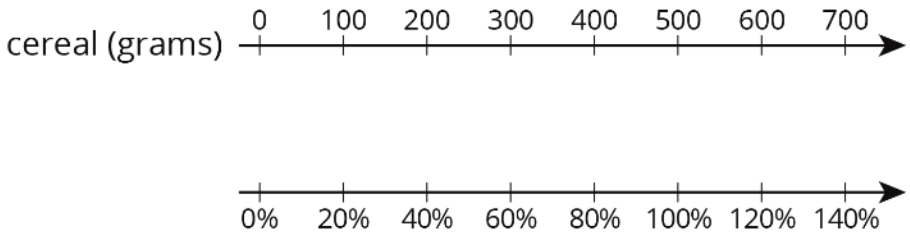
NAME DATE PERIOD

Lesson 7 Summary

We can use a double number line diagram to show information about percent increase and percent decrease:



The initial amount of cereal is 500 grams, which is lined up with 100% in the diagram. We can find a 20% *increase* to 500 by adding 20% of 500:

$$500 + (0.2) \cdot 500 = (1.20) \cdot 500$$
$$= 600$$

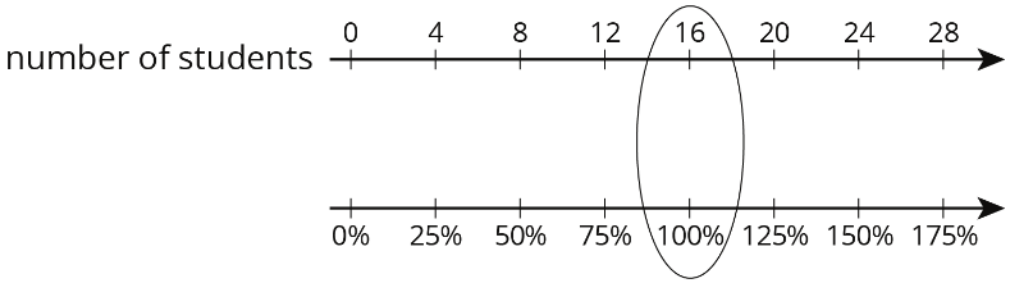
In the diagram, we can see that 600 corresponds to 120%.

If the initial amount of 500 grams is *decreased* by 40%, we can find how much cereal there is by subtracting 40% of the 500 grams:

$$500 - (0.4) \cdot 500 = (0.6) \cdot 500$$
$$= 300$$

So a 40% decrease is the same as 60% of the initial amount. In the diagram, we can see that 300 is lined up with 60%.

To solve percentage problems, we need to be clear about what corresponds to 100%. For example, suppose there are 20 students in a class, and we know this is an increase of 25% from last year. In this case, the number of students in the class *last* year corresponds to 100%. So the initial amount (100%) is unknown and the final amount (125%) is 20 students.



Looking at the double number line, if 20 students is a 25% increase from the previous year, then there