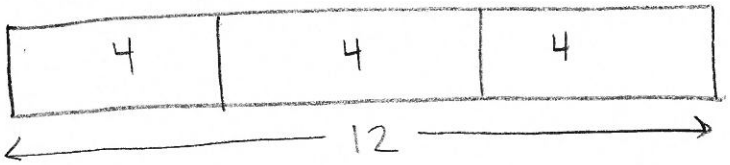
Lesson 3: Interpreting and Computing Division of a Fraction by a Fraction—More Models

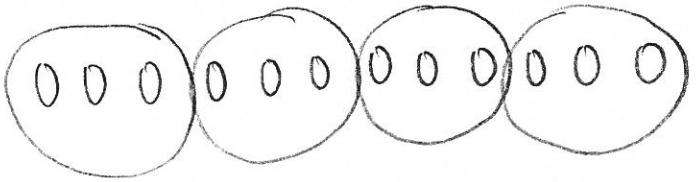
Classwork

Opening Exercise

Draw a model to represent 12 ÷ 3.



Fair share



Grouping

Create a question or word problem that matches your model.

Fair share: Amy have 12 pounds of candy. She puts it equally into 3 bowls. How many pounds are in each bowl?

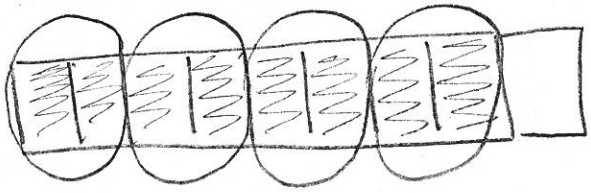
Grouping: The dog catcher catches 12 dogs. She puts 3 dogs in each cage. How many cages does the catcher need?

Example 1

$\frac{8}{9} \div \frac{2}{9}$

Write the expression in unit form, and then draw a model to solve.

8 ninths ÷ 2 ninths

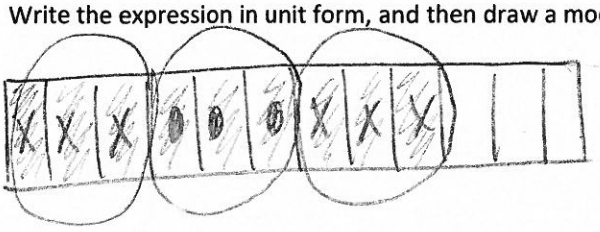


= 4 groups

Example 2

$\frac{9}{12} \div \frac{3}{12}$

Write the expression in unit form, and then draw a model to solve.

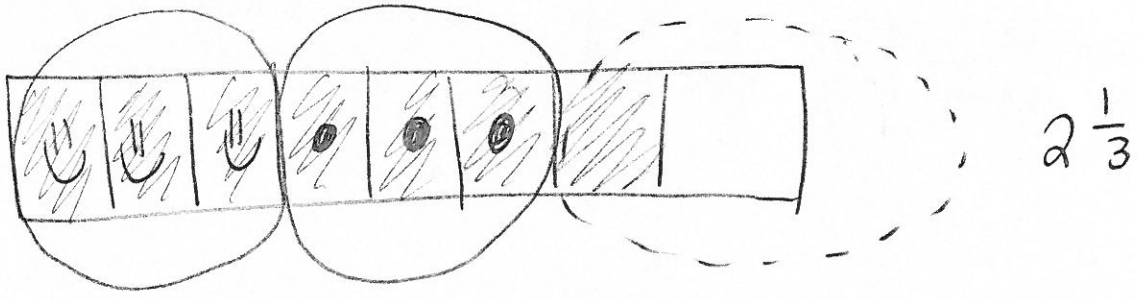


9 twelfths ÷ 3 twelfths = 3

Example 3

$\frac{7}{9} \div \frac{3}{9}$

Write the expression in unit form, and then draw a model to solve.



$2\frac{1}{3}$

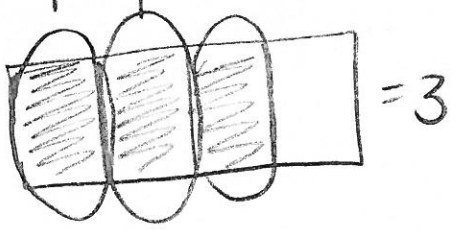
$\frac{7}{9} \times \frac{3}{9} = \frac{21}{39}$

Exercises 1–6

Write an expression to represent each problem. Then, draw a model to solve.

