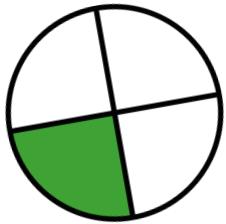


# Sense of Number Visual Fractions Policy

Newchurch Community Primary School  
December 2014



$\frac{1}{4}$

Graphic Design by Dave Godfrey

Compiled by the Sense of Number Maths Team

For sole use within Newchurch Community Primary School.

**'A picture is worth 1000 words!'**

[www.senseofnumber.co.uk](http://www.senseofnumber.co.uk)



# Guide to using a $\frac{1}{4}$ Visual Fractions Policy

**The Sense of Number Visual Fractions Policy provides a visual representation of the progression found within Domain 4: Fractions in the new National Curriculum.**

**A school branded VFP is created by Dave Godfrey for individual schools when the school logo and school name are added to the footer of each slide.**

## **Typical uses:**

**Classroom:** The slides are printed out (e.g. A4) and the appropriate slides are displayed within each classroom for continual reference or on a working wall.

**Teacher Reference:** The slides are printed out (e.g. 9 slides per A4 page) and inserted in the teacher's planning folder.

**Parents:** The slides are used to communicate to parents the school's approach to teaching fractions.

**Website:** Selected slides from the VFP are inserted onto a school's maths webpages. (Please note: the VFP should not be made available for download.)

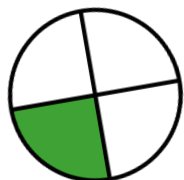


# Sections in the $\frac{1}{4}$ Visual Fractions Policy

**1-4 Introduction Slides**

**5-15 General Fractions Slides: Vocab, Defining, Types, 1 Whole, Walls etc.**

Pages	Code	Years	Theme
16-23	FA	Y2-Y6	Counting in Fractions
24-27	FB	Y2-Y5	Fractions as a Number
28-36	FC	Y1-Y3	Recognising and naming Unit & Non-Unit Fractions
37-40	FD	Y3-Y5	Ordering Fractions
41-47	FE	FS-Y5	Finding and naming a Fraction of a Quantity
48-61	FF	Y1-Y6	Equivalent Fractions
62-65	FG	Y3-Y6	Decimal/Fraction/Percentage Equivalences
66-76	FH	Y2-Y6	Common FDP Equivalences & FDP Walls
77-91	FI	Y2-Y6	Fractions to 1
92-95	FJ	Y2-Y5	Fractions Greater than 1
96-116	FK	Y1-Y6	Calculating with Fractions (+, -, x, ÷)
117-123	FL	Y3-Y6	Division as a Fraction
124-125	FM	Y5-Y6	Jump! and Remainders



# Year Group

## Specific Slide Locations

$\frac{1}{4}$

Section	FS	Y1	Y2	Y3	Y4	Y5	Y6
<b>FA: Counting</b>			16,17	18,19	20,21	22,23	
<b>FB: Number</b>			24	25	26	27	
<b>FC: Recognising</b>		28,29	30,31	32-35	36		
<b>FD: Ordering</b>				37,38		39,40	
<b>FE: Quantity</b>	41	42,43	44	45	46	47	
<b>FF: Equivalence</b>			48-50	51-54	55-59	60	61
<b>FG: FDP Equiv.</b>				62	63	64,65	
<b>FH: Common FDP</b>					66	67-70	71-76
<b>FI: Fractions to 1</b>			77,78	79-83	84-88	89,90	91
<b>FJ: &gt; 1</b>			92	93	94	95	
<b>FK: Addition</b>		96	97	98	99	100	101,102
<b>FK: Subtraction</b>				103	104	105	106,107
<b>FK: Multiplication</b>						108,109	110,111
<b>FK: Division</b>						112,113	114-116
<b>FL: Div. as a Fractn.</b>				117	118,119	120,121	122,123
<b>FM: Extras</b>						124	125



# Fractions Vocabulary

0.2

share equally

simplify

equivalence

1

5

out of

cancel

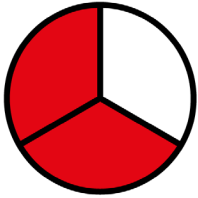
20%

equal parts

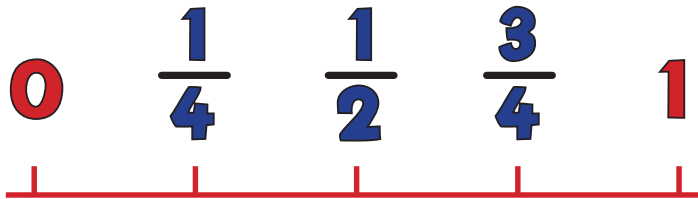


# Defining a Fraction

$$\frac{2}{3}$$

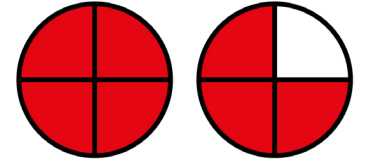


Equal Parts  
of a Whole



A Number

$$\frac{7}{4}$$



More than a  
Whole

$$\frac{1}{5} = 1 \div 5$$

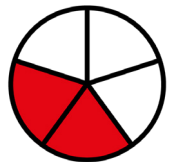
A Division

$$\frac{1}{4} \text{ of } 16$$



A Fraction of an  
Amount

$$\frac{2}{5} = 40\%$$
$$= 0.4$$



An  
Equivalence



# Parts of a Fraction

$$\frac{1}{4}$$

**Numerator**

**Denominator**

**“Fractions is sharing equally”**

**Fraction Bar (Vinculum)**



# Types of Fractions

$$\frac{1}{5}$$

**Unit  
Fraction**

(Numerator = 1)

$$\frac{3}{5}$$

**Non-unit  
Fraction**

(Numerator > 1)

$$\frac{2}{5} \text{ or } \frac{4}{5}$$

**Proper  
Fraction**

(Numerator < Denominator)

$$\frac{8}{5} \text{ or } \frac{12}{5}$$

**Improper  
Fraction**

(Numerator > Denominator)

$$1\frac{3}{5}$$

**Mixed  
Fraction**

(Whole number +  
Proper Fraction)

$$\frac{4}{5} \text{ or } \frac{8}{5}$$

**Vulgar  
Fraction**

(Proper or  
Improper Fraction)



# Naming a Fraction

If the **numerator** is 1,  
the **denominator** is 10,  
then the name of my  
fraction is **one tenth**.

$$\frac{1}{10}$$

$$\frac{1}{2}$$

One half

$$\frac{1}{6}$$

One sixth

$$\frac{3}{4}$$

Three quarters

$$\frac{5}{5}$$

Five fifths -  
One Whole!

$$\frac{7}{3}$$

Seven thirds

$$\frac{27}{32}$$

Twenty-seven  
thirty-seconds

# Fraction Wall

(1/2)

$$\frac{1}{3}$$

$$\frac{3}{8}$$

$$\frac{4}{4}$$

$$\frac{3}{2}$$

$$\frac{7}{10}$$

$$\frac{7}{8}$$

$$\frac{3}{4}$$

$$\frac{1}{4}$$

$$\frac{5}{9}$$

$$\frac{1}{2}$$

$$\frac{2}{2}$$

$$\frac{9}{2}$$

$$\frac{7}{10}$$

$$\frac{2}{4}$$

$$\frac{1}{9}$$

$$\frac{7}{4}$$

$$\frac{3}{8}$$

$$\frac{5}{5}$$

# Fraction Wall

(2/2)

$$\frac{2}{3}$$

$$\frac{9}{8}$$

$$\frac{1}{91}$$

$$\frac{5}{2}$$

$$\frac{30}{10}$$

$$\frac{8}{32}$$

$$\frac{3}{7}$$

$$\frac{8}{12}$$

$$\frac{5}{19}$$

$$\frac{14}{14}$$

$$\frac{31}{5}$$

$$\frac{17}{2}$$

$$\frac{7}{15}$$

$$\frac{2}{6}$$

$$\frac{11}{3}$$

$$\frac{12}{4}$$

$$\frac{3}{8}$$

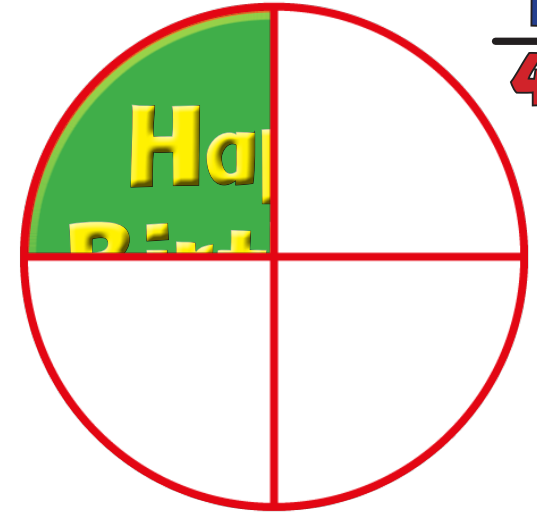
$$\frac{9}{9}$$

# A Fraction of a Whole

$\frac{1}{2}$



$\frac{1}{4}$



$\frac{5}{16}$



$\frac{3}{8}$



**1 whole cake!**

# Fractions: 1 Whole



**1 whole pack  
of 6 cans**

1

1

(1 whole)



**1 whole box of 12 eggs**

1



**1 whole pack  
of 4 balls**

1



**1 whole pack of  
7 pens**

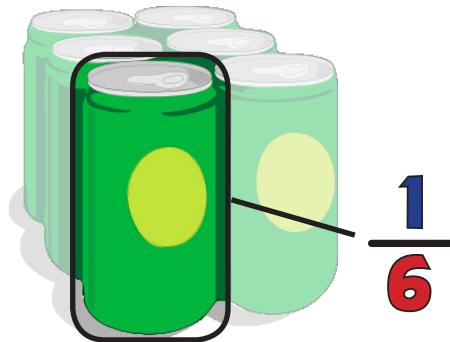
1



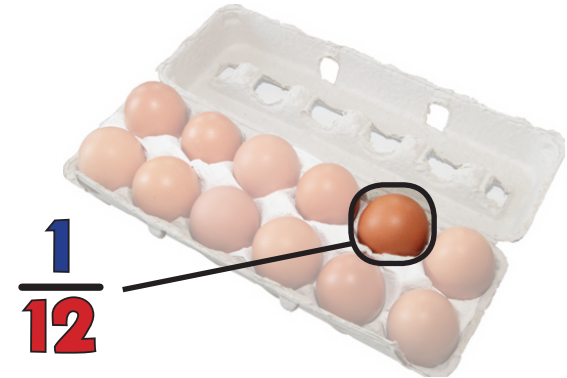
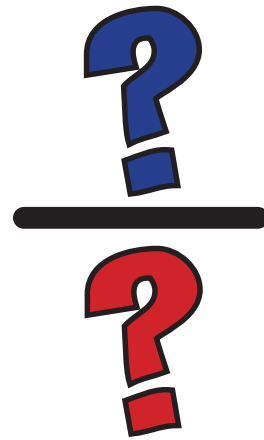
**1 whole bunch  
of 5 bananas**

1

# A Fraction of a Whole



**1 can from the whole  
pack of 6 cans**



**1 egg from the whole  
box of 12 eggs**

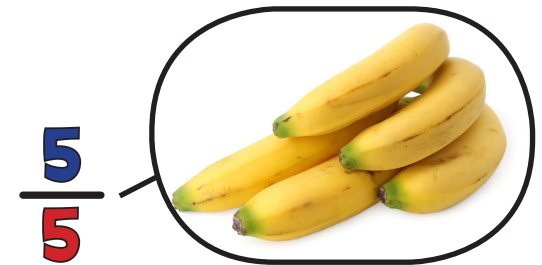
**(A fraction of a whole)**



**2 balls from the whole  
pack of 4 balls**



**3 pens from the  
whole pack of 7 pens**



**5 bananas from  
the whole  
bunch of 5  
bananas**



# Fractions are Everywhere!



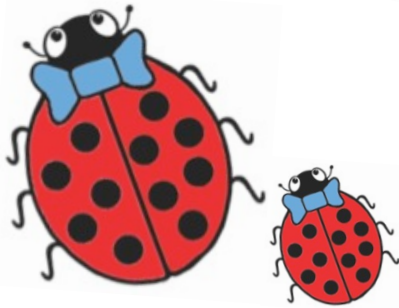
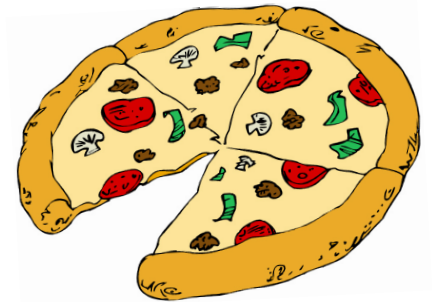
**No!**  **Yes!**  
**55%** **45%**

**HALF  
PRICE!**

**3 OUT OF 2  
PEOPLE  
HAVE  
TROUBLE  
WITH  
FRACTIONS**



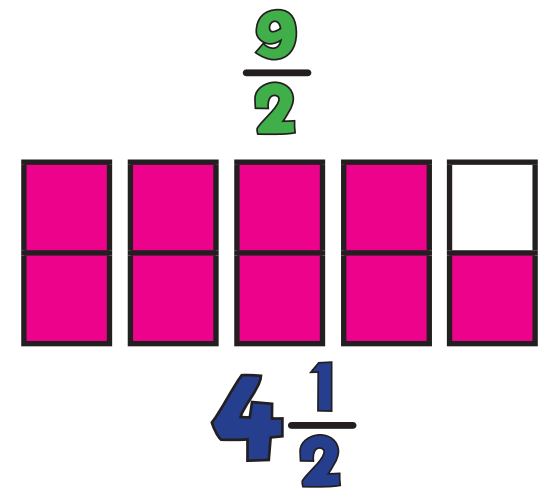
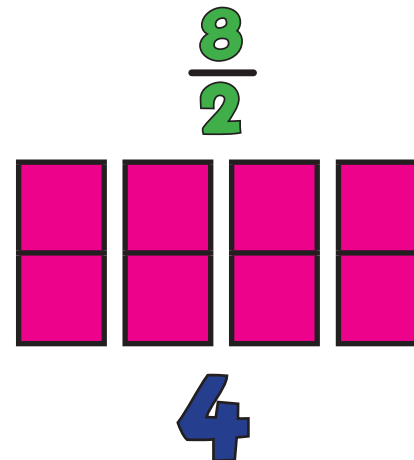
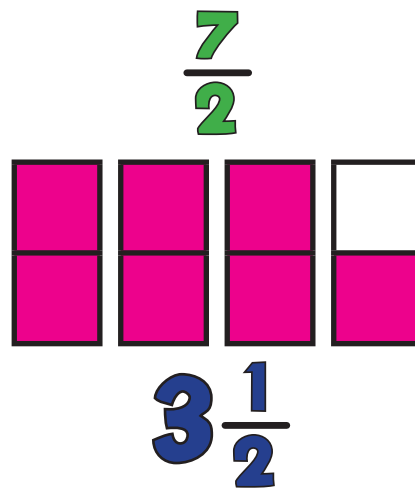
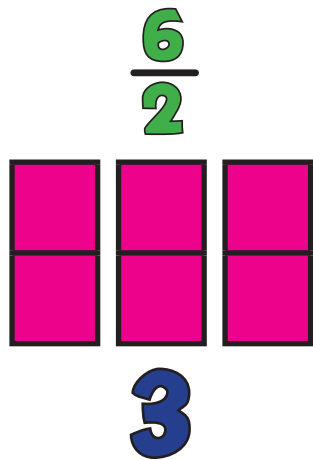
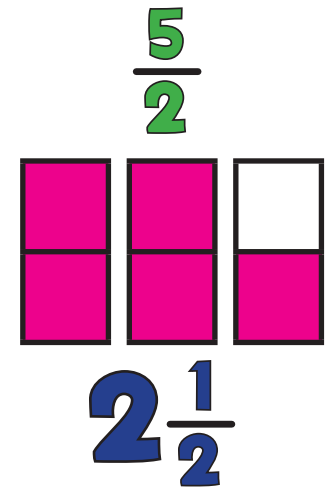
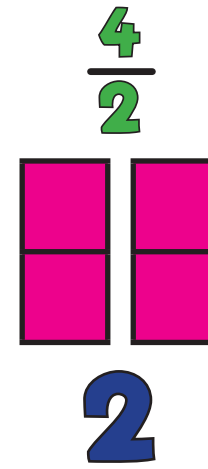
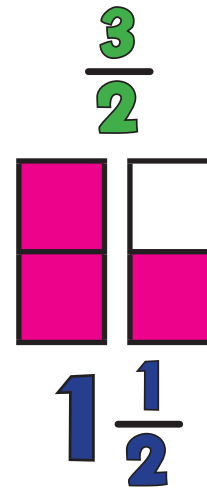
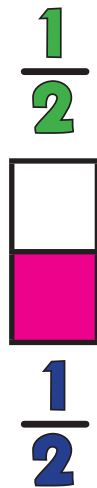
**£2.65**





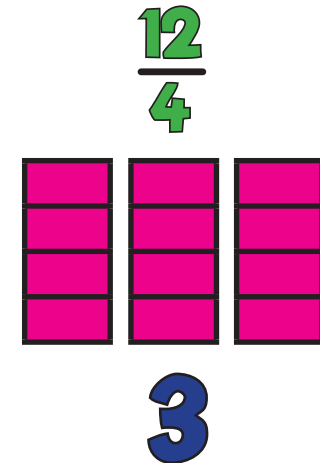
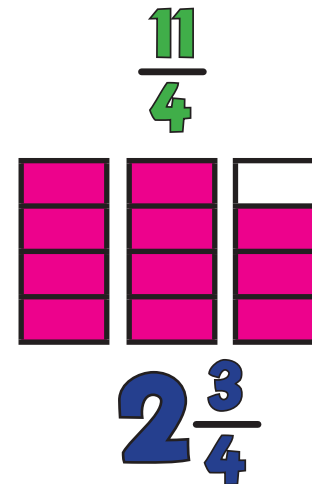
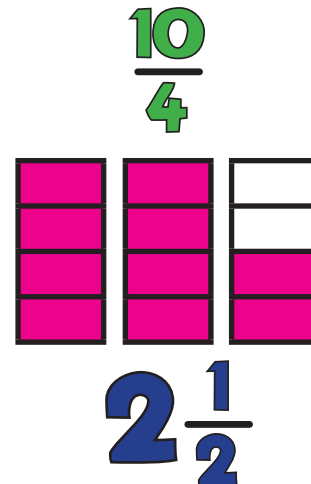
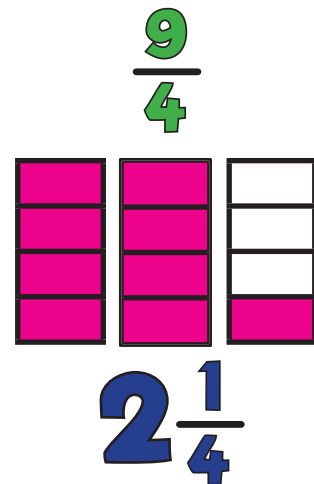
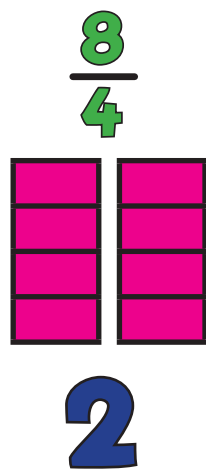
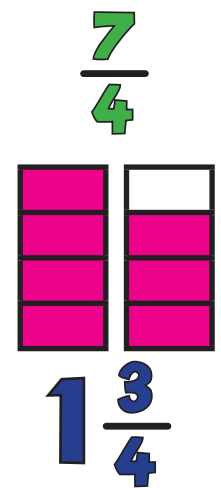
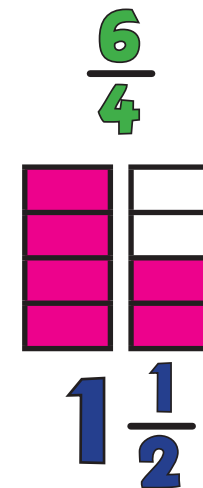
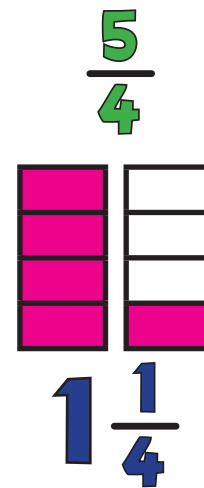
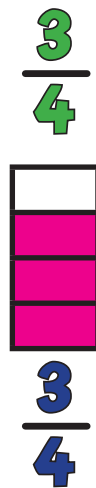
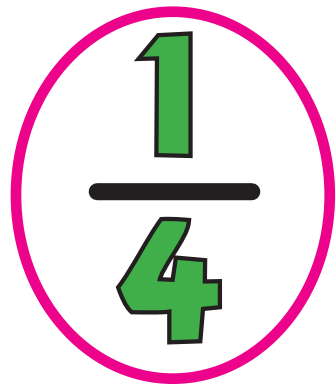
# FA: Counting in Fractions

