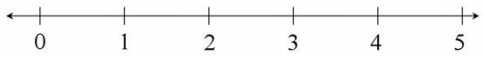
Illustrative Mathematics

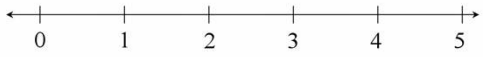
3.NF Locating Fractions Greater than One on the Number Line

Alignment 1: 3.NF.A.2

a. Draw points on the number line for $\frac{1}{2}$, $\frac{2}{2}$, $\frac{3}{2}$, $\frac{4}{2}$, $\frac{5}{2}$, and $\frac{6}{2}$. Label the points.



b. Draw a point on the number line for $\frac{11}{3}$. Label the point. Be as exact as possible.



Commentary:
This first part of this task requires students to represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a intervals of length $\frac{1}{b}$ (in this case $\frac{1}{2}$) starting at 0.

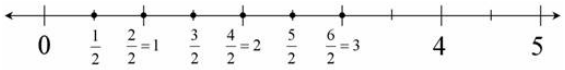
Students may solve the second part of the task either by marking of 11 intervals of length $\frac{1}{3}$ or by knowing that $\frac{11}{3}$ is $\frac{2}{3}$ of the way between 3 and 4. Although a few students may be able to do it using the later of these approaches, most students will identify all of the points related to $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$, etc., even if they do not label those points.

The following lists related tasks in order of sophistication:

- Locating Fractions Less than One on the Number Line
- Locating Fractions Greater than One on the Number Line
- Closest to $\frac{1}{2}$
- Find 1
- Find $\frac{2}{3}$
- Which is Closer to 1?

Solution: 3.NF.2 Marking lengths

a. Here is one way to draw and label the number line for this task:



b. Here is one way to draw and label the number line for this task: