

Illustrative Mathematics

3.OA Gifts from Grandma, Variation 1

Alignment 1: 3.OA.A.3

Not yet tagged

- a. Juanita spent \$9 on each of her 6 grandchildren at the fair. How much money did she spend?
- b. Nita bought some games for her grandchildren for \$8 each. If she spent a total of \$48, how many games did Nita buy?
- c. Helen spent an equal amount of money on each of her 7 grandchildren at the fair. If she spent a total of \$42, how much did each grandchild get?

Commentary

The first of these is a multiplication problem involving equal-sized groups. The next two reflect the two related division problems, namely, "How many groups?" and "How many in each group?"

Sometimes the second type of problem is referred to as a measurement division or repeated subtraction problem. The third type of problem is sometimes called a partitive division or sharing problem. It asks how large is each share when a whole is divided equally into a specified number of pieces. It specifies the size of each share and asks how many of that size are in the whole. The language used in the solution reflects the language in the common core, which also refers to them "Number of Groups Unknown" or "Group Size Unknown," respectively.

Solution: Tape diagram

This task needs a tape diagram solution; one is under development.

Solution: Writing multiplication equations for division problems

- a. Sandra spent 6 groups of \$9, which is $6 \times 9 = 54$ dollars all together.
- b. Since the number of games represent the number of groups, but we don't know how many games she bought, this is a "How many groups?" division problem. We can represent it as

$$? \times 8 = 48$$

or

$$48 \div 8 = ?$$

So Nita must have bought 6 games.

- c. Here we know how many grandchildren there are (so we know the number of groups), but we don't know how much money each one gets (the number of dollars in each group). So this is a "How many in each group?" division problem. We can represent it as

$$7 \times ? = 42$$

or

$$42 \div 7 = ?$$

So Helen must have given each grandchild \$6.

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