2a



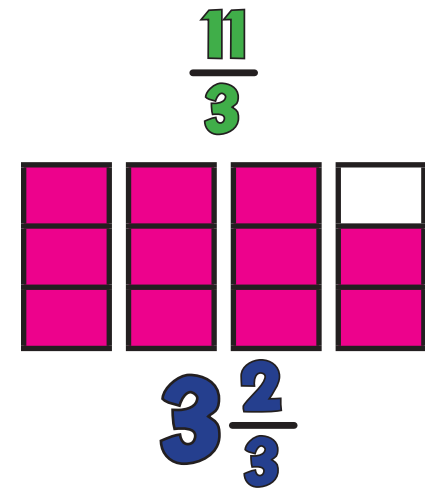
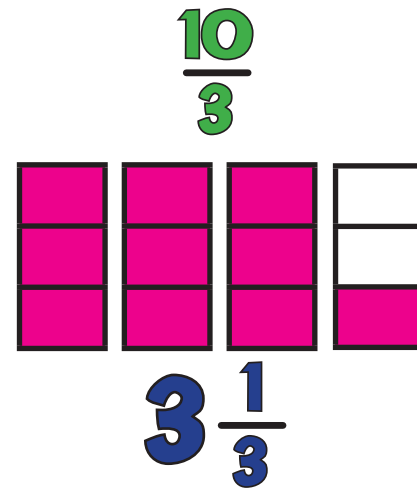
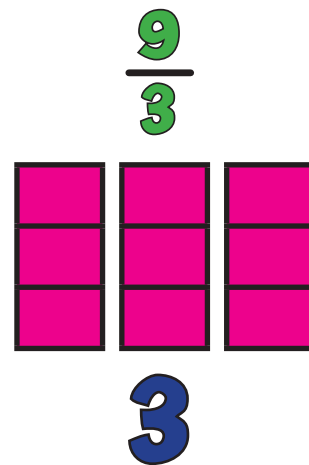
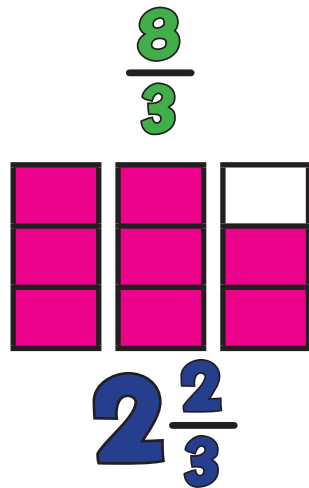
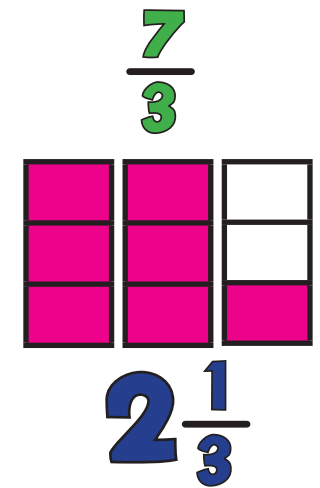
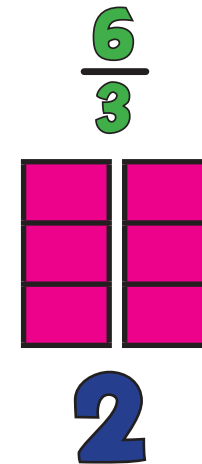
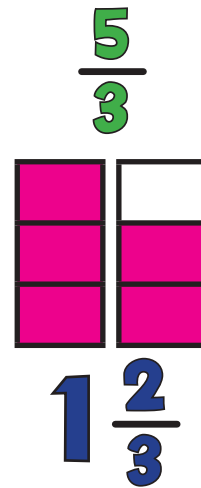
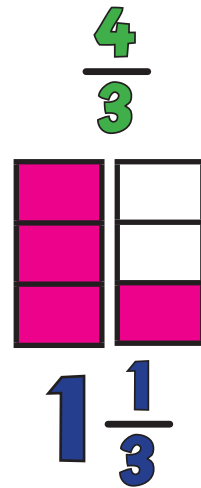
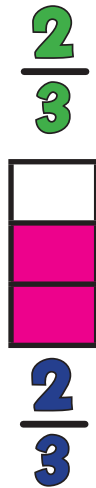
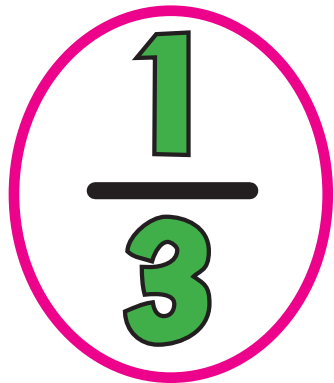
# FA: Counting in Fractions

2b



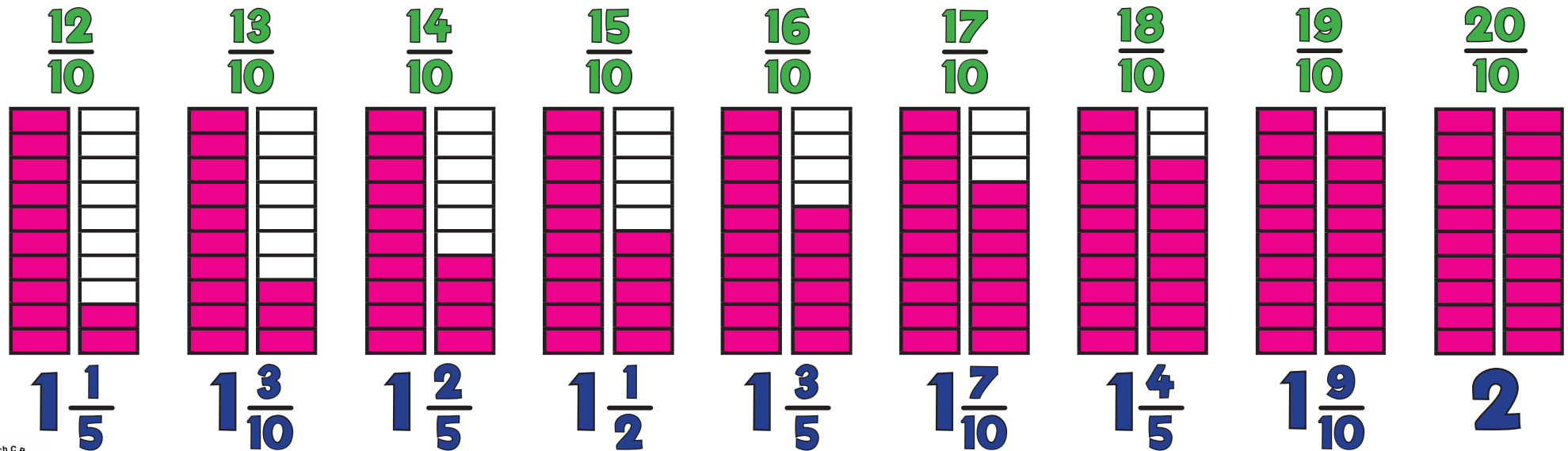
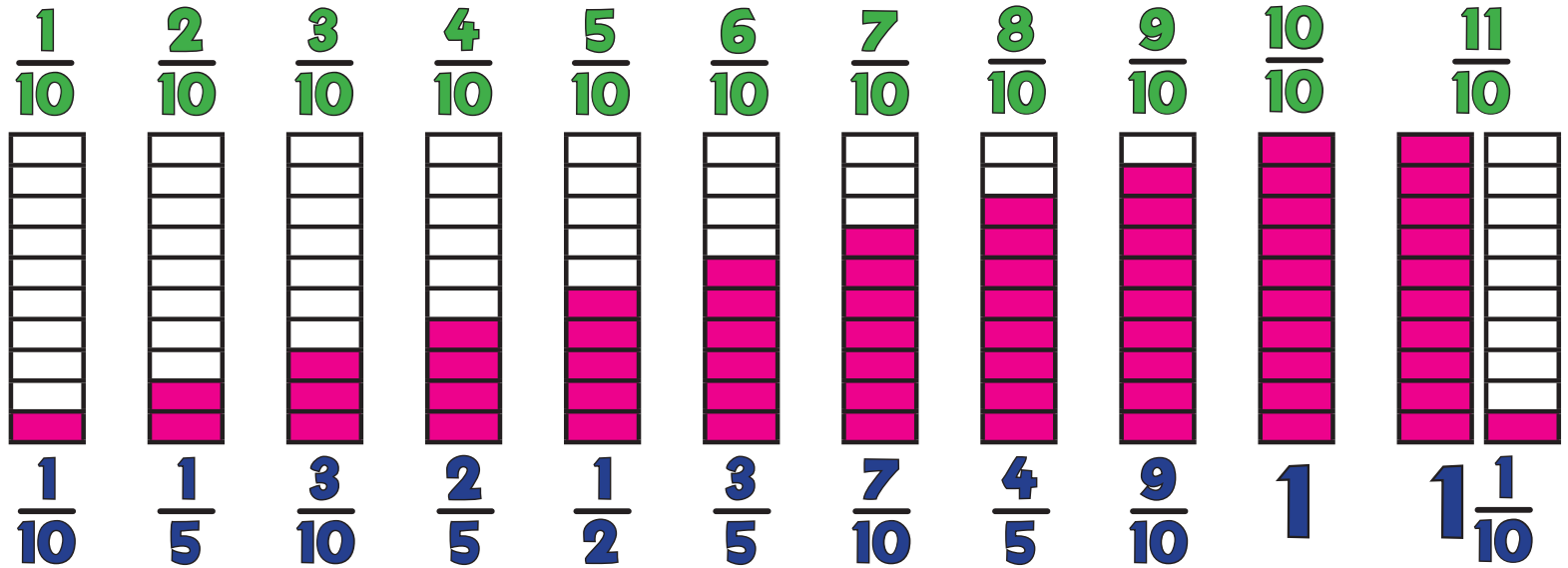
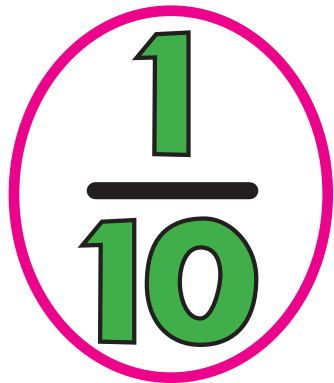
# FA: Counting in Fractions

3a



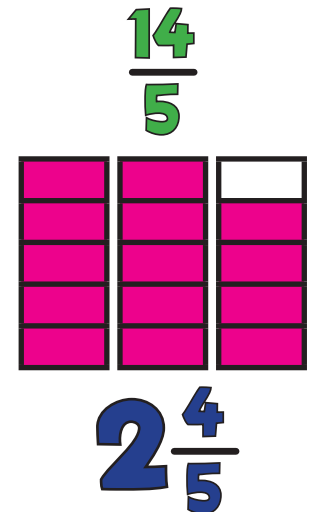
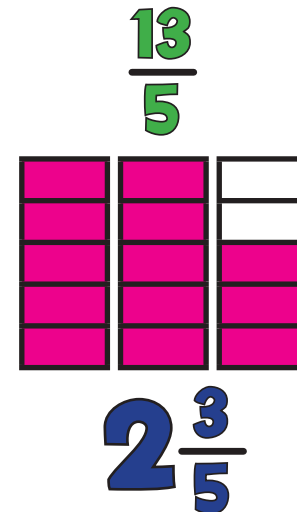
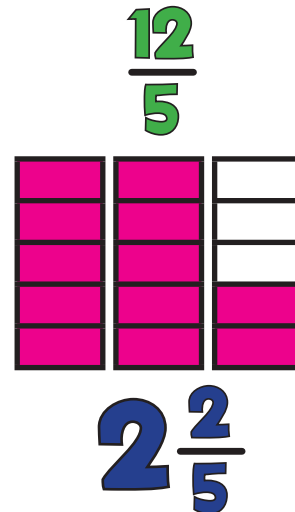
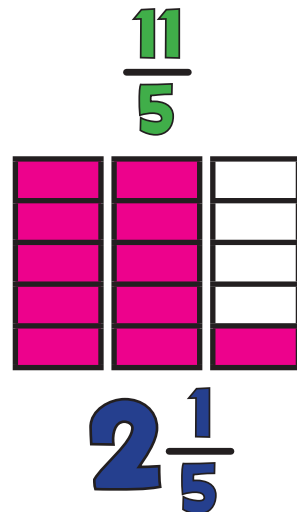
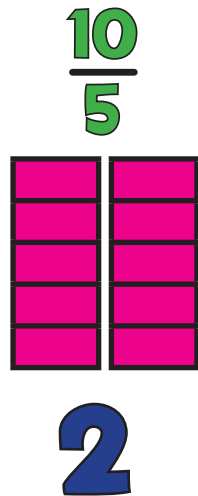
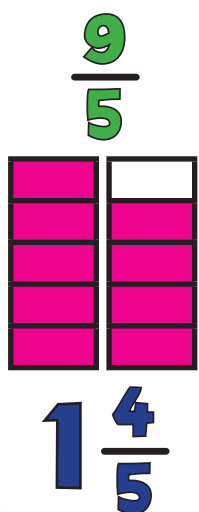
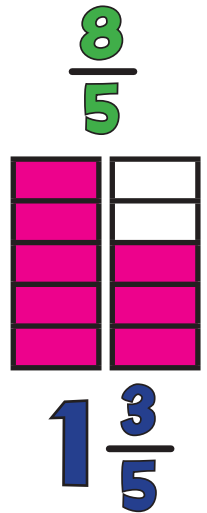
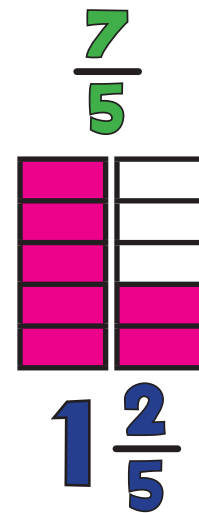
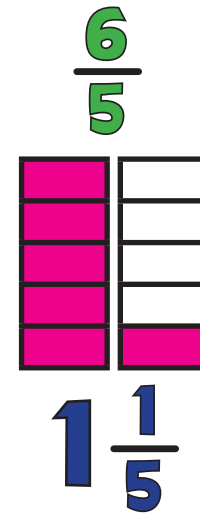
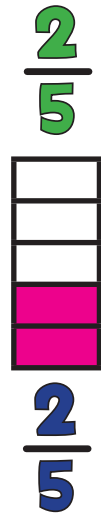
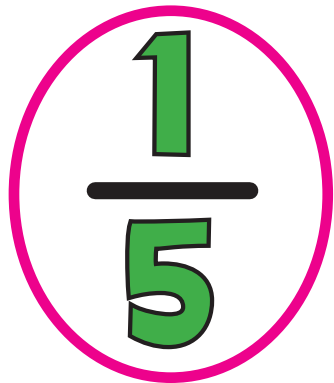
# FA: Counting in Fraction

3b



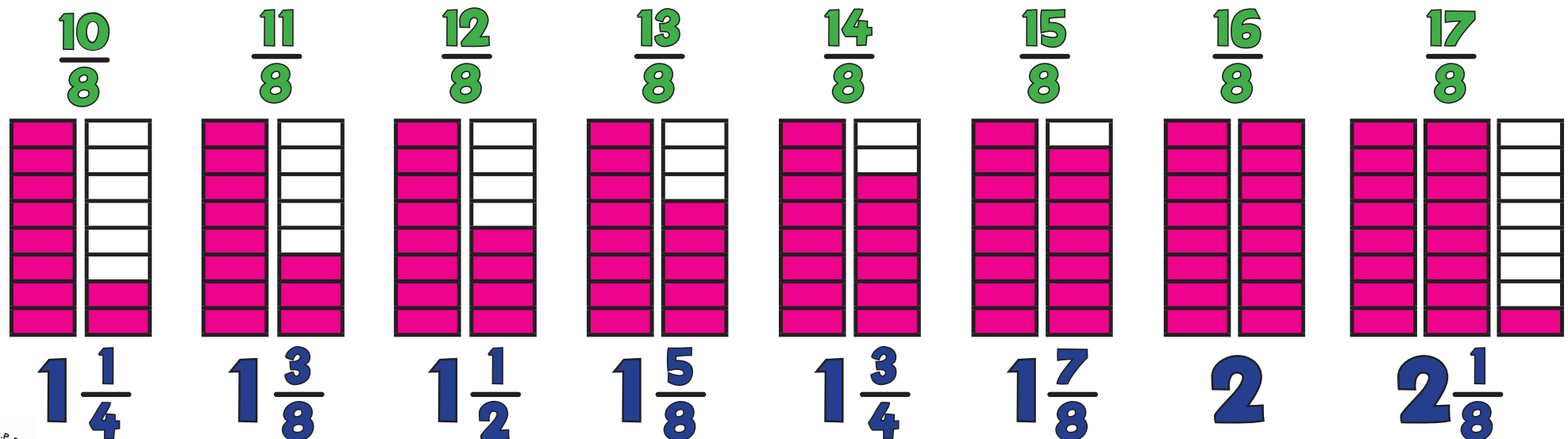
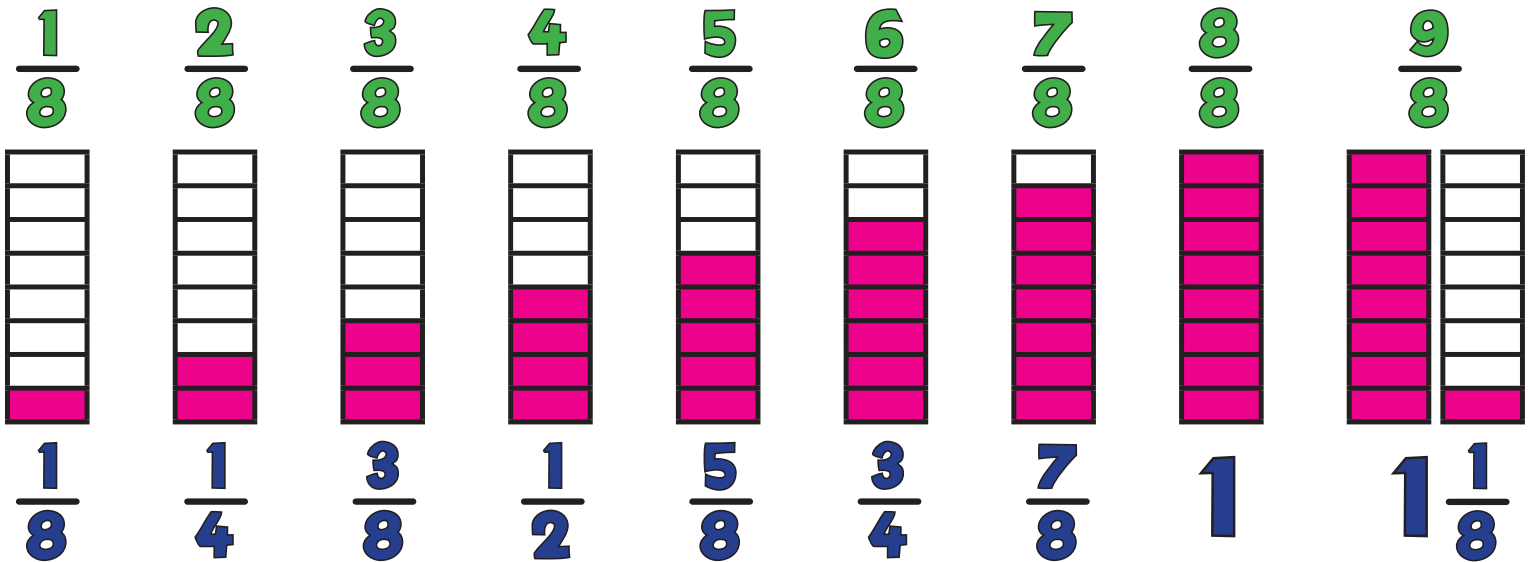
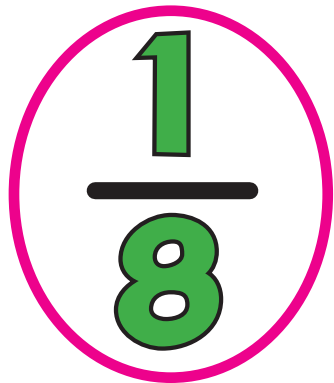
# FA: Counting in Fractions

