

[Illustrative Mathematics](#)

4.OA Comparing Money Raised

[Alignment 1: 4.OA.A.2](#)

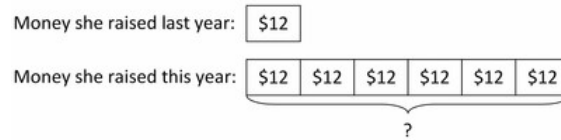
- a. Helen raised \$12 for the food bank last year and she raised 6 times as much money this year. How much money did she raise this year?
- b. Sandra raised \$15 for the PTA and Nita raised \$45. How many times as much money did Nita raise as compared to Sandra?
- c. Nita raised \$45 for the PTA, which was 3 times as much money as Sandra raised. How much money did Sandra raise?

Commentary:

These problems involve multiplicative comparison, which is not included in 3.OA.3 and is strictly excluded from 3.MD.2, making this a 4<sup>th</sup> rather than 3<sup>rd</sup> grade problem.

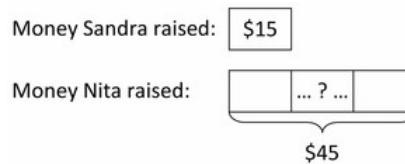
Solution: Tape diagram

- a. She raised six times as much money (as shown in the diagram) so she raised  $6 \times 12 = 72$ .



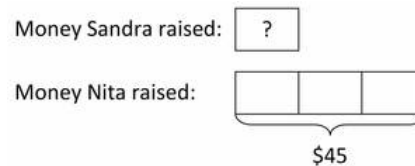
Helen raised \$72 this year.

- b.  $? \times 15 = 45$  is equivalent to  $45 \div 15 = ?$



Nita raised 3 times as much as Sandra.

- c.  $3 \times ? = 45$  is equivalent to  $45 \div 3 = ?$



Sandra raised \$15.

Solution: Writing multiplication equations for division problems

- a. Helen raised  $6 \times \$12$  this year, so she raised \$72 this year.
- b. This is a "Number of Groups Unknown" problem. We can represent the question as

$$? \times 15 = 45$$

or

$$45 \div 15 = ?$$

So Nita raised 3 times as much money as Sandra.

- c. This is a "Group Size Unknown" problem. We can represent the question as

$$3 \times ? = 45$$

or

$$45 \div 3 = ?$$

So Sandra raised \$15.



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