

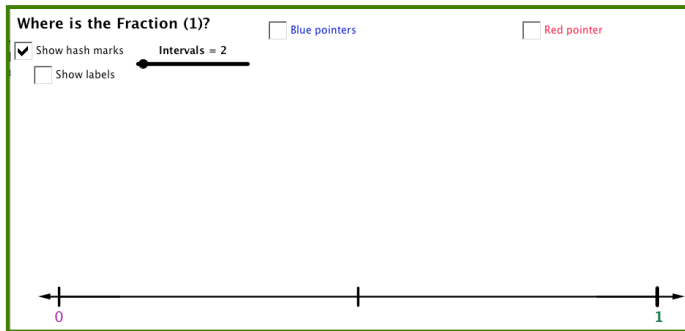
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## Exploration: Locating Fractions

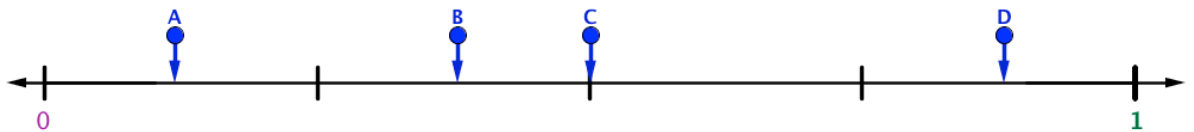
This exploration incorporates the use of a number line to deepen understanding of fraction concepts. During the activity you will explore the location of fractions as well as their relationship to other common fractions.

### Part I.

1. Launch the “*Where is the Fraction? (1)*” applet. This applet shows a number line from 0 to 1. Notice the **Show hash marks** checkbox is checked and the **Intervals** slider is set to 2.



2. Label the location of  $\frac{1}{2}$  below the appropriate hash mark **on the number line above**.  
- Click on **Show labels** on the applet to see the labels under the number line.
3. Predict where the number  $\frac{1}{4}$  is located **on the number line above**.  
- **Mark the location** on the representation **on the number line above**.  
- **Label the fraction** below the hash mark **on the number line above**.  
- **Move the interval slider to 4** on the applet.  
*Compare where you placed your mark and the location for  $\frac{1}{4}$  on the applet number line. Is your mark in the same location? (Make changes on the representation above if needed.)*
4. Check the **Simplify** checkbox. Look at the value below the middle of the number line. Uncheck the **Simplify** checkbox. Look at the value below the middle of the number line. What are two fractions that describe the value below the middle of the number line?
5. Look at the number line provided **below**.  
- Predict the values on the number line represented by points A, B, C, D  
- Provide a label for each value indicated by the pointers A, B, C, D on the number line



6. Explain how you decided the value indicated by each pointer.



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Check the **Blue pointers** check box on the applet.



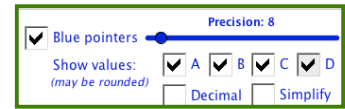
- **Move the Precision slider to 8**

- **Drag the A, B, C, and D pointers** to the locations shown on the number line in example 5.

- Click in the checkbox for the values of the A, B, C, and D pointers.


*Were your predictions accurate?*

*Make changes on the representation above if needed.*



7. Check the **Simplify** checkbox below the blue pointer checkboxes. Explain what happens. Uncheck the **Simplify** checkbox below the blue pointer checkboxes. What other fraction describes the value below the middle of the number line?

**BEFORE YOU CONTINUE:**

Refresh the applet by clicking  in the upper right corner of the applet. (Or reload the web page in your browser.)

**Part II.** Locate the fractions on the given number line. Add marks to the number line if needed.

Precision	Fractions	Number line
Set to 40	$\frac{1}{4}$ $\frac{1}{5}$ $\frac{3}{4}$ $\frac{2}{4}$	
Set to 50	$\frac{4}{5}$ $\frac{1}{5}$ $\frac{1}{10}$ $\frac{3}{5}$	
Set to 60	$\frac{3}{6}$ $\frac{5}{6}$ $\frac{2}{3}$ $\frac{1}{6}$	
Set to 80	$\frac{4}{8}$ $\frac{7}{8}$ $\frac{3}{4}$ $\frac{3}{8}$	
Set to 80	$\frac{5}{10}$ $\frac{6}{10}$ $\frac{9}{10}$ $\frac{4}{5}$	

**AFTER** you have made all your predictions on the number lines above, then go to the applet to check your answers. Click on the **Show labels** then move the **Intervals** slider to check.