4a



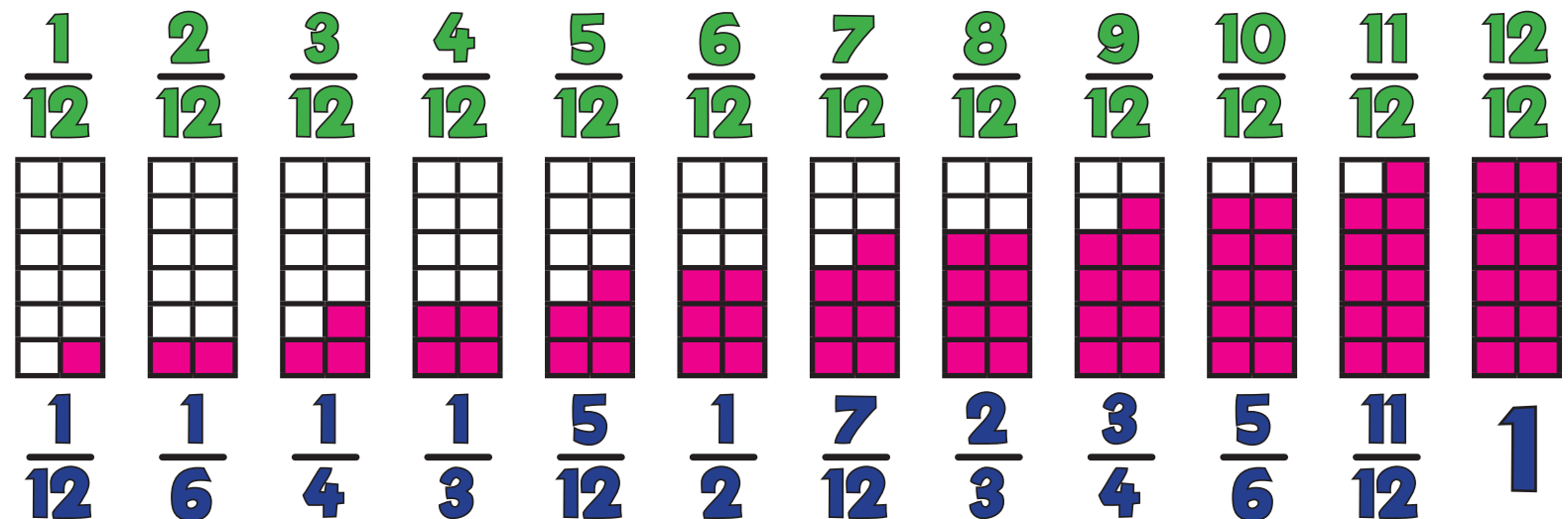
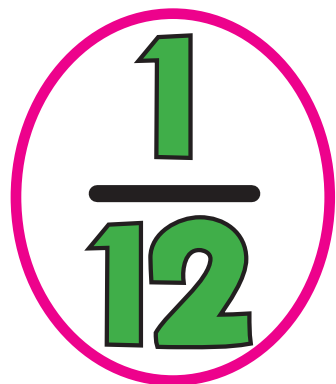
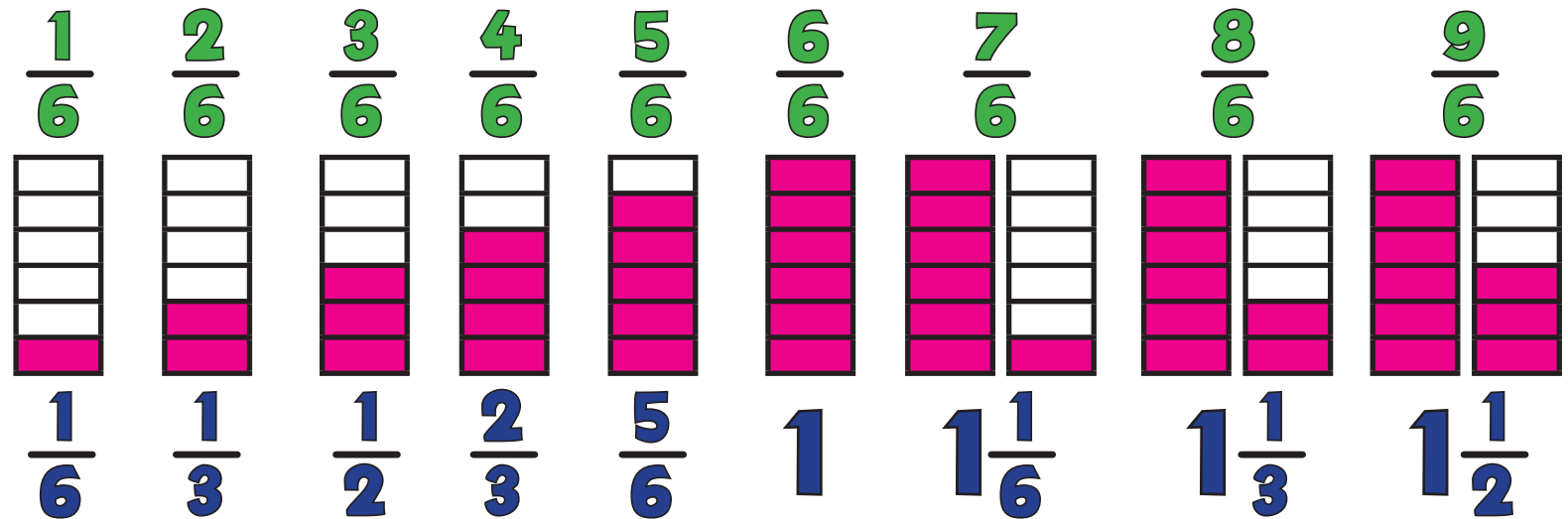
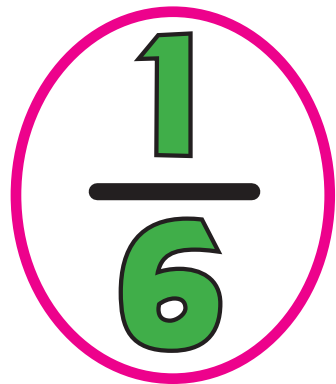
# FA: Counting in Fractions

4b



# FA: Counting in Fractions

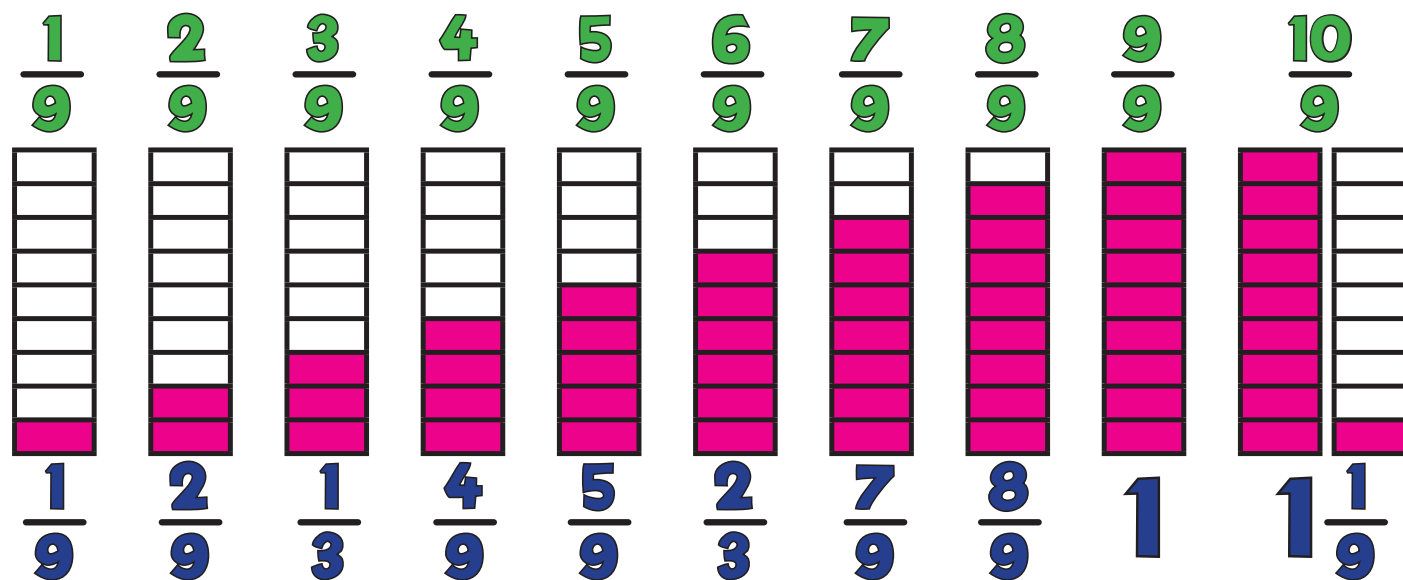
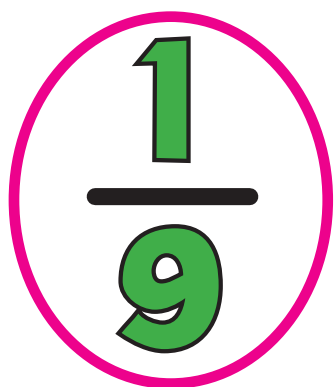
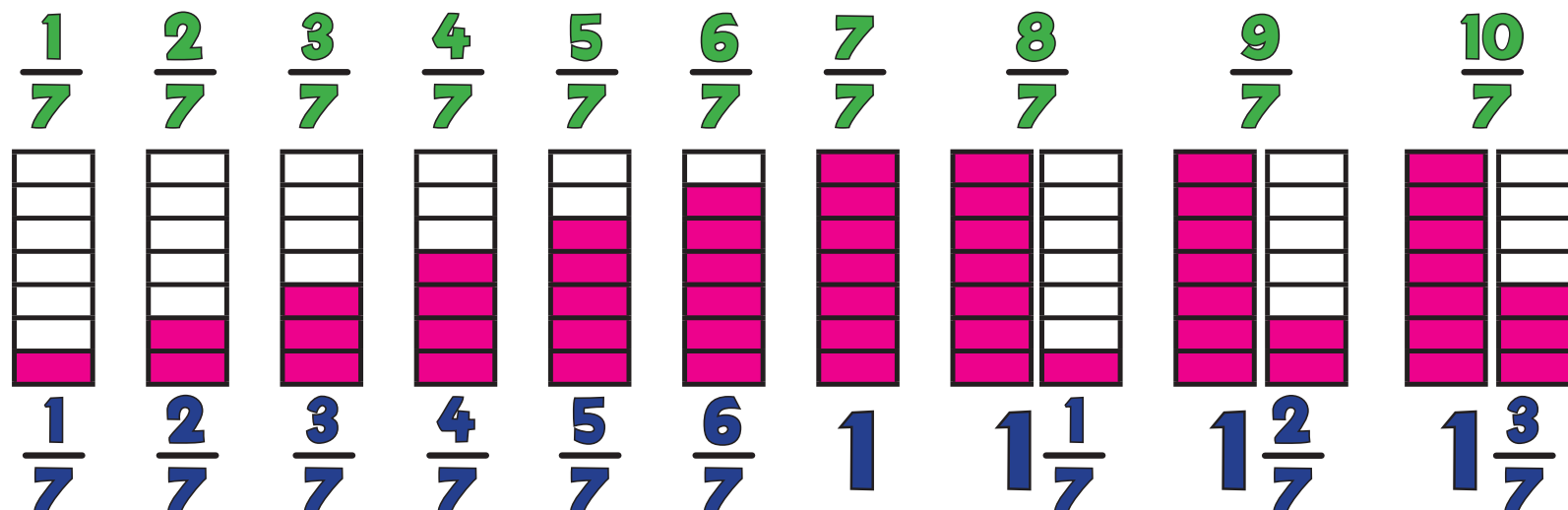
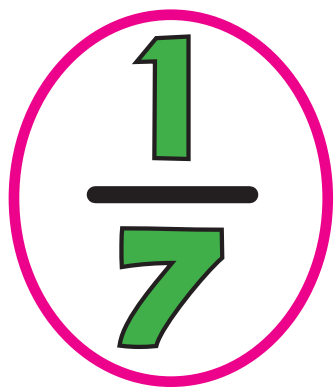
5a





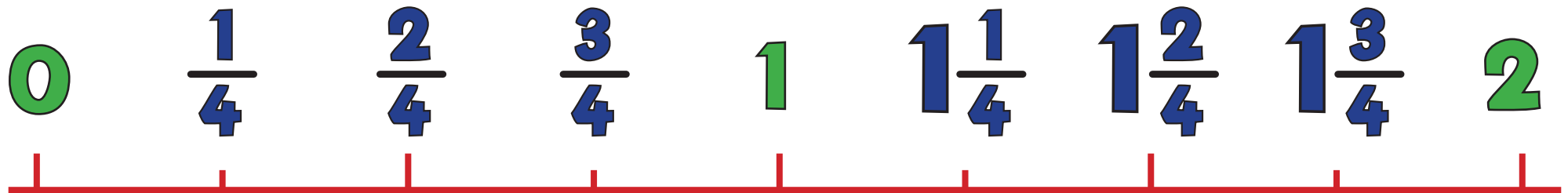
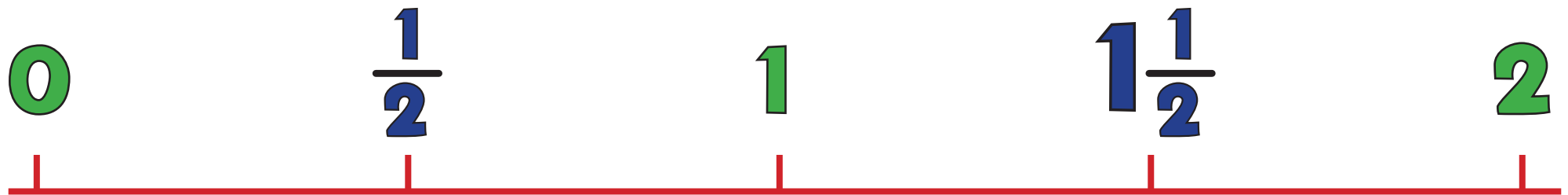
# FA: Counting in Fractions

5b



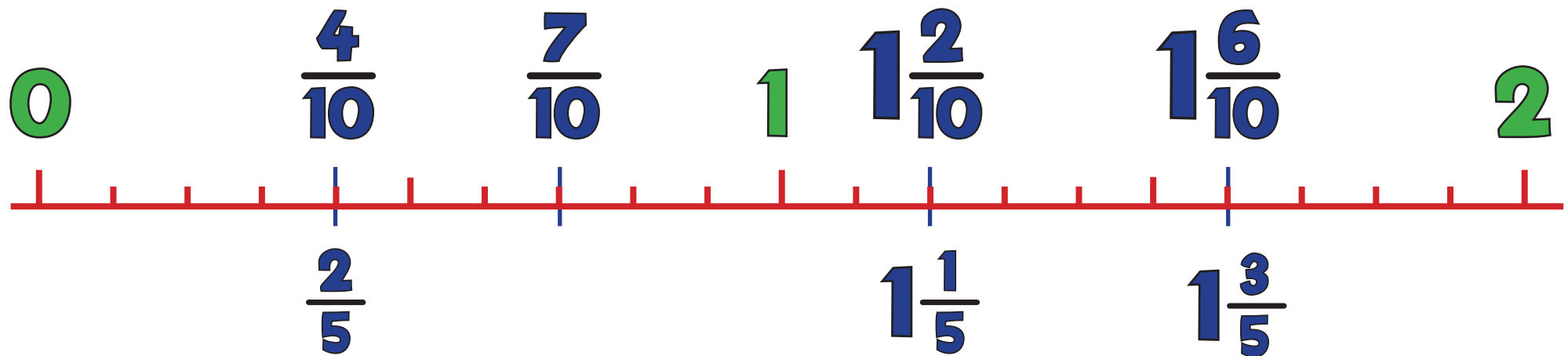
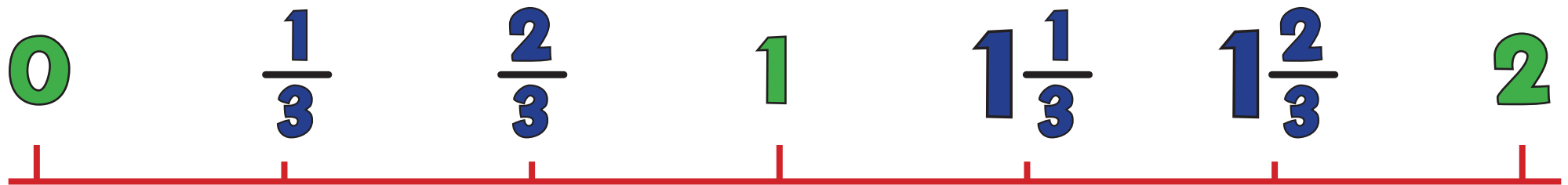
# FB: Fractions as a Number

## 2



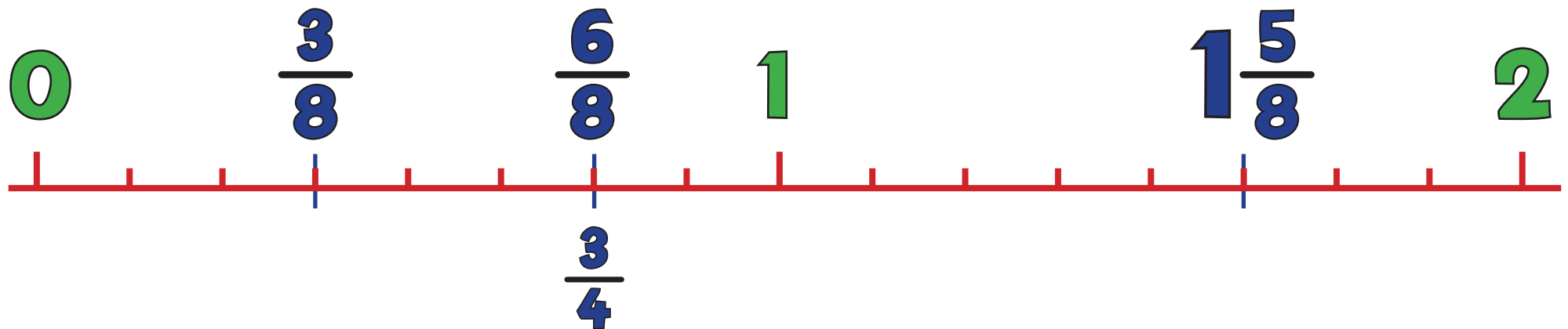
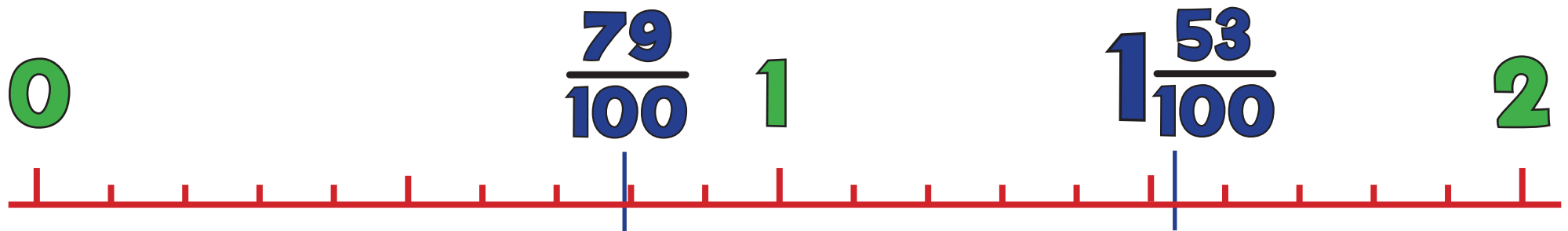
# FB: Fractions as a Number

3



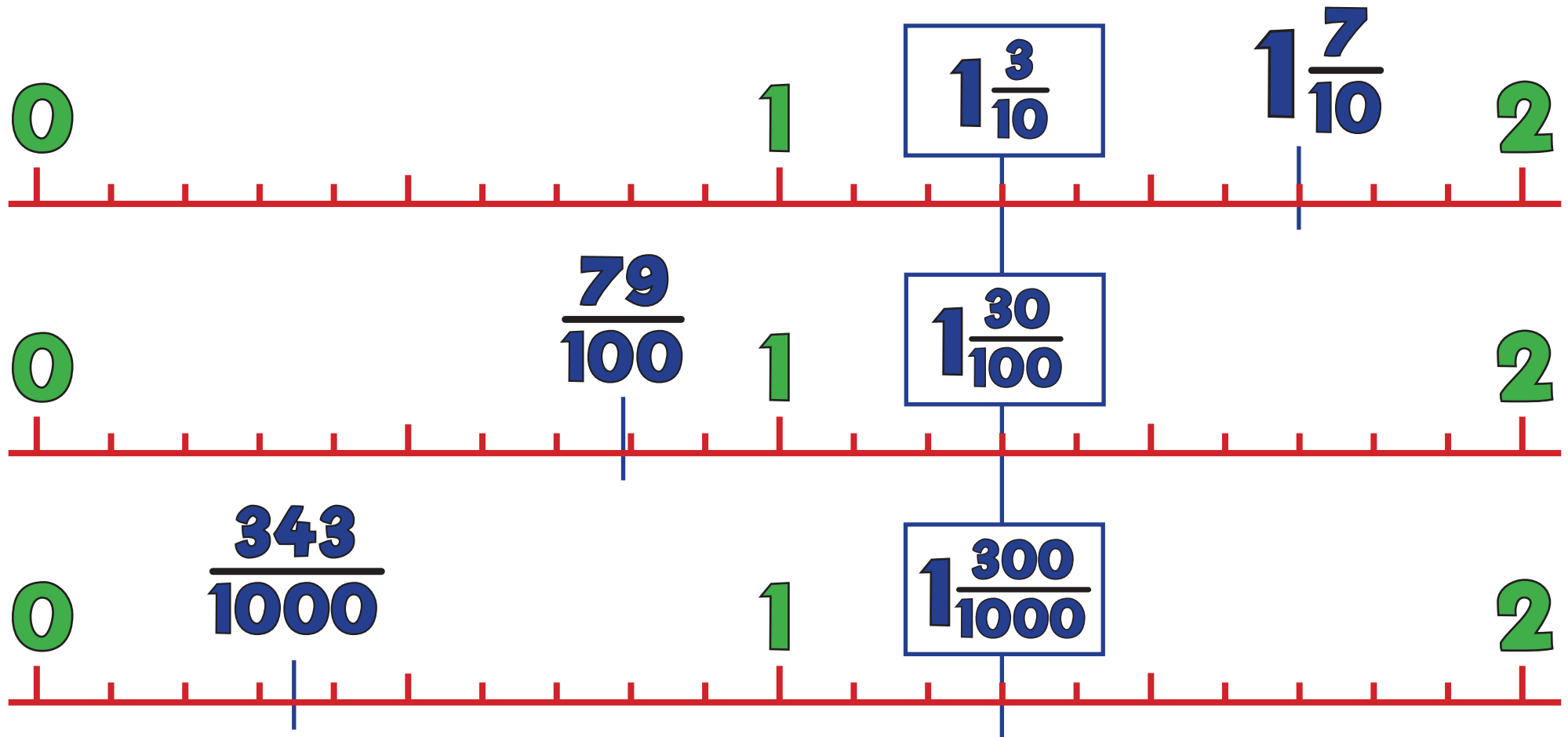
# FB: Fractions as a Number

4



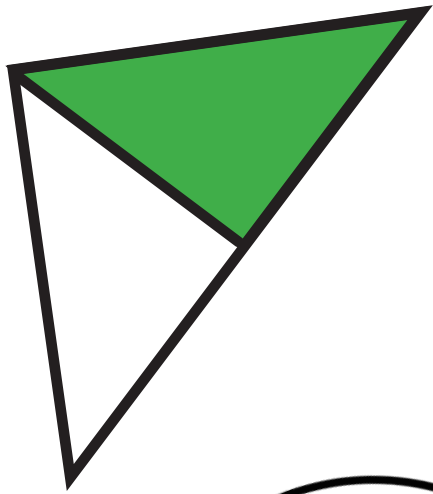
# FB: Fractions as a Number

5

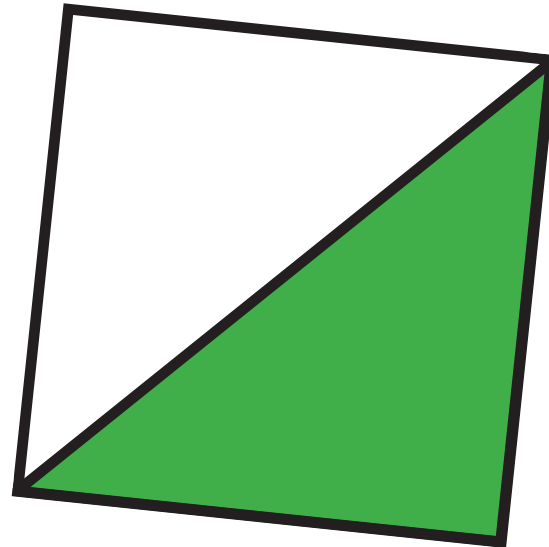
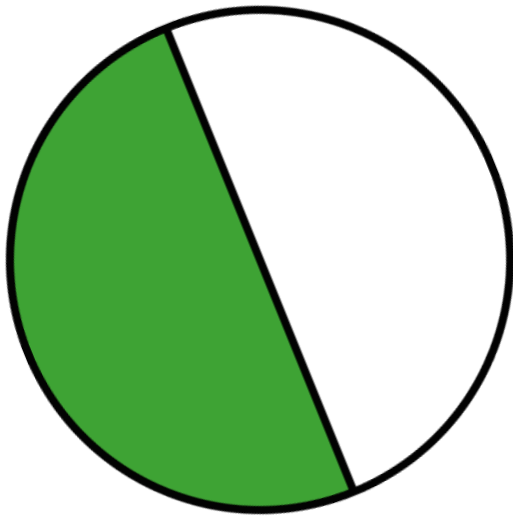
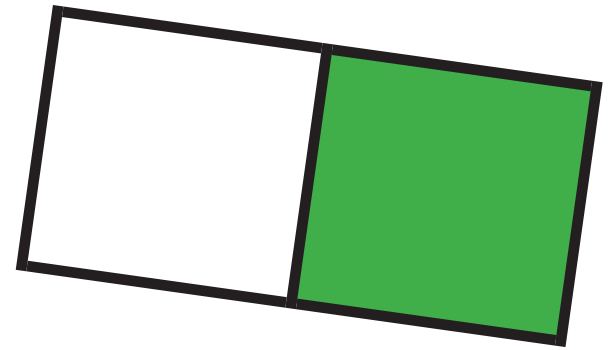


