Name: _____

Class/Block: _____ Date: _____

<div style="border:2px solid #2e6e5e; text-align:center; padding:10px;">

Exploration: Ratio & Proportion Problems

</div>

Step 1: Launch the *Comparing Number Lines: Ratios & Proportions* applet.

- The first line (green) represents the whole; 50% of the whole 100% is shown by the dotted line.
- The second line (blue) represents the ratio 10 out of 40.
- The third line (orange) represents the ratio 10 of 20.

Step 2: Set up the following problem.

1.	Mike is on the soccer team. He has scored 3 goals in the first 4 games.
	How many goals will he have to score in 8 games to keep up the same rate of scoring?

a) First, **uncheck** the top part and whole. (Next to the green number line.)

b) Next, click on *blue dot* below the **Whole$_1$** and adjust it to **4**.

c) Then, adjust the **Part$_1$** to be **3** by clicking on the *blue dot* and dragging until the value is 3

d) Next, click the *orange dot* below **Whole$_2$** and adjust it to be 8.

e) Then, click on the checkbox to show the **Part$_2$** to be lining up with the blue **Part$_1$**.
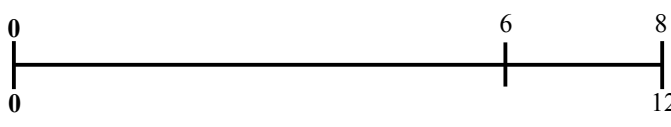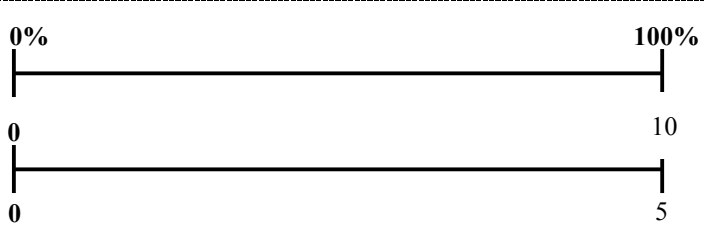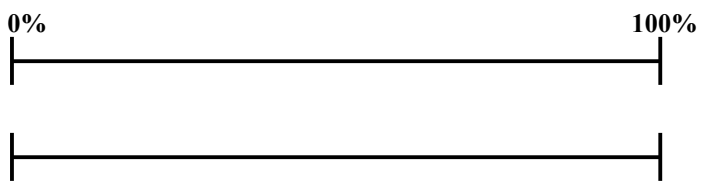

He will need to score a total of 6 goals in 8 games to have the same rate of scoring. (That means he will need to score 3 more goals in the next 4 games.)
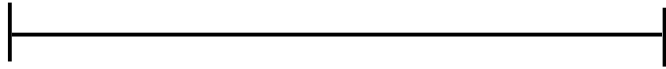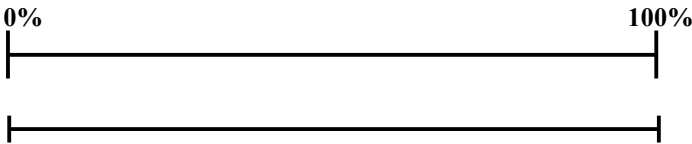
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Step 3: Solve the following problems using the applet.

#	Problem
2.	Angelica is on the soccer team. She has scored 6 goals in the first 8 games.
	How many goals will she have to score in 12 games to keep up the same rate of scoring?
3.	Cody and Kristin are on the same recreational soccer team. Cody has scored 7 goals in 10 games. Kristen only played in the last 5 games and she has scored 4 goals.
	a) Are their scoring rates proportional? If not, who has the higher scoring percentage?
	b) They both play 5 more games. Each of them scored 5 more goals. Are their scoring rates proportional? If not, who has the higher scoring percentage?

For problem 2:

0   6   8

0   12

For problem 3a:

0%   100%

0   10

0   5

For problem 3b:

0%   100%

4.	Sam is on the baseball team. He had 9 hits out of 16 times at bat last week. This week he has had 3 hits out of 4 times at bat.	
	a) Did Sam have a better percentage the first 16 times at bat or the last 4 times at bat? Explain how you know.	
	b) What is Sam's batting average? Explain how you know.	0% 100%
	c) How many hits would Sam have had to have in the first 16 at bats to have the same hitting percentage as the last 4 times he was at bat?	0% 100%