to determine the correct number sentence.
6. Evaluate each student's work using the rubric and the guide to determine each student's performance level.
  - *Mathematical knowledge:* Correct number sentences and answers are written.
  - *Strategic knowledge:* Manipulatives correctly used to demonstrate operations.
  - *Explanation:* Complete explanation of what was done and why it was done. The students must explain why they used addition or subtraction to solve the number sentences.

### Examples of Student Work follow

### Time Requirements

- 25 - 30 minutes

### Resources

- Copies of "1<sup>st</sup> Grade Problem Solvers" recording sheet
- 20 counters for each student
- Mathematics Rubric

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

**1<sup>ST</sup> GRADE PROBLEM SOLVERS**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

NAME \_\_\_\_\_

DATE

April 4, 2001

1<sup>ST</sup> Grade Problem Solvers Recording Sheet

A.  $6+4=10$

B.  $12-5=7$

C.  $8+8=16$

D.  $7-4=3$

E.  $10-3=7$

F.  $8-4=4$

G.  $9+3=12$

H.  $7-3=4$

I.  $12-2=10$

J.  $5+4=9$

Name \_\_\_\_\_

Date \_\_\_\_\_

4-18-01

1st Grade Problem Solvers Recording Sheet

A.  $6 + 4 = 10$

B.  $12 - 5 = 7$

C.  $8 + 8 = 16$

D.  $7 + 4 = 11$

E.  $10 - 3 = 7$

F.  $8 - 4 = 4$

G.  $9 + 3 = 12$

H.  $7 - 3 = 4$

I.  $12 - 2 = 10$

J.  $5 + 4 = 9$