# FC: Recognising Fractions

1a

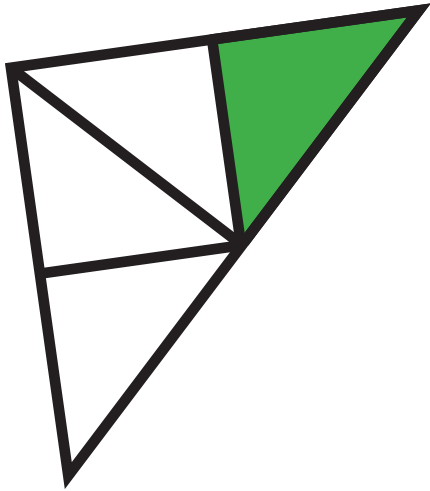


$$\frac{1}{2}$$

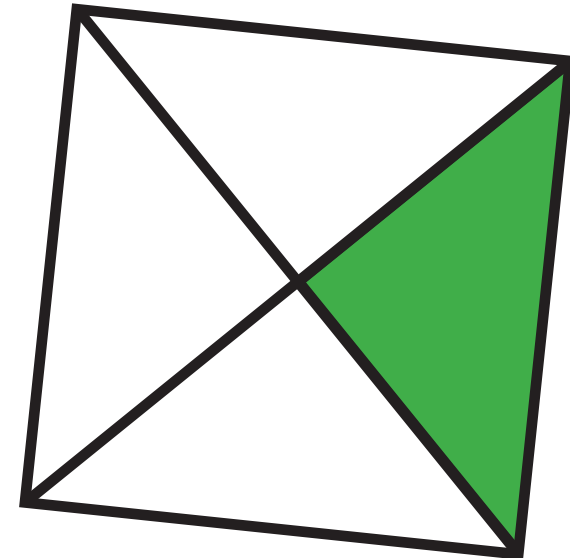
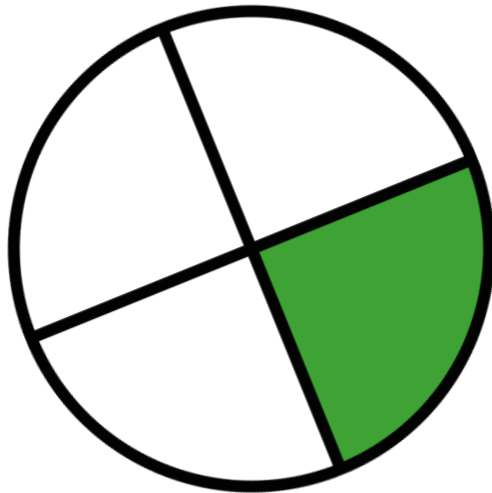
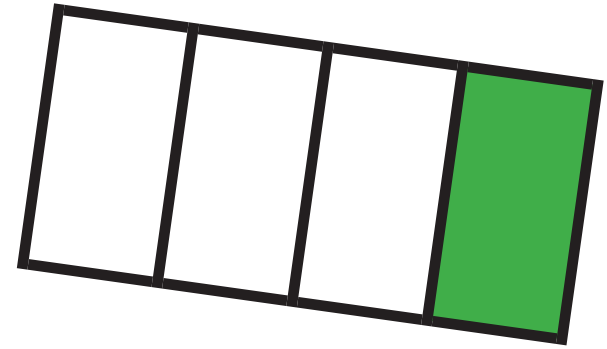


# FC: Recognising Fractions

1b



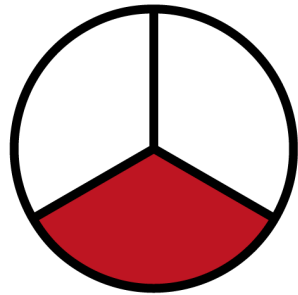
$$\frac{1}{4}$$



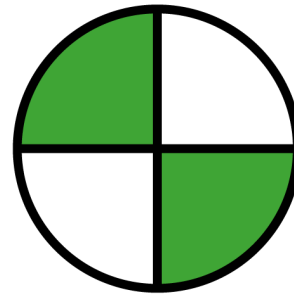
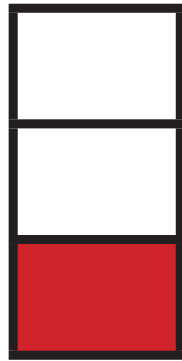


# FC: Recognising Fractions

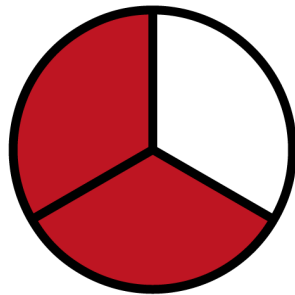
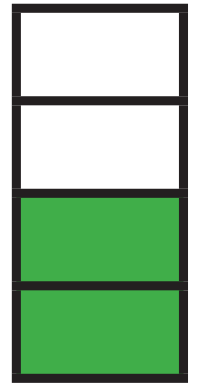
2a



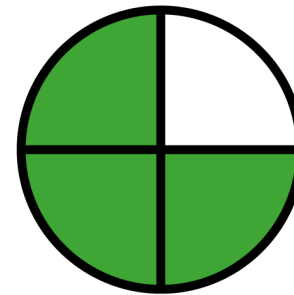
$$\frac{1}{3}$$



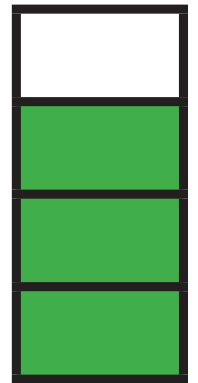
$$\frac{2}{4}$$



$$\frac{2}{3}$$

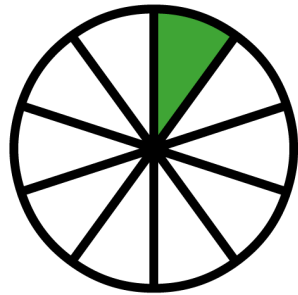


$$\frac{3}{4}$$

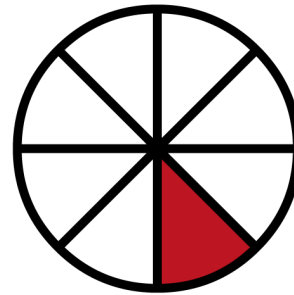
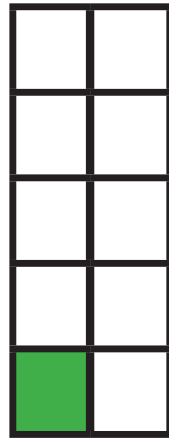


# FC: Recognising Fractions

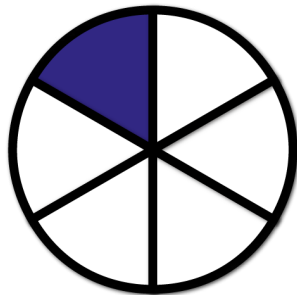
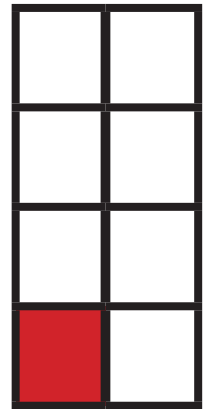
2b



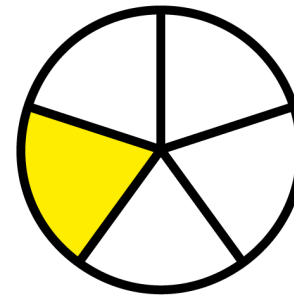
$$\frac{1}{10}$$



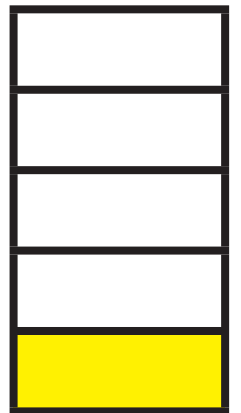
$$\frac{1}{8}$$



$$\frac{1}{6}$$

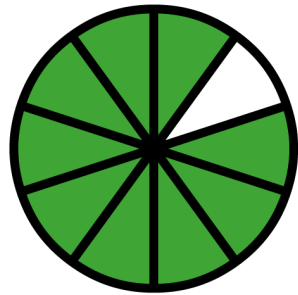


$$\frac{1}{5}$$

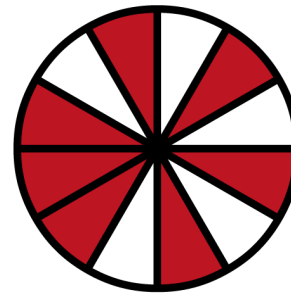
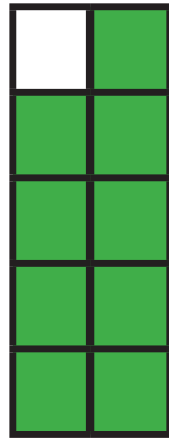


# FC: Recognising Fractions

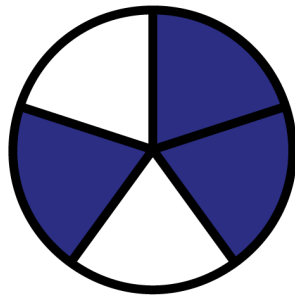
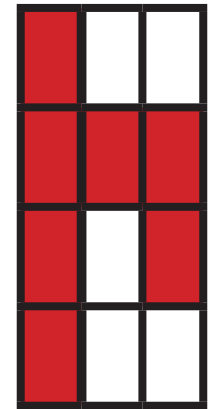
3a



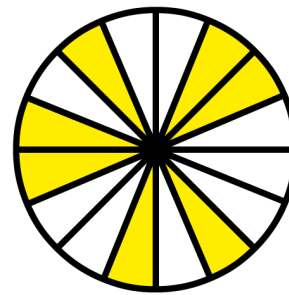
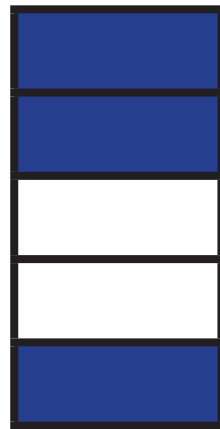
$$\frac{9}{10}$$



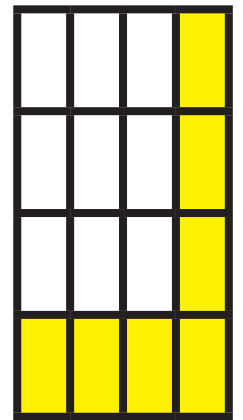
$$\frac{7}{12}$$



$$\frac{3}{5}$$

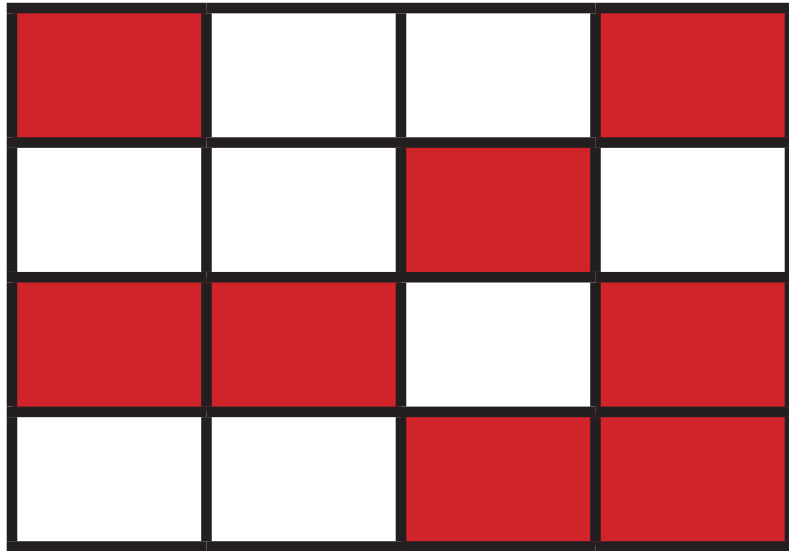


$$\frac{7}{16}$$

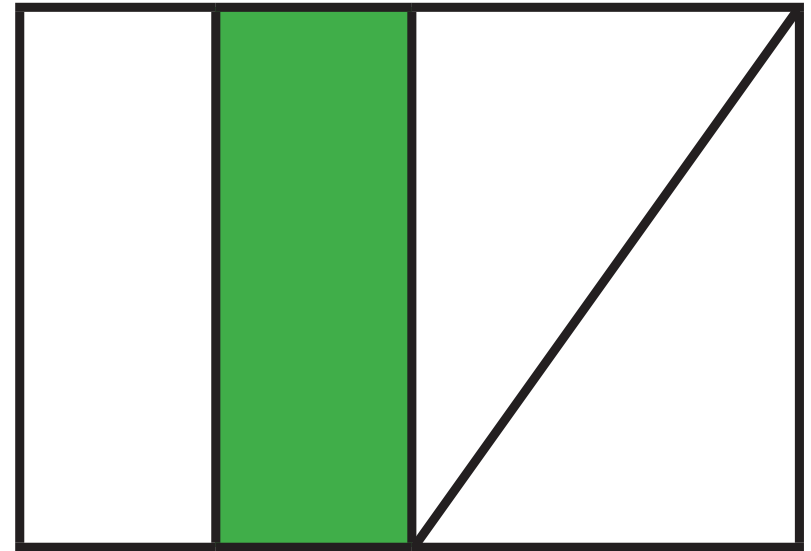


# FC: Recognising Fractions

3b



$$\frac{1}{2}$$

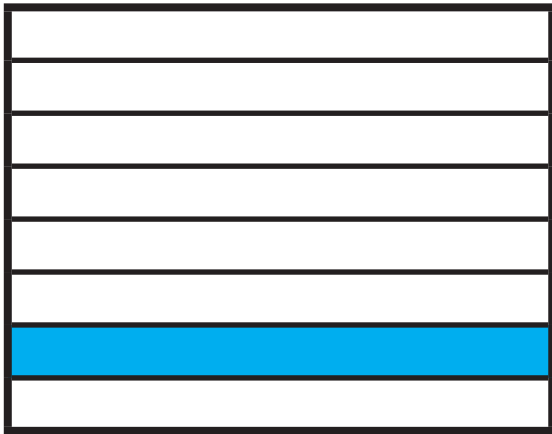


$$\frac{1}{4}$$

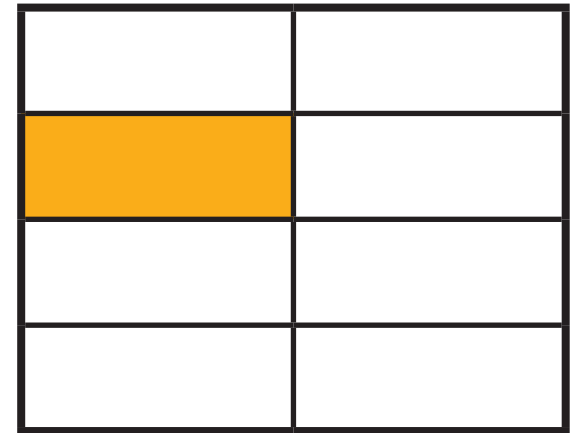
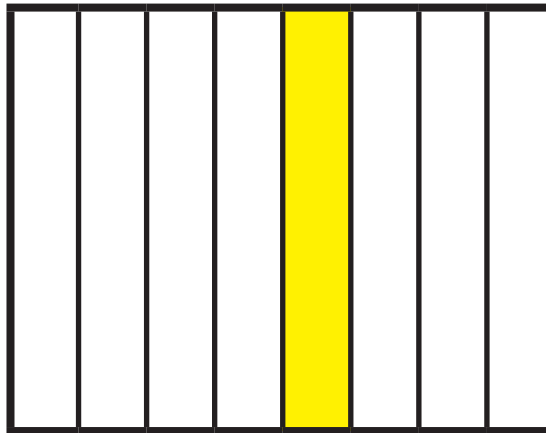
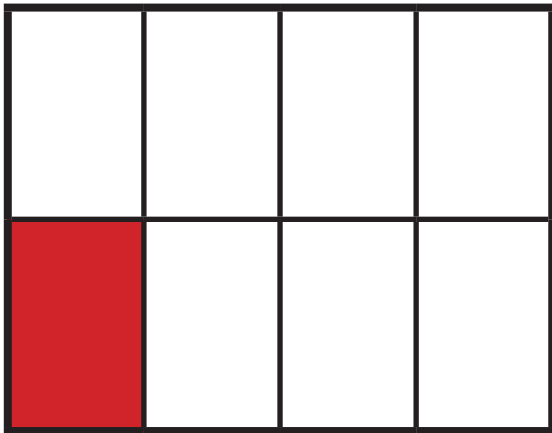
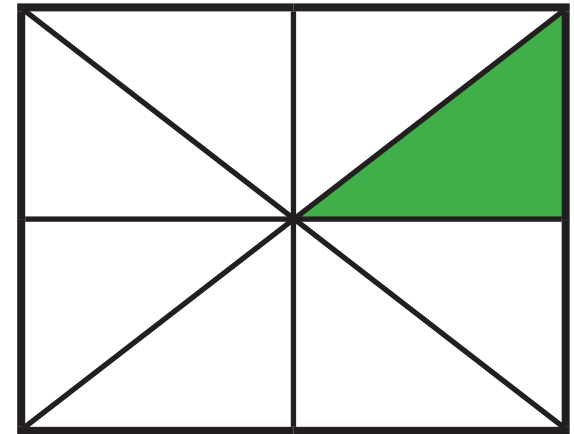
# FC: Recognising Fractions

3c

Eight Equal Eighths!

