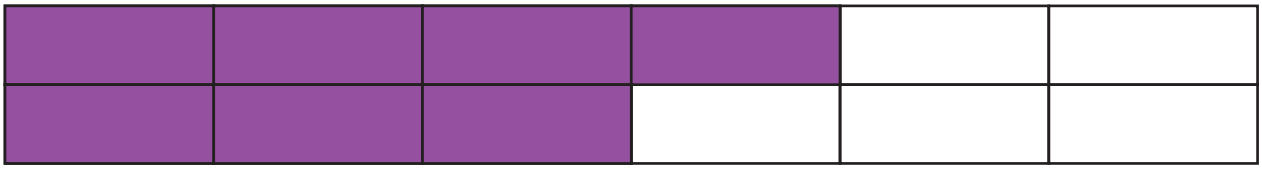
Building a Better Bike

Bicycles today are highly specialized and are often designed with a certain type of rider in mind. Your group will modify a generic bike to create a bike that is faster, better for tricks, or more comfortable. Once you decide on the type of bike you want to design, you will receive a list of modifications.

Before getting started with the bicycle design, your group needs to demonstrate understanding of how to add and subtract fractions with unlike denominators. You will use two different strategies to add and subtract.

Use the model below to show $\frac{1}{6} + \frac{5}{12}$. Explain why the model shows $\frac{1}{6} + \frac{5}{12}$.



I divided the whole into 6 pieces because I know I need 1/6. I shaded 1 piece. I know that if I divide each of the 6 pieces by 2, I will have 12 pieces, which is what I need for 5/12. I shaded in another 5 of the smaller pieces. Then I counted up the total number of shaded pieces, which is 7, and put it over the total number of pieces in the whole, which is 12. I ended up with 7/12.

Use a common denominator to add $\frac{1}{6} + \frac{5}{12}$. Be sure to show or explain how you found the answer.

$$\frac{1}{6} + \frac{5}{12} = \frac{(1x2)}{(6x2)} + \frac{5}{12} = \frac{2}{12} + \frac{5}{12} = \frac{7}{12}$$

Once everyone in your group understands how to add $\frac{1}{6}$ and $\frac{5}{12}$, go online and follow the directions to decide what kind of bike you want to design.