

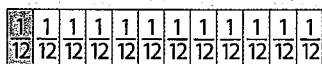
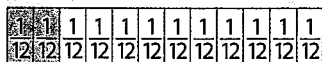
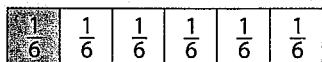


Connect and Reflect

Key Ideas

- You can model the division of a fraction by a whole number using manipulatives such as fraction strips or pattern blocks. The size of the whole is always 1 and does not need to be a single manipulative.

$$\frac{1}{6} \div 2 = \frac{1}{12}$$

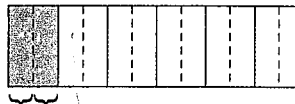
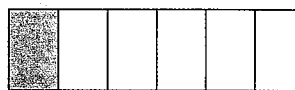
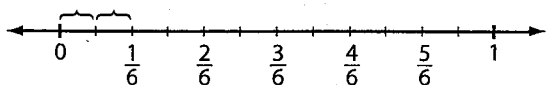
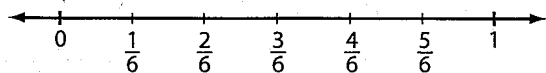


If two hexagons represent one whole, then one rhombus represents one sixth.



- You can model the division of a fraction by a whole number using diagrams such as a number line or rectangle.

$$\frac{1}{6} \div 2 = \frac{1}{12}$$



Practise

For help with #1 and #2, refer to Examples 1 and 2 on pages 139–140.

- Determine each quotient using manipulatives or diagrams.

a) $\frac{1}{4} \div 2$

b) $\frac{1}{3} \div 3$

c) $\frac{1}{5} \div 2$

d) $\frac{5}{6} \div 4$

- Determine each quotient.

a) $\frac{3}{5} \div 2$

b) $\frac{1}{5} \div 3$

c) $\frac{1}{2} \div 4$

d) $\frac{2}{3} \div 6$

Apply

For help with #3 to #5, refer to Example 3 on page 140.

- Explain in your own words what the division statement $\frac{2}{3} \div 2 = \blacksquare$ means. Give an example of a situation in which this statement may be used.

4. Two South Indian fish curries, called dhopa and molee curry, both include coconut.

a) You need $\frac{1}{2}$ of a coconut to make 2 servings of dhopa. What fraction of a coconut is in each serving?

b) You need $\frac{1}{2}$ a coconut to make 4 servings of molee. What fraction of a coconut is in each serving?

5. A 1-L pitcher of orange juice is $\frac{2}{3}$ full. If 4 students share the juice equally, what fraction of the full pitcher does each student get?



6. Lana decides to model the division $\frac{2}{3} \div 3$ using a fraction strip divided into sixths. Can you use this fraction strip to solve the problem? Explain.

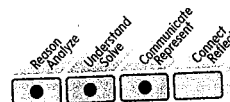
7. Explain how you would use pattern blocks to model $\frac{2}{3} \div 3$.

8. Ingrid runs 3 laps of a track in $\frac{1}{4}$ h for her school track team. On average, how much time does she take to run 1 lap? Express your answer

a) as a fraction of an hour

b) in minutes

9. Seung uses $\frac{3}{5}$ of a full charge on his tablet when he streams 2 h of music. On average, what fraction of a full charge is used for each hour of streaming music? If Seung wants to use his tablet to stream music for a 3-h dance, would he have enough battery power without recharging? Explain.




10. Iqaluit has frost on about $\frac{3}{4}$ of the days in a year. It has frost on 5 times as many days as Vancouver.

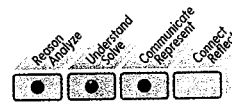
a) On what fraction of the days of the year does Vancouver have frost?

b) Which months are most likely to have frost?



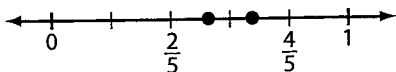
11. It takes $\frac{4}{5}$ of a roll of ribbon to wrap 6 packages. What fraction of a roll does it take to wrap 3 packages?

12. The Montane Cordillera and Boreal Cordillera ecozones have approximately equal areas. The total area of these two ecozones equals about $\frac{1}{10}$ of the area of Canada. What fraction of the area of Canada does each ecozone cover?
13.  **Competency Check** Create your own word problem that involves the division of a proper fraction by a whole number. Make sure that you can solve your problem. Give your problem to a classmate to solve.



Extend

14. When dividing a proper fraction, which scenario will result in the smallest quotient? Explain.
- A Dividend close to 1 and a small natural number divisor
 - B Dividend close to 1 and a large natural number divisor
 - C Dividend close to $\frac{1}{2}$ and a small natural number divisor
 - D Dividend close to $\frac{1}{2}$ and a large natural number divisor
15. Two fractions are equally spaced between $\frac{2}{5}$ and $\frac{4}{5}$. Determine the two fractions.



16. a) Show how you could model $\frac{2}{5} \div 4 = \frac{1}{10}$.
- b) Explain how your method shows that $\frac{2}{5} \div \frac{1}{10} = 4$.
17. After a party, $\frac{2}{3}$ of a rectangular pan of brownies is left over. If 6 friends want to share the brownies equally, how much would each person receive? Draw a diagram to show how you could cut the remaining brownies to make sure each person receives an equal-sized piece. How would you cut it if it was a round pan of brownies?