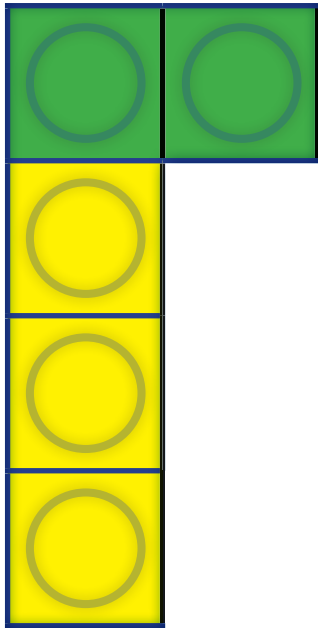


$$\frac{1}{8}$$

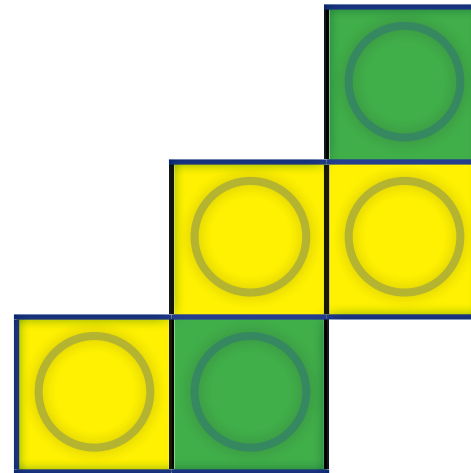
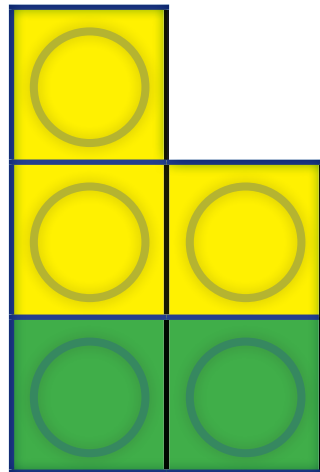
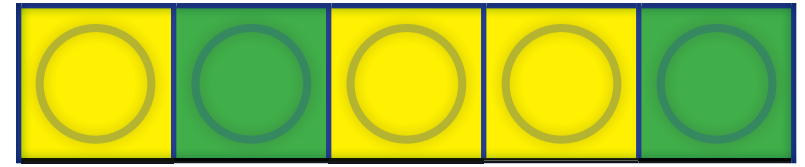


# FC: Recognising Fractions

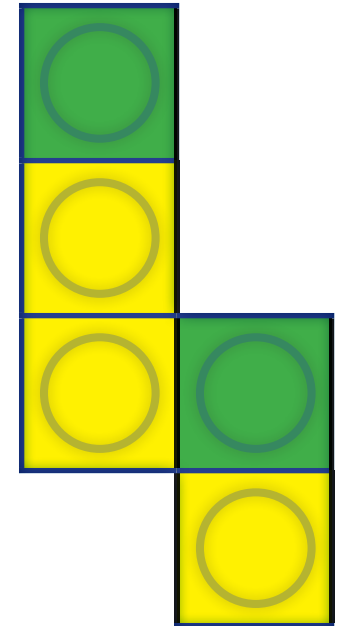
3d



$$\frac{2}{5}$$

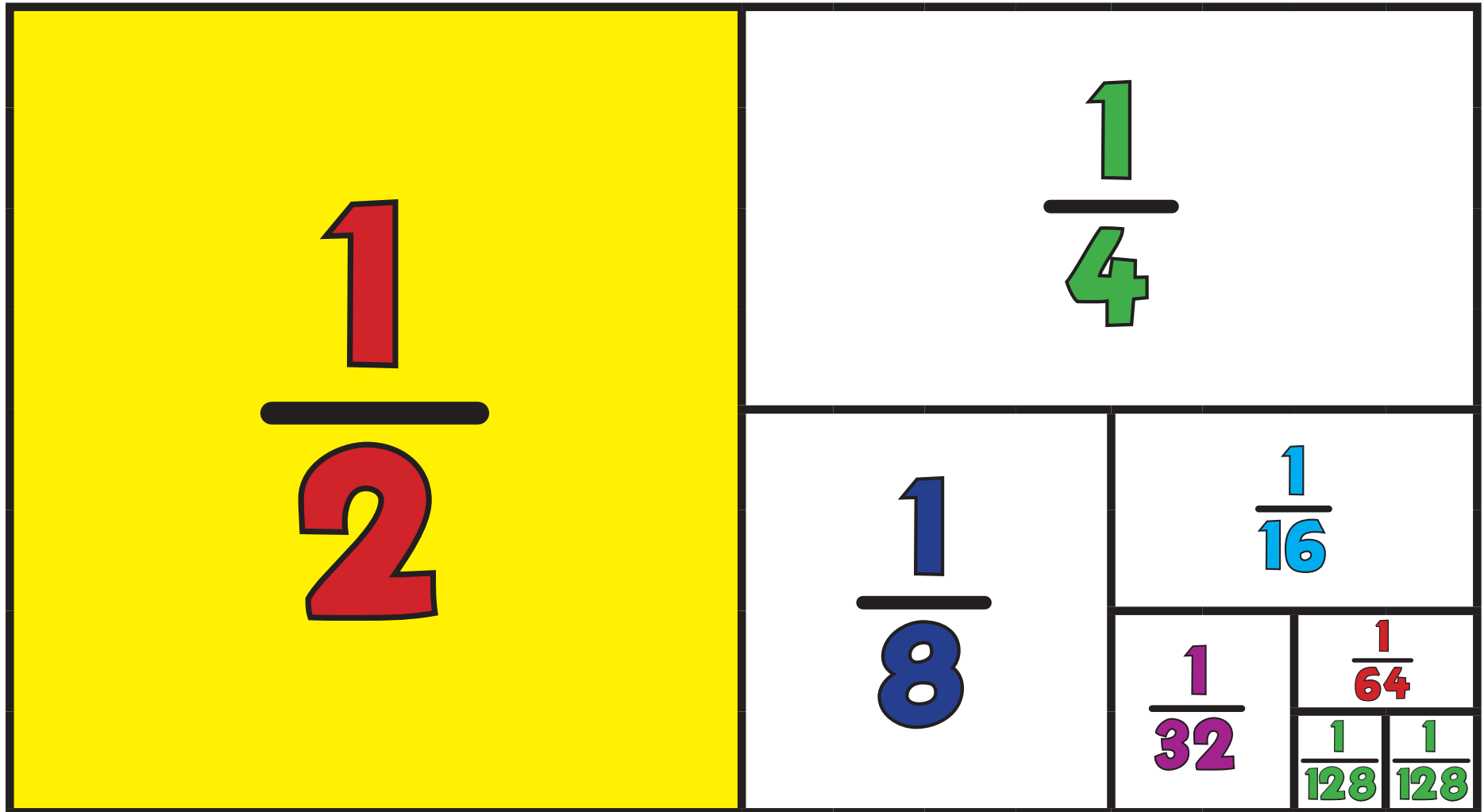


$$\frac{3}{5}$$



# FC: Recognising Fractions

4

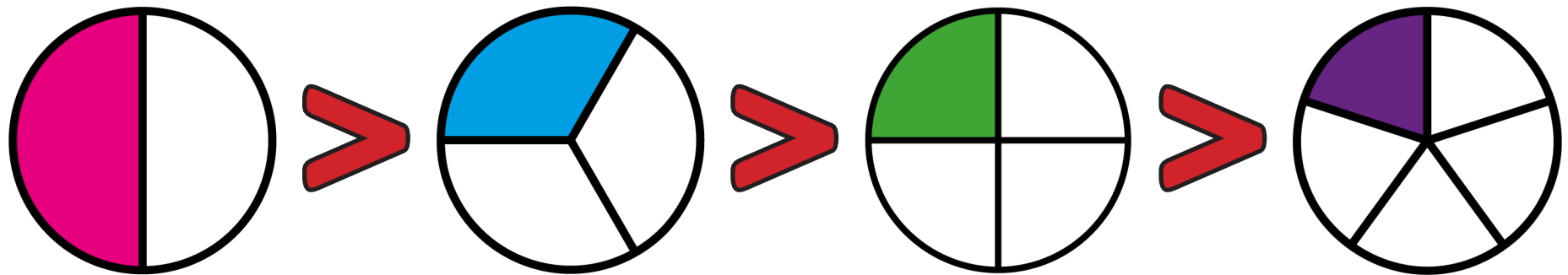




# FD: Ordering Fractions

3a

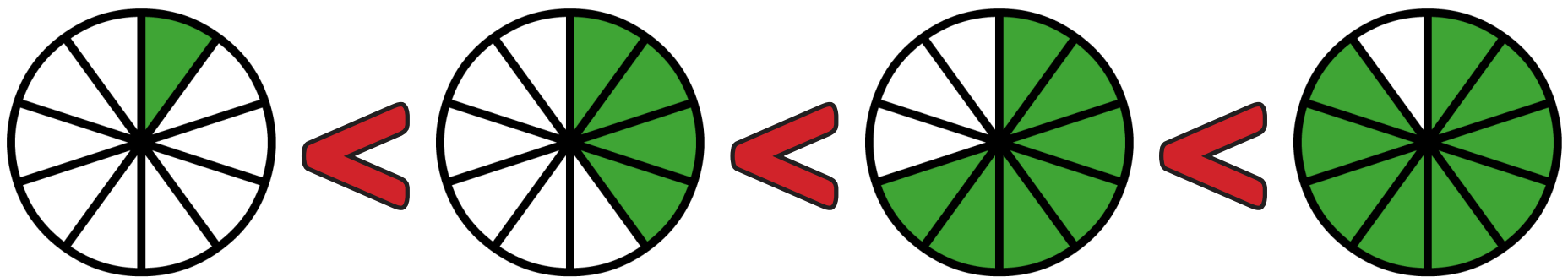
$$\frac{1}{2} > \frac{1}{3} > \frac{1}{4} > \frac{1}{5}$$



# FD: Ordering Fractions

3b

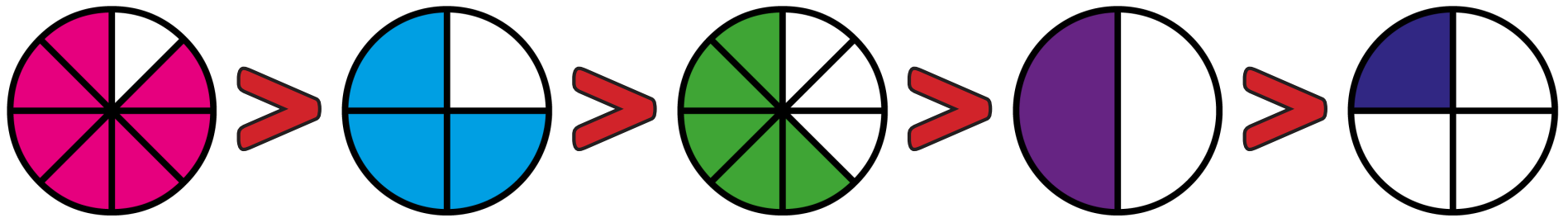
$$\frac{1}{10} < \frac{4}{10} < \frac{7}{10} < \frac{9}{10}$$



