Fractions on a Number Line

GOAL

Use number lines to compare and order fractions.

Sydney is hoping that her friend Lauren will win the bicycle race.

Positions of Racers

| Racer	Racer's position after 10 min
Lauren	$\frac{2}{3}$ of the way to the finish line
Cara	$\frac{4}{10}$ of the way to the finish line
René	$\frac{4}{5}$ of the way to the finish line
Matthew	$\frac{1}{2}$ of the way to the finish line

Which racer is in the lead?

Sydney's Number Line

I can use fraction strips to make a number line and compare the fractions. To make the number line, I'll draw a line from one end of a whole fraction strip to the other end.
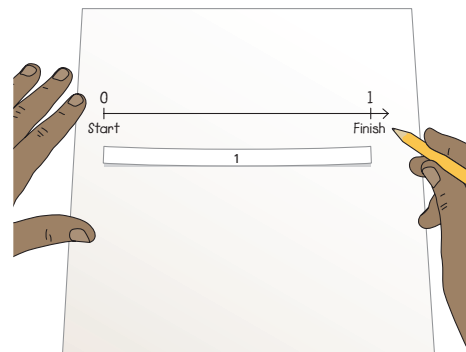
I need to find $\frac{2}{3}$ on the number line to mark Lauren's position.
I'll use a thirds fraction strip to mark thirds on my number line.
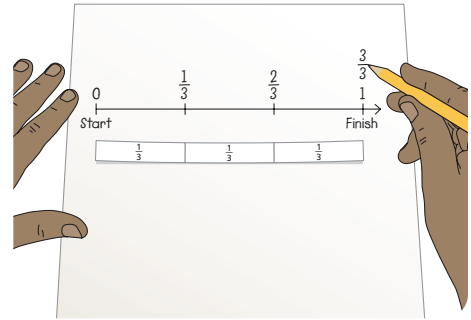
Reading Strategy

Visualizing

In your mind, make a picture of where you think each fraction will go on the number line.

A. Use fraction strips to make a number line like Sydney's. Mark the fractions $\frac{1}{3}$, $\frac{2}{3}$, and $\frac{3}{3}$ on your number line. Then mark Lauren's position on your number line.

B. Use a different fraction strip to help you find Cara's position on your number line. Use a different colour to label the fractions and Cara's position.

C. Use different fraction strips to find the other racers' positions on your number line. Use different colours to label the positions of these other racers.

D. Which racer is in the lead? How do you know?

Reflecting

E. How can you use the denominator of a fraction to locate the fraction on a number line? How can you use the numerator?

F. How can you use a number line to decide which of two fractions is greater?

Checking

1. This chart shows the positions of the racers later in the race.

Positions of Racers

Racer	Racer's position after 15 min
Lauren	$\frac{5}{6}$ of the way to the finish line
Cara	$\frac{3}{5}$ of the way to the finish line
René	$\frac{9}{10}$ of the way to the finish line
Matthew	$\frac{3}{4}$ of the way to the finish line

a) Which racer do you think is closest to the finish line? Explain your prediction.

b) Check your answer for part a) by placing the new positions of the racers on your number line.

Practising

2. Remi and his friends are playing Penny Football. Each player gets three chances to flick a penny to the end of the table. The chart at the left shows the positions of the pennies along the table after the first flick. Use a number line to show the order of the pennies from the starting line to the end of the table.

3. Sketch a number line to arrange the following fractions from least to greatest.

$$\frac{1}{6}, \frac{2}{3}, \frac{5}{6}, \frac{1}{2}, \frac{1}{5}$$

4. Shana, Alyssa, and Fawn had 30 min to eat their lunches. Shana took $\frac{4}{6}$ of the time, and Alyssa took $\frac{1}{3}$ of the time. Fawn took 15 min to eat. Who took the longest time to eat her lunch? Use a number line to explain.

5. Why is using a fraction number line a useful strategy for comparing and ordering fractions?

First Penny Flick

Player	Position of penny
Kiana	$\frac{1}{5}$
Amanda	$\frac{1}{2}$
Jacinta	$\frac{3}{4}$
Remi	$\frac{3}{5}$