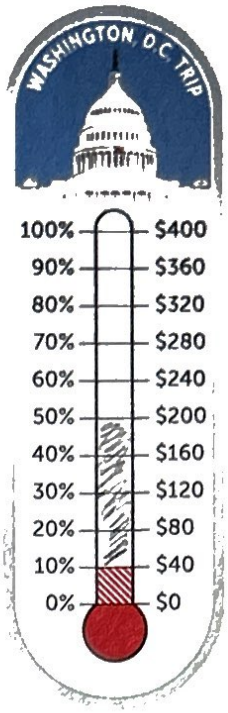
UNDERSTAND: What do percents mean and how are they related to fractions?

Develop Understanding of Percents

Model It: Bar Models



➤ **Try these two problems involving percents.**

1. A group of students is raising money for a trip to Washington, D.C. They use a model that looks like a thermometer to track their progress toward their goal.

   a. The line at 100% represents the students' goal. What amount of money are the students trying to raise?

   $400

   b. The shading between 0% and 10% shows that the students have reached 10% of their goal. How much money have the students raised so far?

   $40

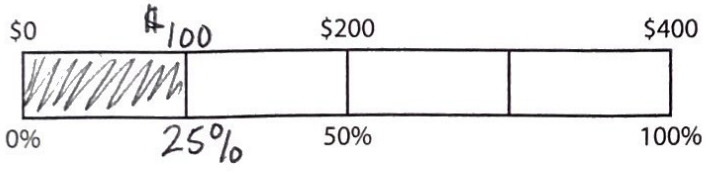
   c. After 1 week, the students reach 50% of their goal. Shade the model to show how much money the students have raised.

   d. Use your model to complete this sentence.

   50% of $ 400 is $ 200 .

2. Another group of students is also raising $400 for the trip.

   a. On Monday, the students reach 25% of their goal. Label and shade the bar model to show their progress.



   b. How much money have the students raised so far? Justify your answer.

   $100

   25% is 1 out of 4 parts. $400 divided into 4 equal parts is $100.

   c. What fraction of their goal have the students reached?

   $\frac{1}{4}$

DISCUSS IT

Ask: How are the two models on this page alike? How are they different?

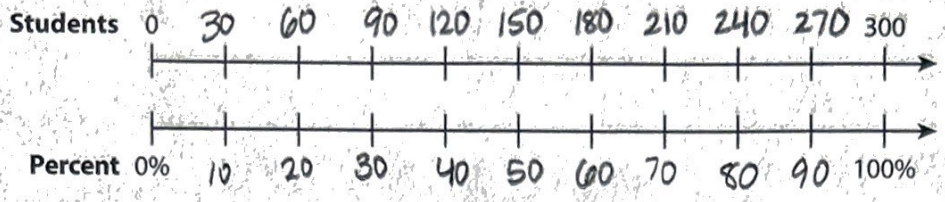
Share: The bar model is divided into four parts because . . .

Model It: Double Number Lines

➤ **Try this problem using a double number line to show percents.**

3 A total of 300 students go to Washington, D.C.

a. Label the tick marks on the double number line.



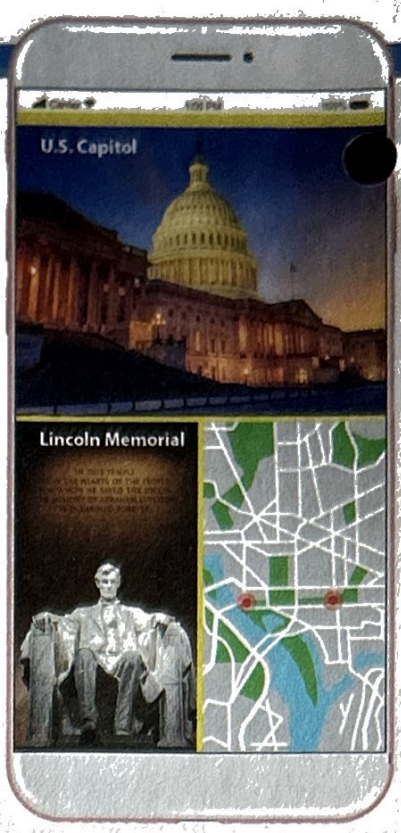
b. Ayana finds that 50% of the students visit the Capitol.

What number of students lines up with 50%? 150

This means 50 % of 300 students is 150 students.

c. Ayana finds that 0.1 of the students visit the Lincoln Memorial. Do more students visit the Capitol or the Lincoln Memorial? How do you know?

0.1 is the same as 10%. 10% is 30 students who visit the Lincoln Memorial. More students visit the Capitol (150)



DISCUSS IT

Ask: How could you use a double number line to find 25% of 300?

Share: In this situation, 100% represents . .

CONNECT IT

➤ **Complete the problems below.**

4 How do bar models and double number lines show percents in a similar way?

Both models show the whole and 100% broken up into equal parts.

5 Reynaldo is driving 200 miles. He has finished 80% of the drive. Draw a model to show 80% of Reynaldo's drive.