# FD: Ordering Fractions

5a

$$\frac{7}{8} > \frac{3}{4} > \frac{5}{8} > \frac{1}{2} > \frac{1}{4}$$

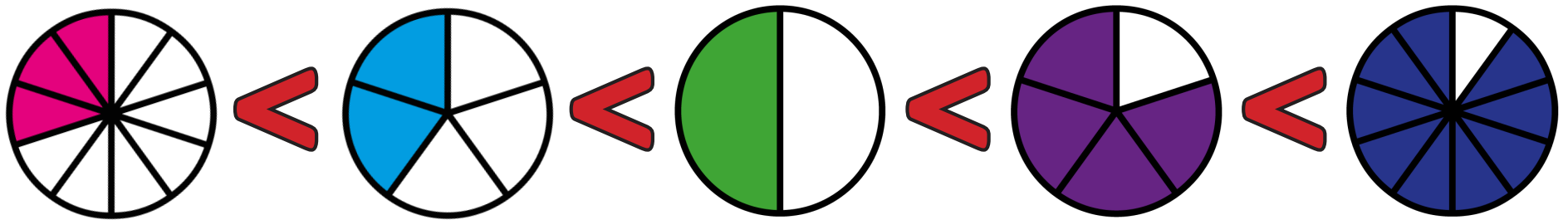


$$0.875 > 0.75 > 0.625 > 0.5 > 0.25$$

# FD: Ordering Fractions

5b

$$\frac{3}{10} < \frac{2}{5} < \frac{1}{2} < \frac{4}{5} < \frac{9}{10}$$



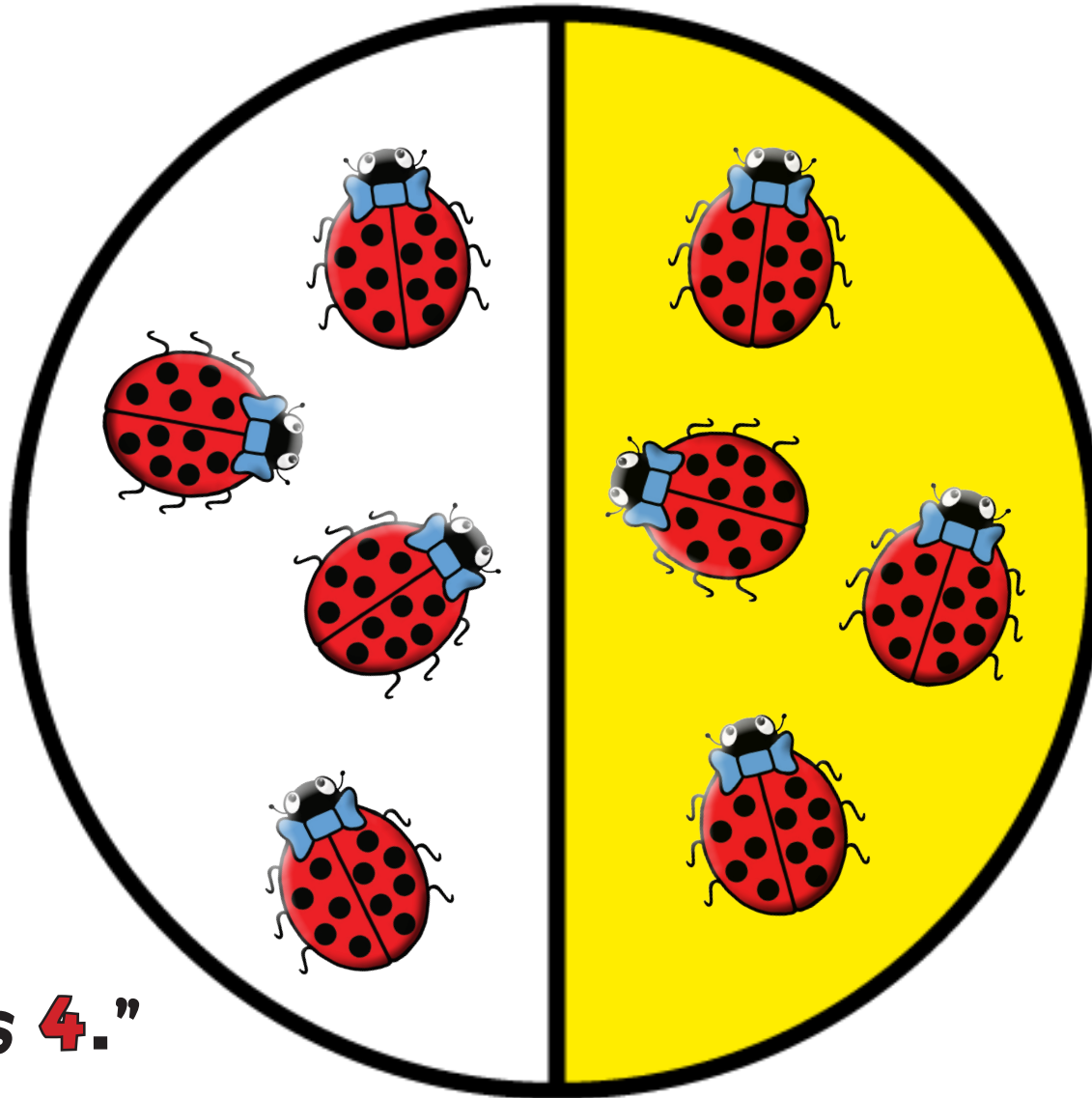
$$0.3 < 0.4 < 0.5 < 0.8 < 0.9$$

# FE: Fraction of a Quantity

FS

8

$\frac{1}{2}$



$\frac{1}{2}$

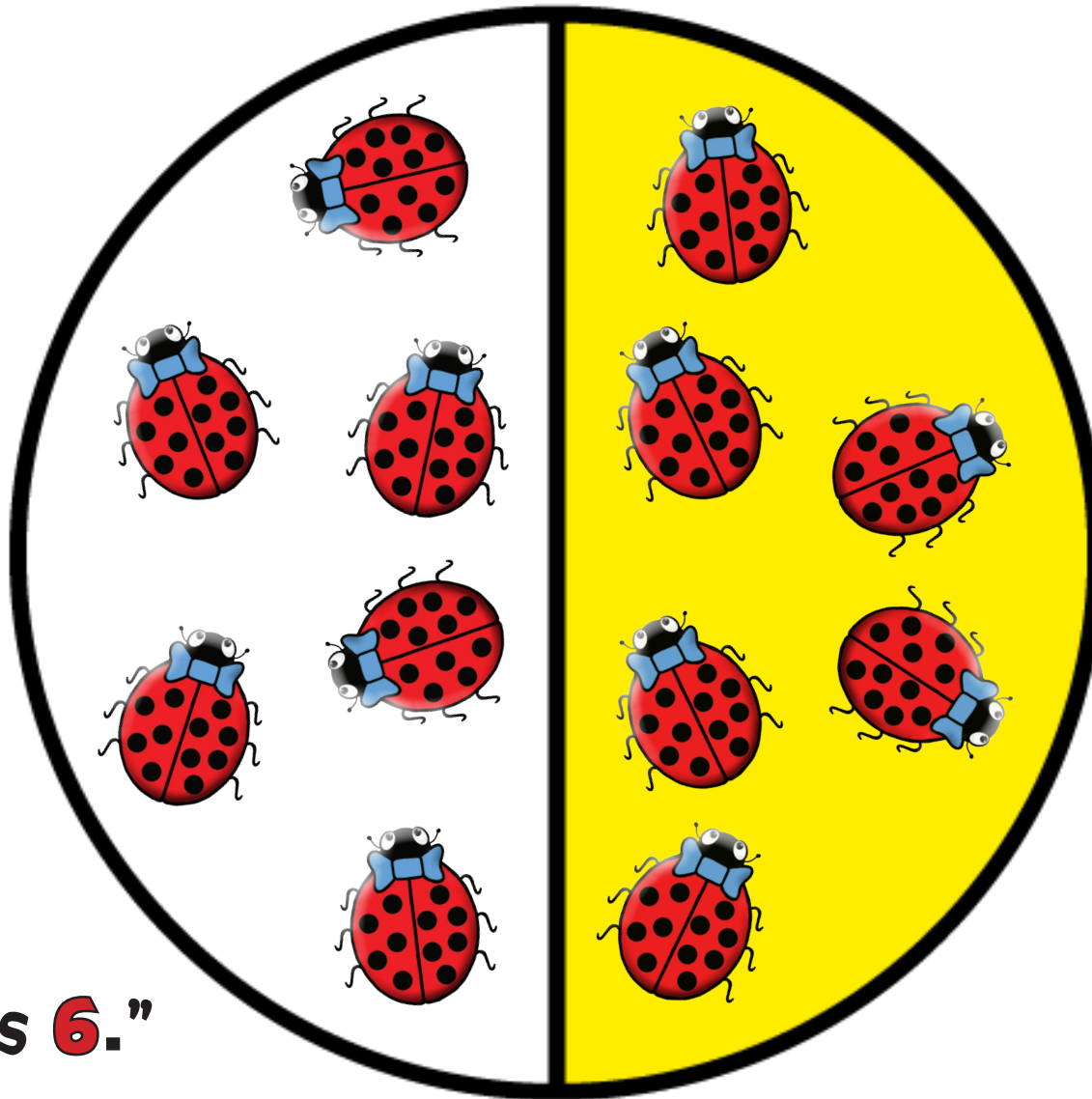
**“Half of 8 is 4.”**

# FE: Fraction of a Quantity

1a

12

$\frac{1}{2}$



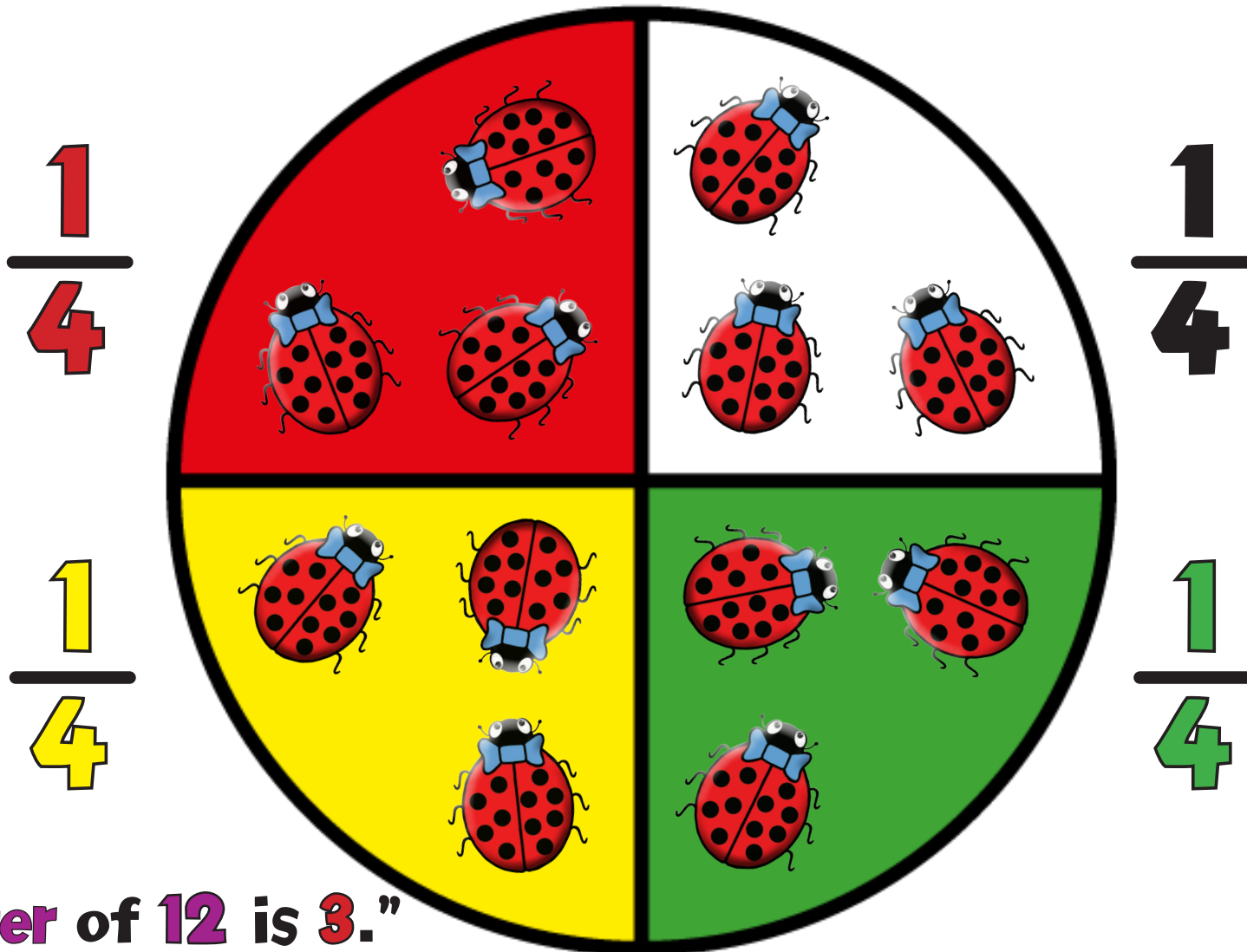
$\frac{1}{2}$

**“Half of 12 is 6.”**

# FE: Fraction of a Quantity

1b

12

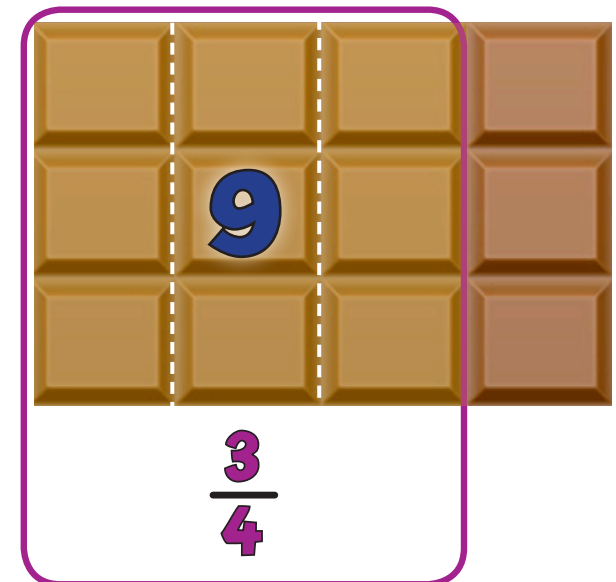
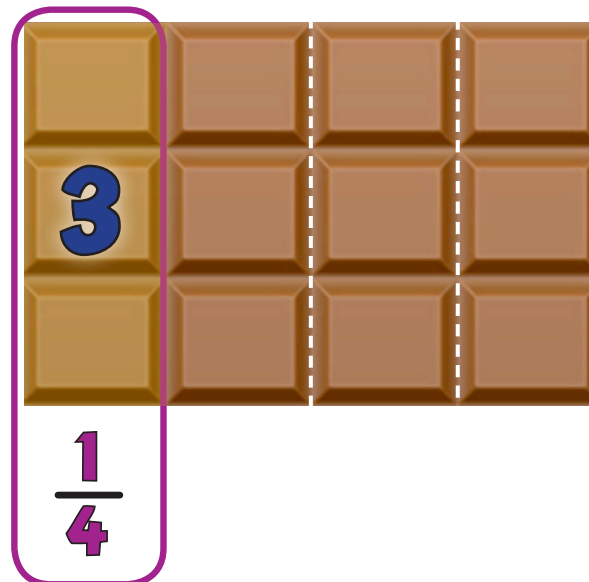
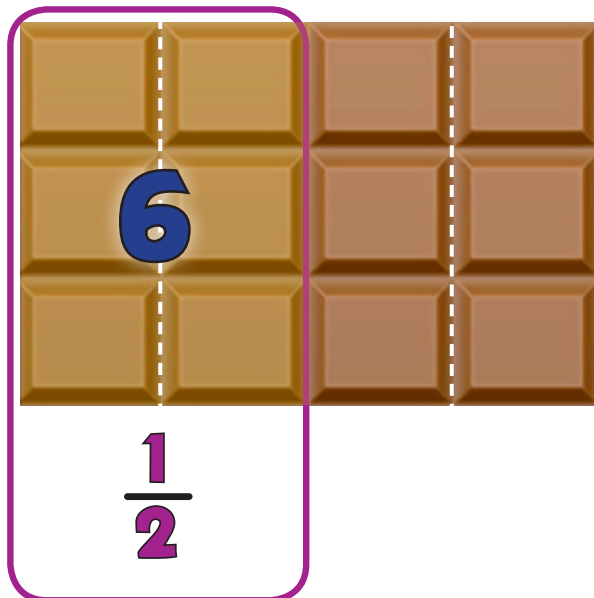
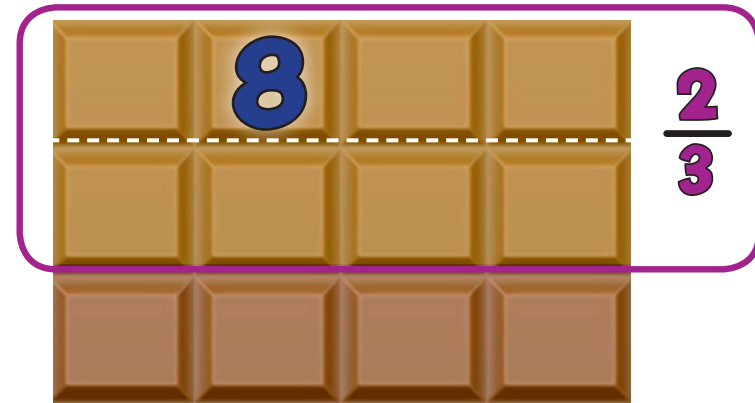
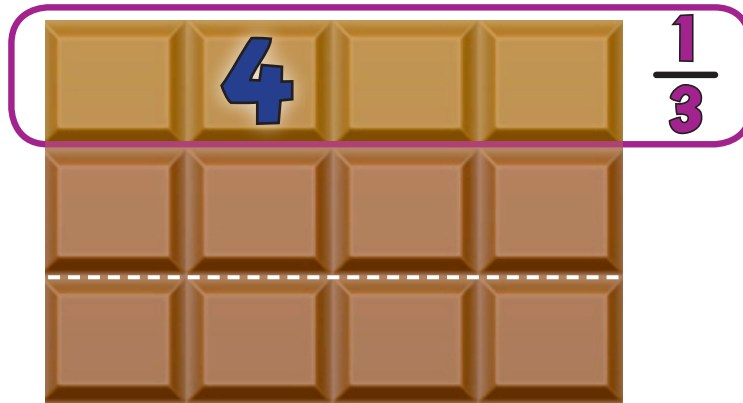


**"A quarter of 12 is 3."**

# FE: Fraction of a Quantity

2

**12**  
Chunks

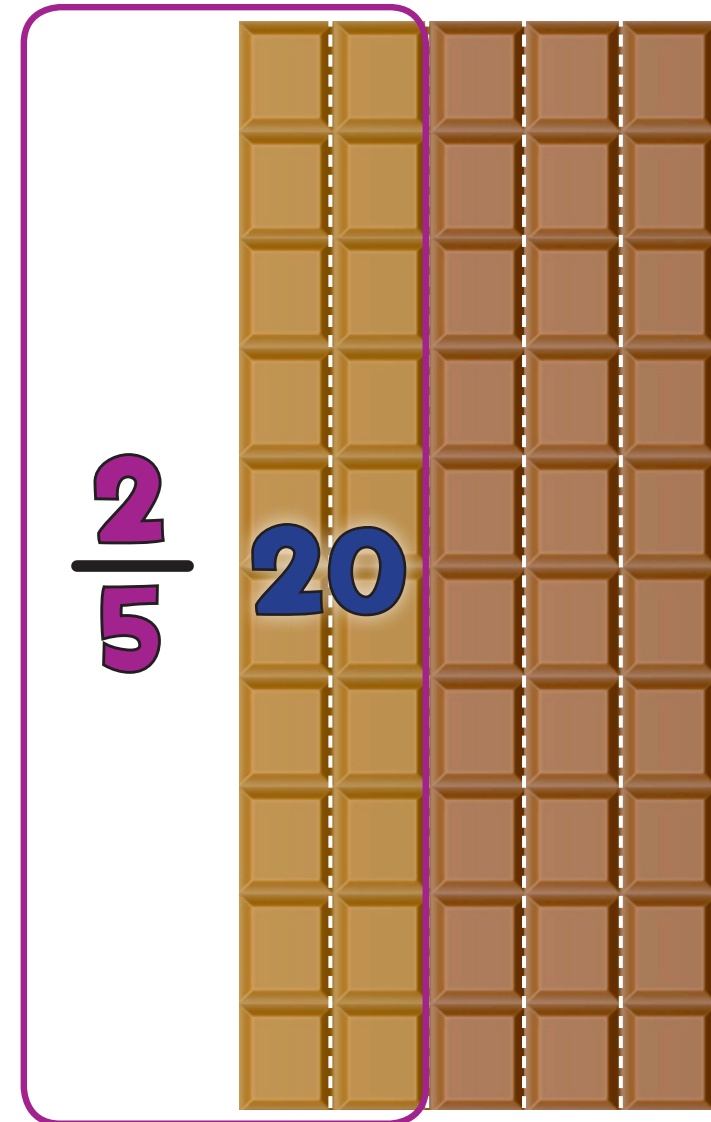
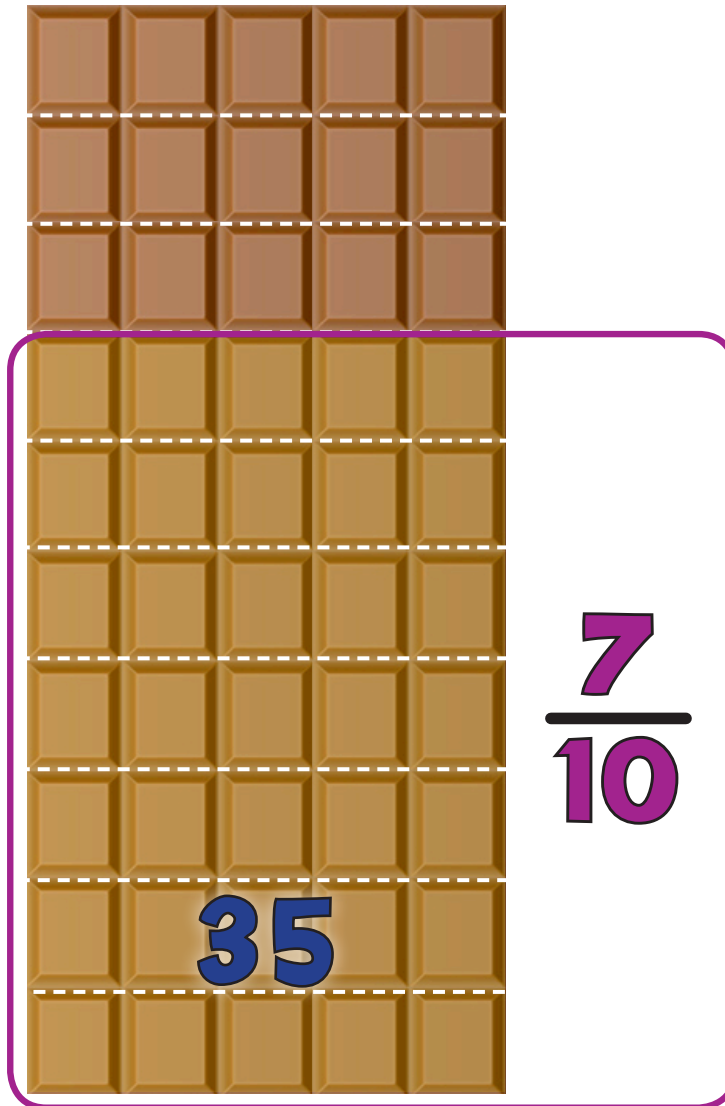




