

CRISS IMPROVES MATH COMPREHENSION

Create and Evaluate Problems

Sue Harding, in Kalispell, Montana, knows that her fourth graders become more proficient with math problem solving, if they have many opportunities to write and then evaluate their own problems. Each morning she greets her students with a number on the board. Today they see the number 9. While Sue takes role and counts lunch money, her students take out their math journals and begin to derive as many problems as they can that have 9 as the answer.

Matthew writes:

$$5 + 4 = 9$$

$$(10 - 2) + 1 = 9$$

$$20 - 11 = 9$$

$$18 \div 2 = 9$$

$$3 \times 3 = 9$$

Matthew then chooses one of his problems and writes a story problem:

Story problem for 9. I had 20 pumpkins all cut out with scary faces. On Halloween, before I went trick or treating, I set out my 20 pumpkins on the porch. I went trick or treating for 2 hours. Then I went to a Halloween party for 3 hours. I was out for five hours total. When I went home, 11 of my pumpkins with scary faces were gone. How many pumpkins do I have left? $20 - 11 = 9$.

Next, Matthew meets with Vanessa to read and to talk about their story problems. Sue gives each pair of students a Problem-Solving Checklist to guide their evaluation. Sue asks, "Can you solve one another's problems? How might you make your problems clearer? Do your problems contain the key parts of a story problem?" Matthew and Vanessa read through their problems and evaluate their work using the checklist as a guide.

Problem-Solving Checklist

1. Does the problem contain a clear question? Will the reader know what to do?
2. Does the author present facts clearly?
3. Does the author give you clues as to what operation you are supposed to use?

After students complete any revisions, Sue asks for two volunteers to make a transparency of their problems for the whole class to solve.

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