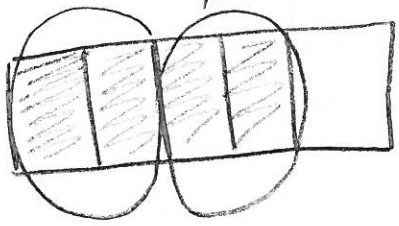
1. How many fourths are in 3 fourths?

$\frac{3}{4} \div \frac{1}{4} = \frac{3}{4} \times \frac{4}{1} = \frac{3}{1} = 3$



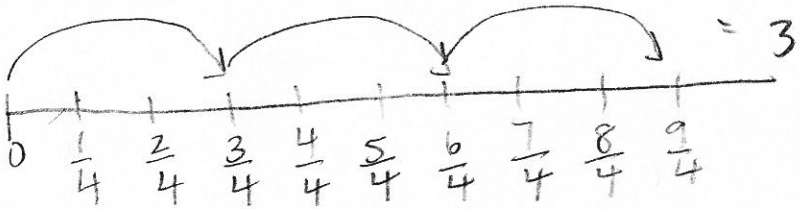
$= 3$

2. $\frac{4}{5} \div \frac{2}{5} = \frac{4}{\cancel{5}} \times \frac{\cancel{5}}{2} = \frac{4}{2} = 2$

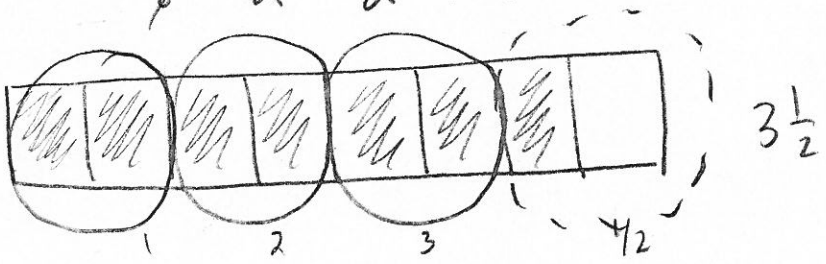


$= 2$

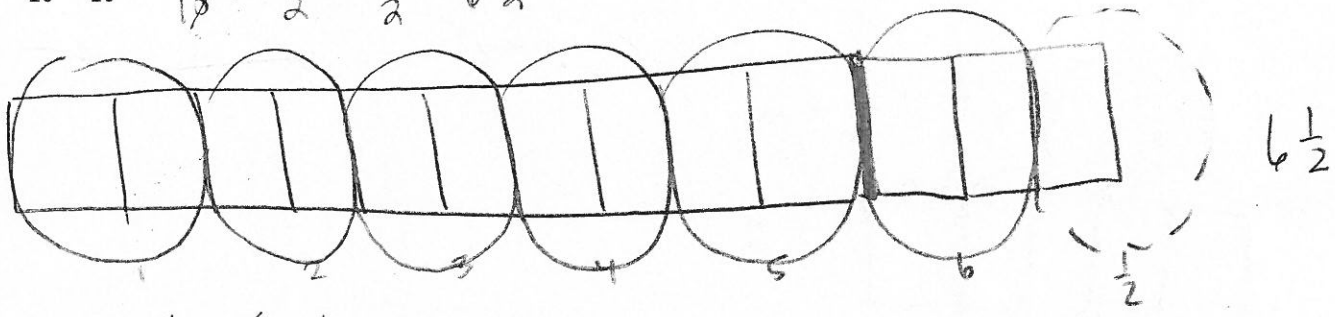
3. $\frac{9}{4} \div \frac{3}{4} = \frac{9}{4} \times \frac{4}{3} = \frac{9}{3} = 3$



4. $\frac{7}{8} \div \frac{2}{8} = \frac{7}{8} \times \frac{8}{2} = \frac{7}{2} = 3\frac{1}{2}$



5. $\frac{13}{10} \div \frac{2}{10} = \frac{13}{10} \times \frac{10}{2} = \frac{13}{2} = 6\frac{1}{2}$



6. $\frac{11}{9} \div \frac{3}{9} = \frac{11}{9} \times \frac{9}{3} = \frac{11}{3} = 3\frac{2}{3}$