# FE: Fraction of a Quantity

3

50  
Chunks



# FE: Fraction of a Quantity

4

**72**  
Chunks

$$\frac{4}{9}$$

**32**

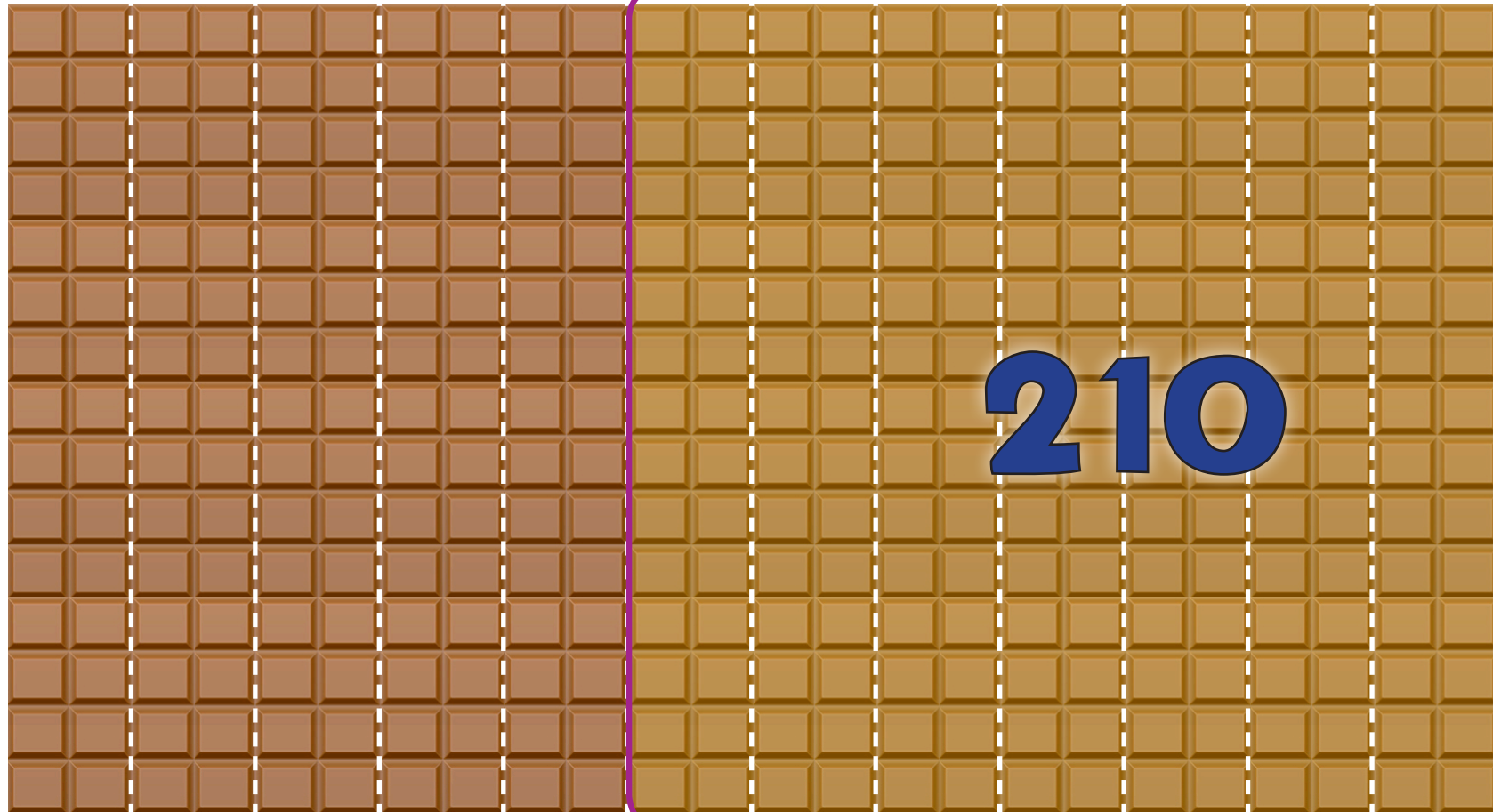
$$\frac{7}{8}$$

**63**

# FE: Fraction of a Quantity

5

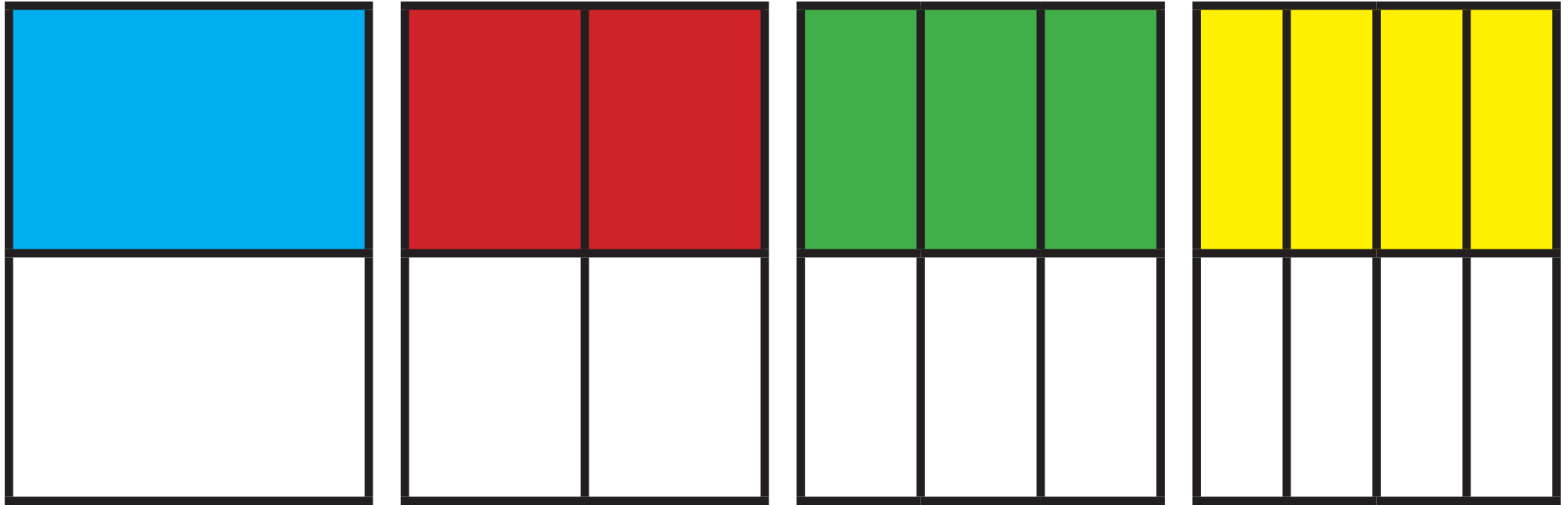
360 Chunks



$\frac{7}{12}$

# FF: Equivalent Fractions

2a

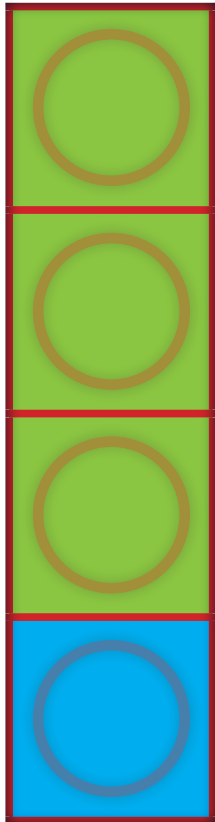


$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$$

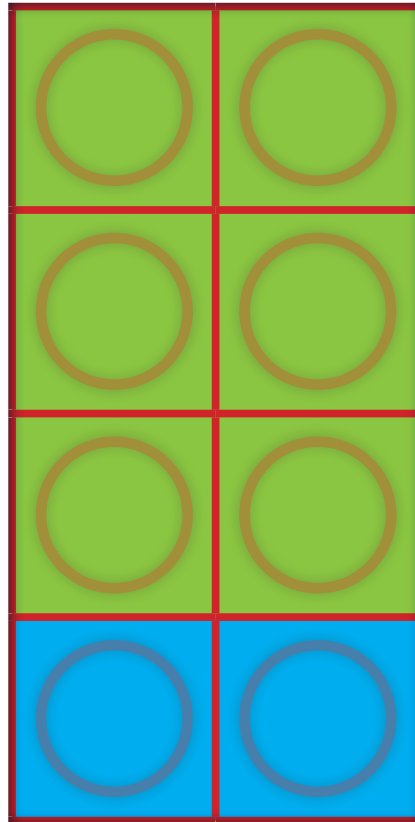
# FF: Equivalent Fractions

2b

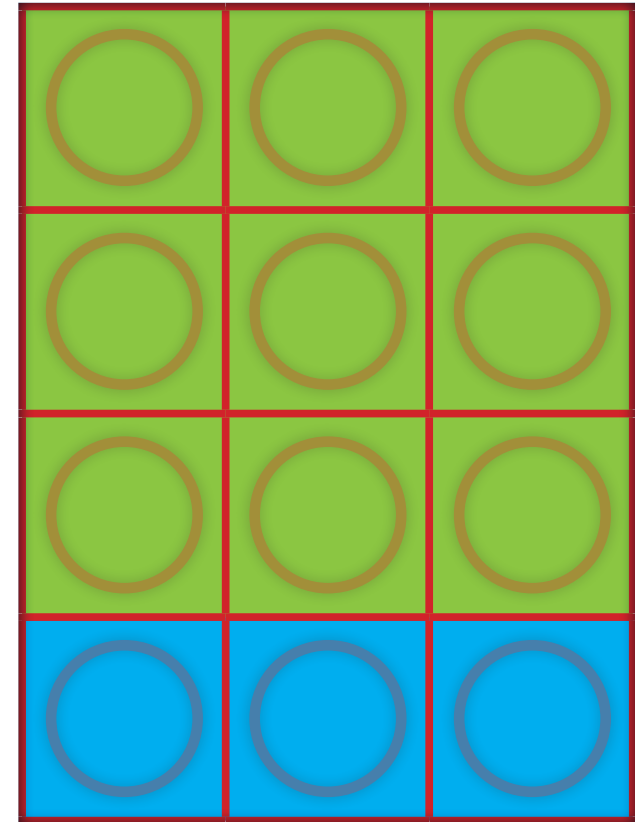
$$\frac{1}{4}$$



$$\frac{1}{4} \left( \frac{2}{8} \right)$$

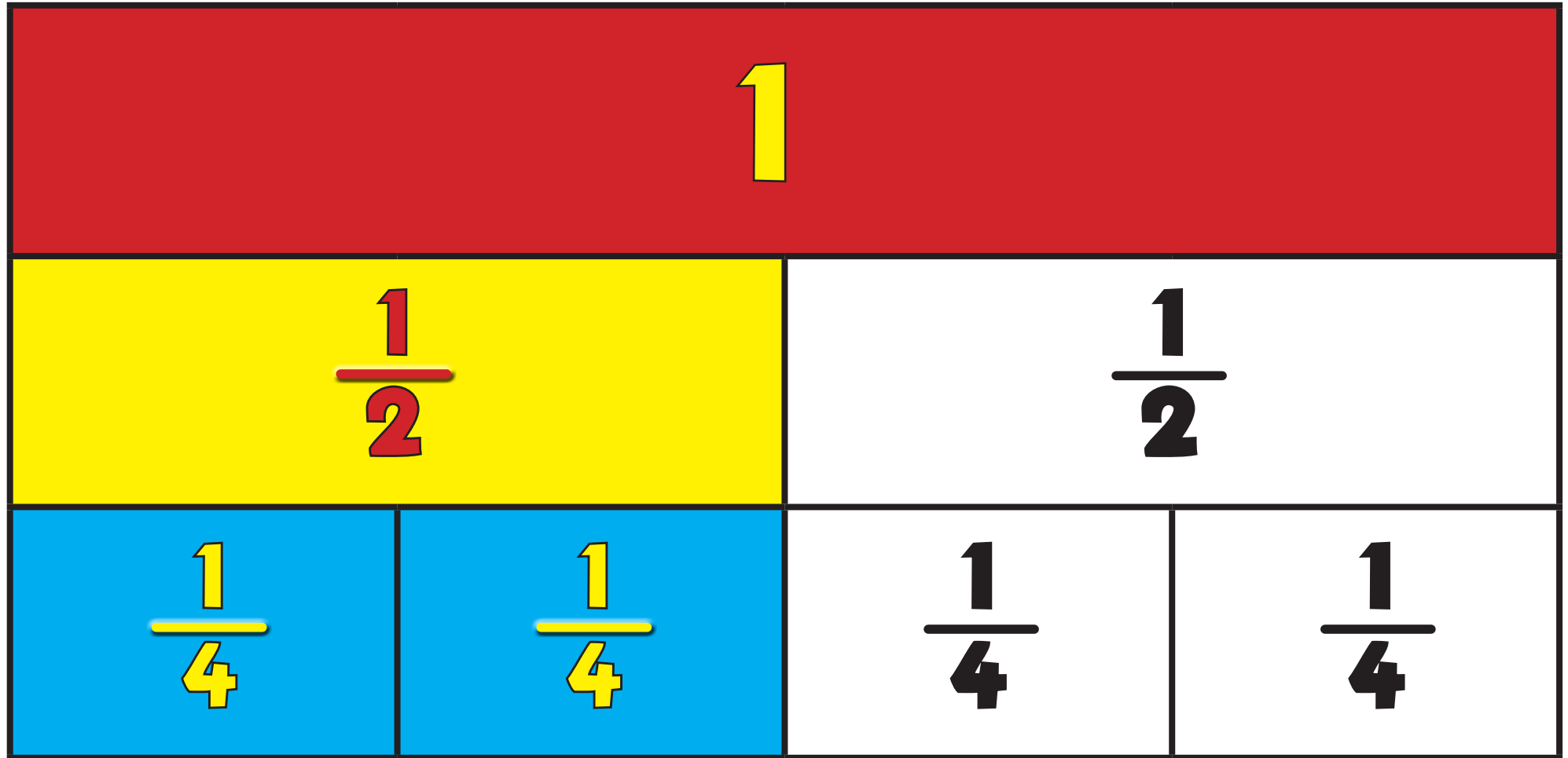


$$\frac{1}{4} \left( \frac{3}{12} \right)$$



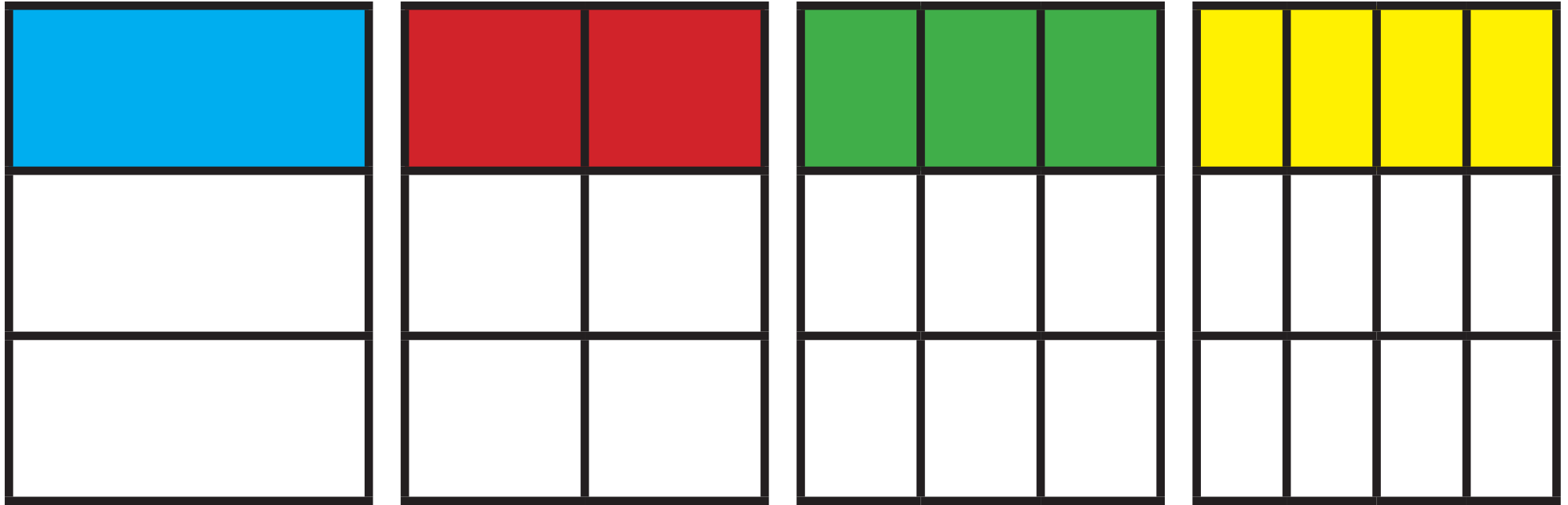
# FF: Equivalent Fractions

2c



# FF: Equivalent Fractions

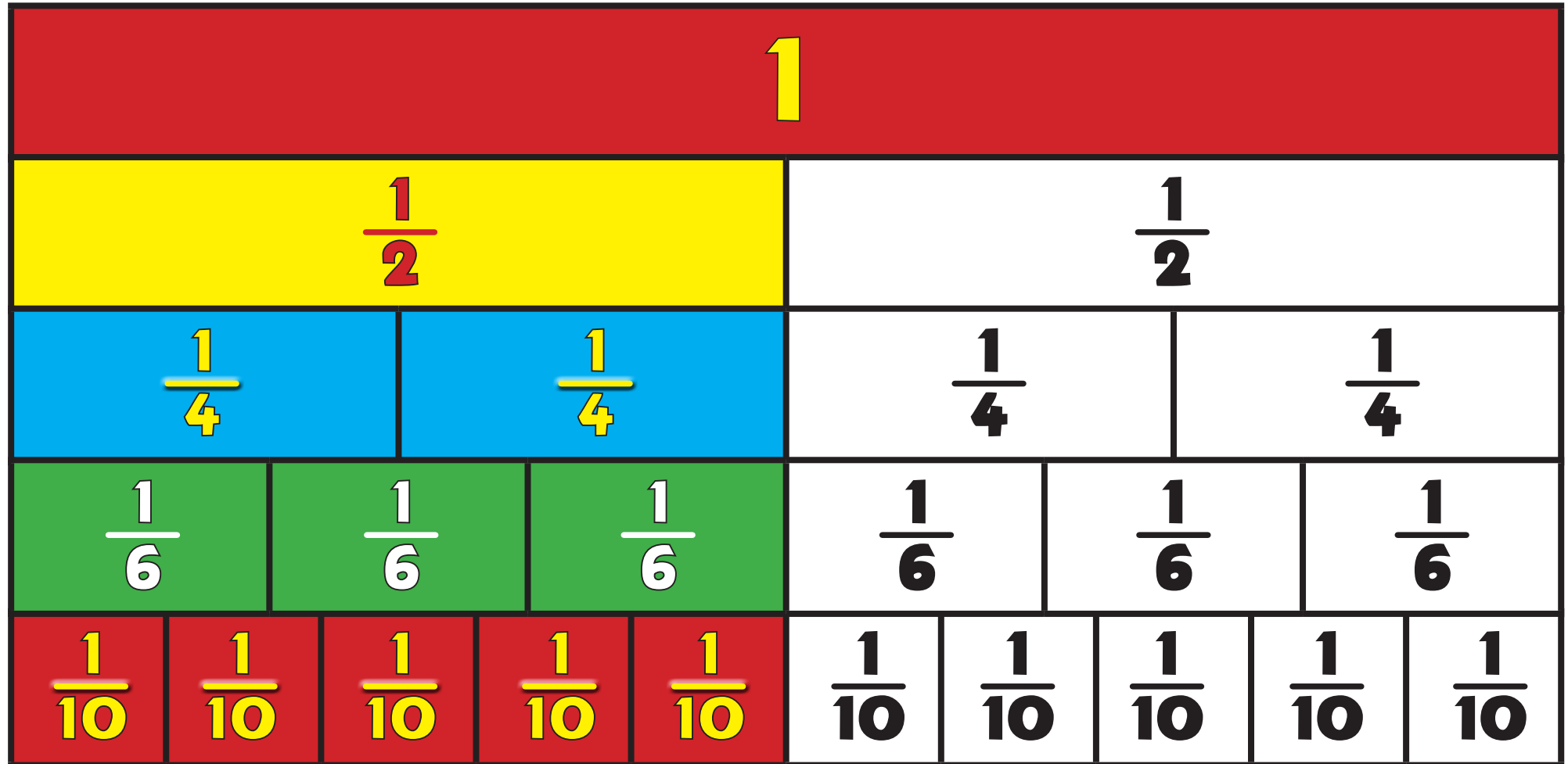
3a



$$\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12}$$

# FF: Equivalent Fractions

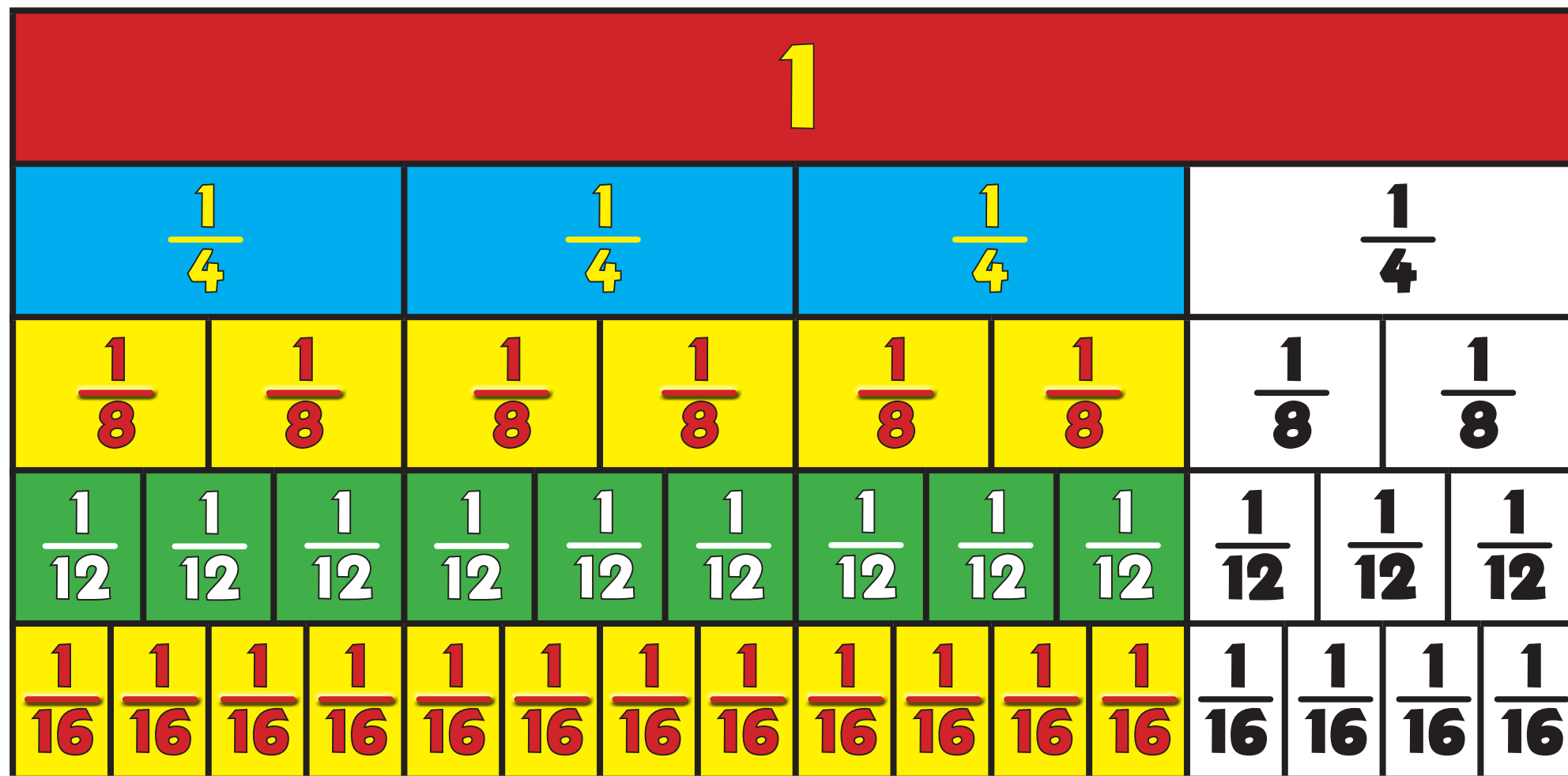
3b





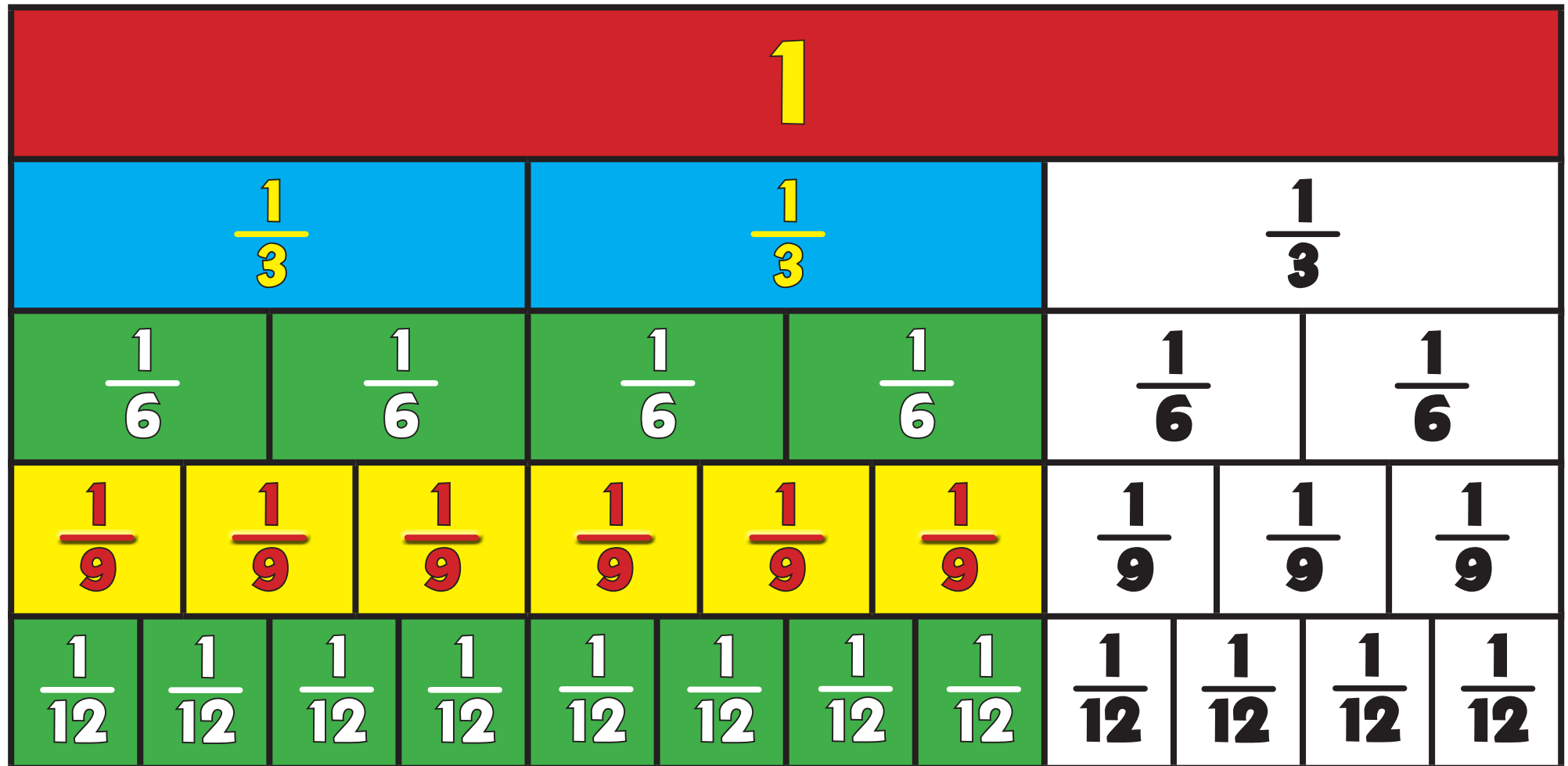
# FF: Equivalent Fractions

3c



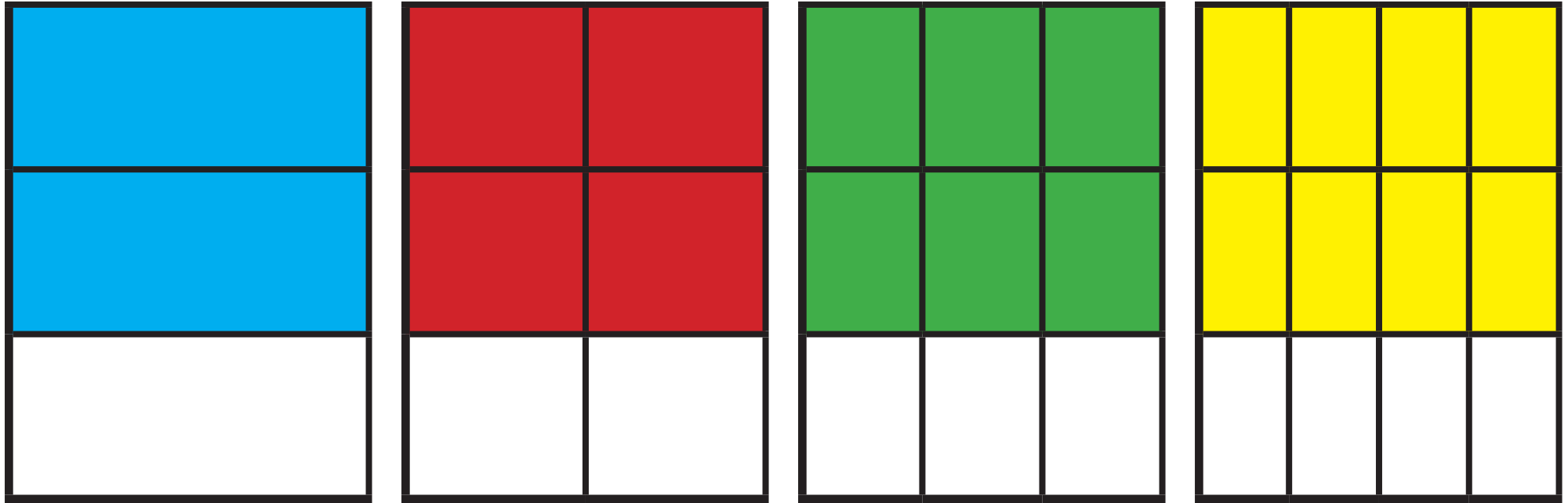
# FF: Equivalent Fractions

3d



# FF: Equivalent Fractions

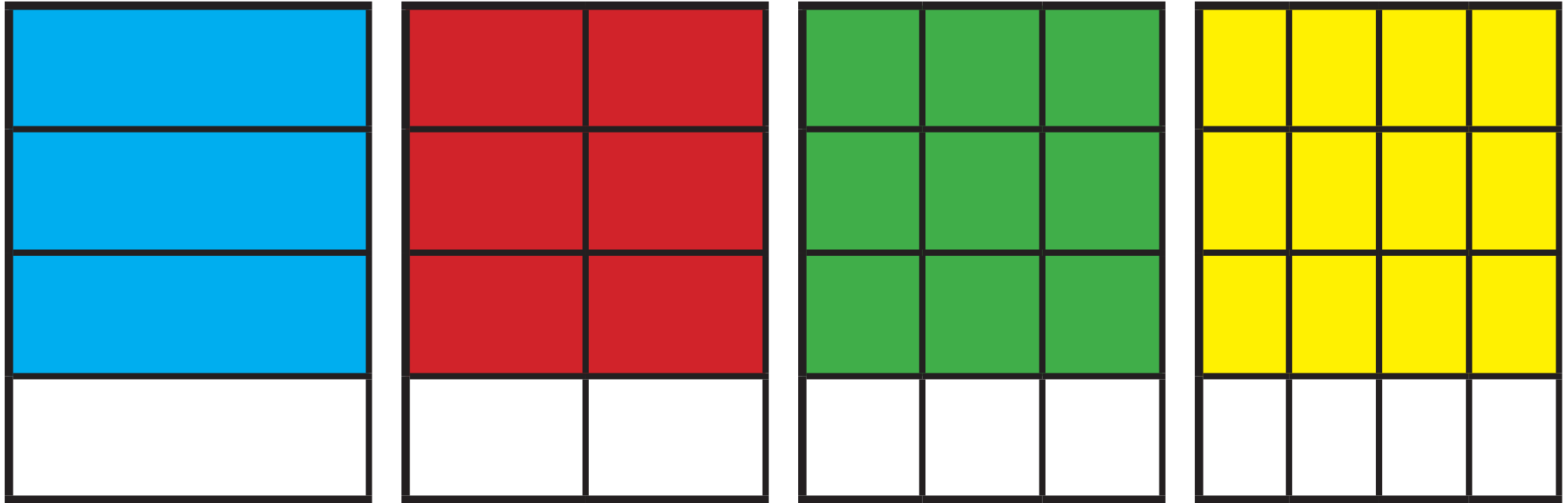
4a



$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12}$$

# FF: Equivalent Fractions

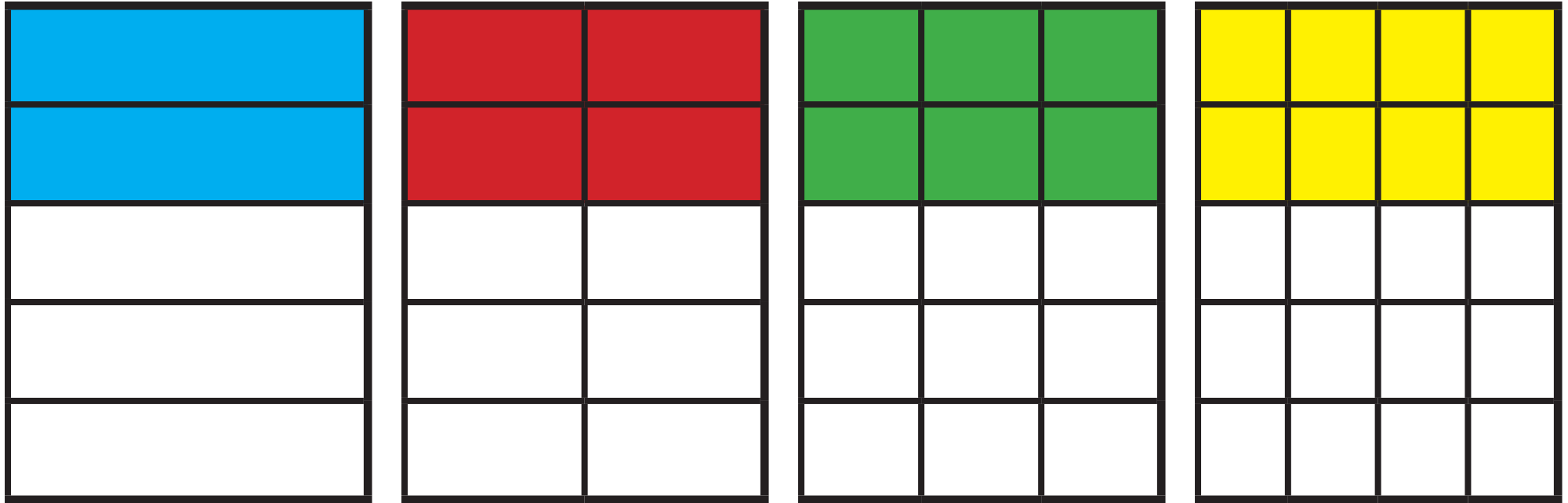
4b



$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16}$$

# FF: Equivalent Fractions

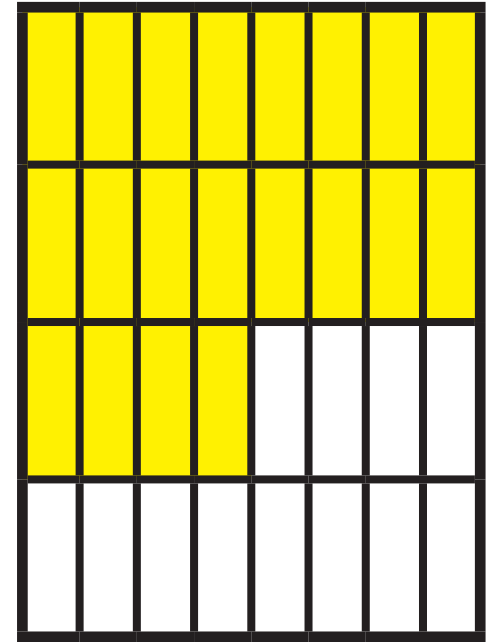
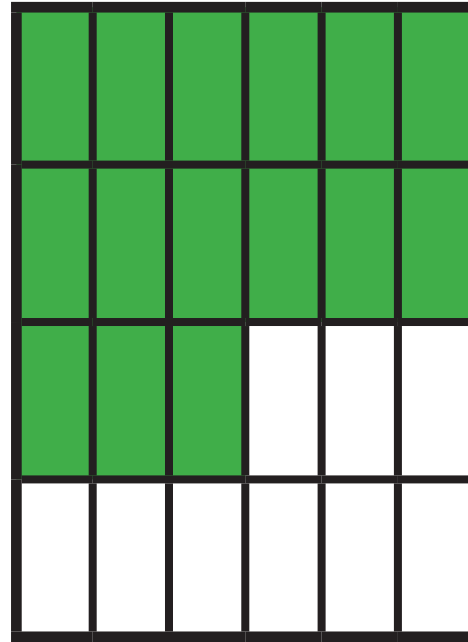
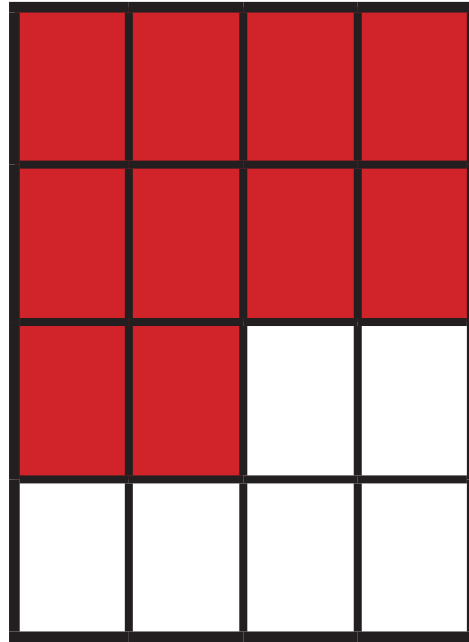
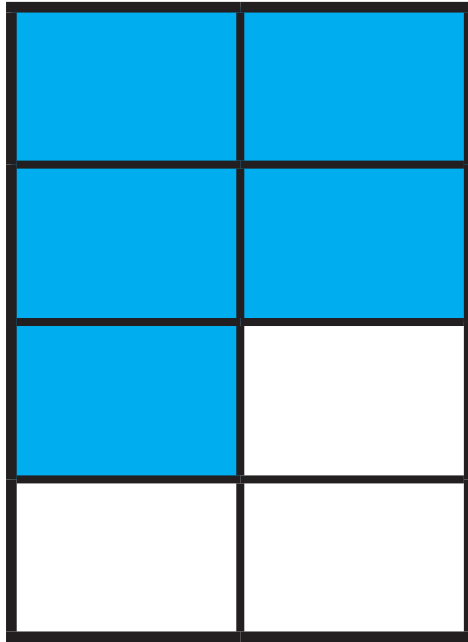
4c



$$\frac{2}{5} = \frac{4}{10} = \frac{6}{15} = \frac{8}{20}$$

# FF: Equivalent Fractions

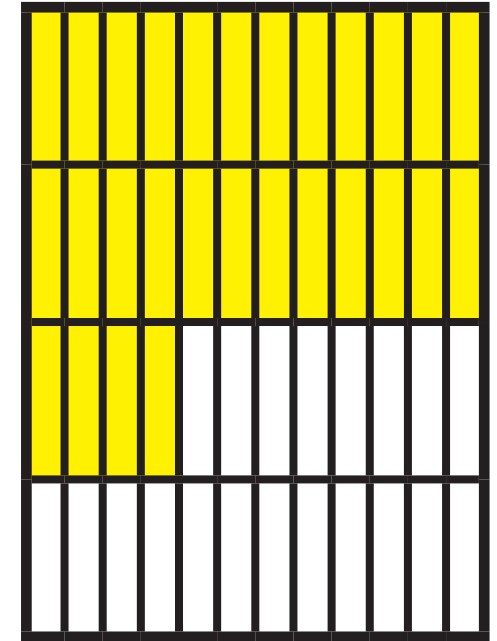
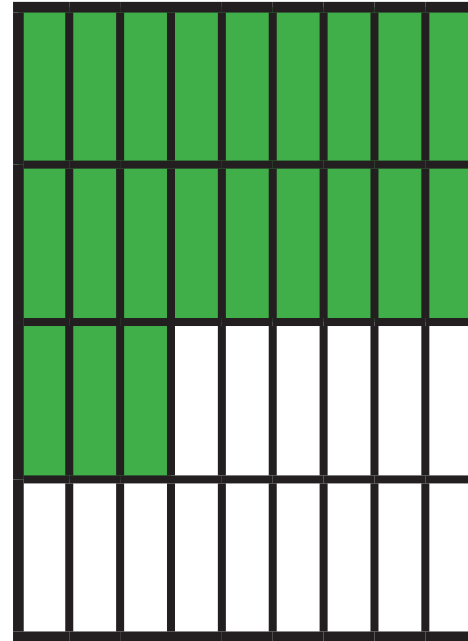
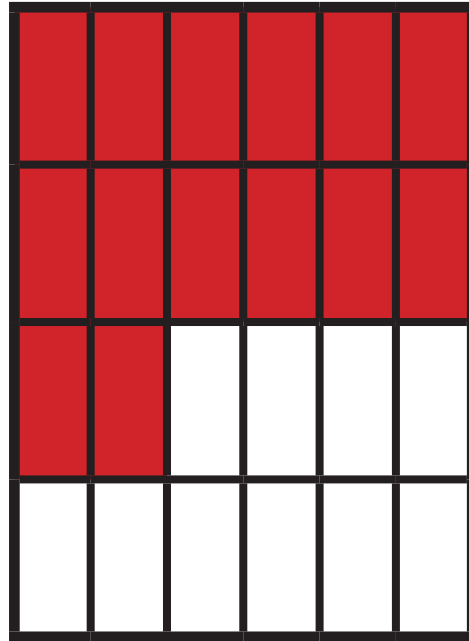
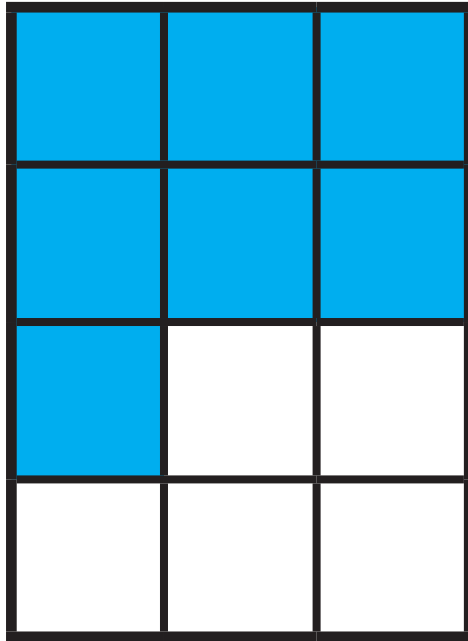
4d



$$\frac{5}{8} = \frac{10}{16} = \frac{15}{24} = \frac{20}{32}$$

# FF: Equivalent Fractions

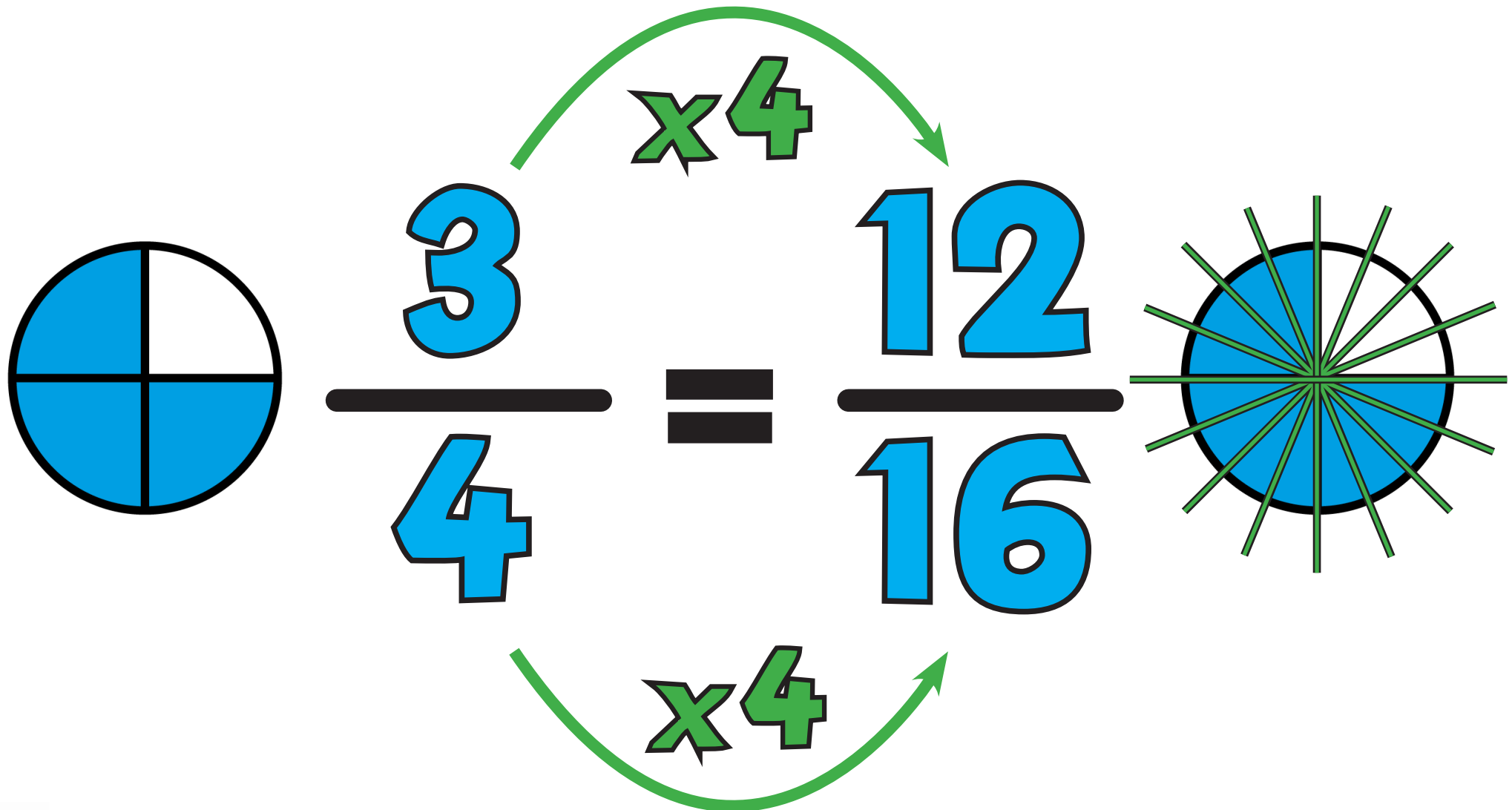
4e



$$\frac{7}{12} = \frac{14}{24} = \frac{21}{36} = \frac{28}{48}$$

# FF: Equivalent Fractions

5



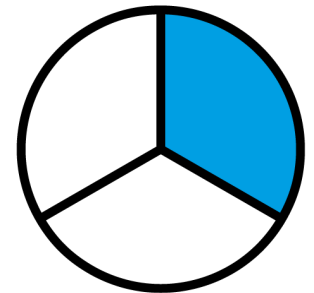


# FF: Equivalent Fractions

6

$$\frac{75}{225} = \frac{1}{3}$$

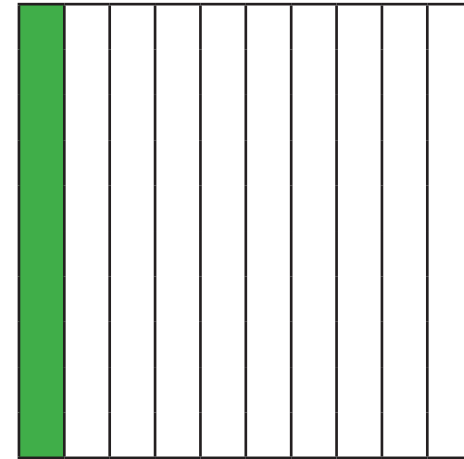
Diagram illustrating the simplification of the fraction  $\frac{75}{225}$  to  $\frac{1}{3}$  by dividing both the numerator and denominator by 75. Green curved arrows indicate the division process, with  $\div 75$  written above and below the fraction bar.



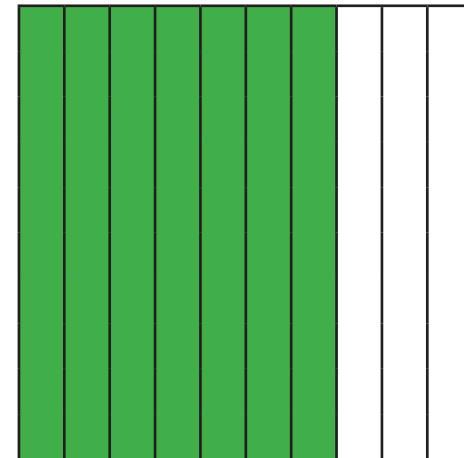
# FG: Decimals/Fractions/Percentages

3

$$\frac{1}{10} = 0.1 =$$



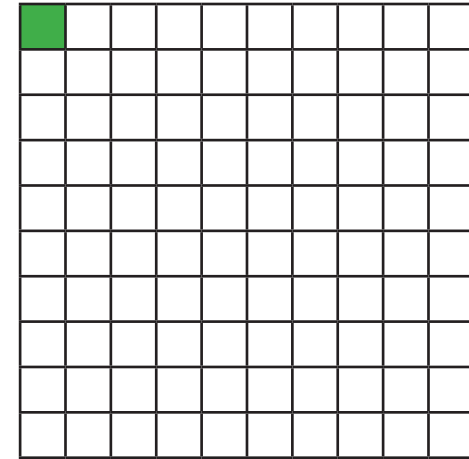
$$\frac{7}{10} = 0.7 =$$



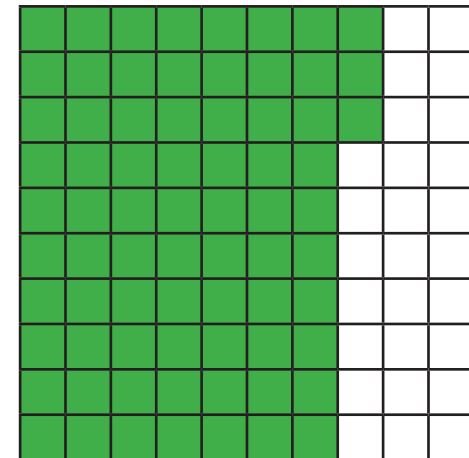
# FH: Decimals/Fractions/Percentages

4

$$\frac{1}{100} = 0.01 =$$



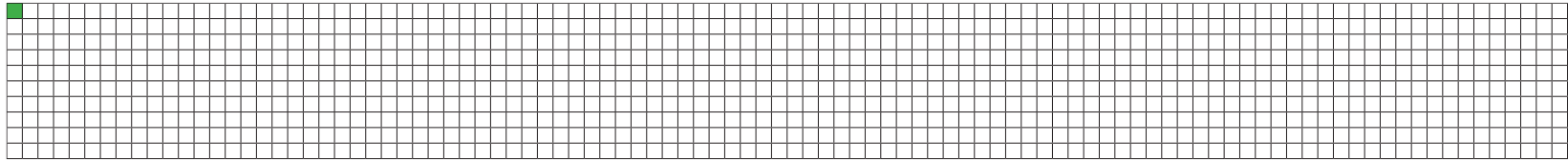
$$\frac{73}{100} = 0.73 =$$



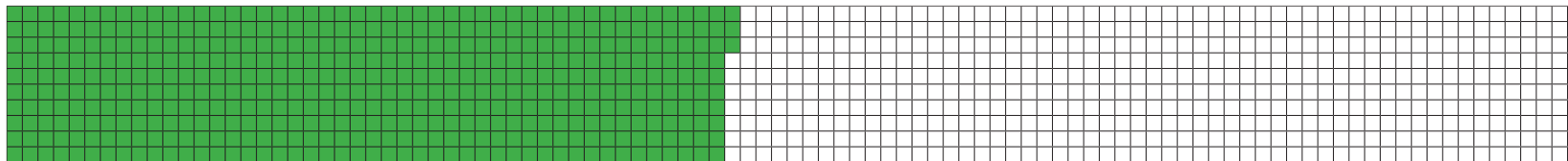
# FG: Decimals/Fractions/Percentages

5a

$$\frac{1}{1000} = 0.001$$



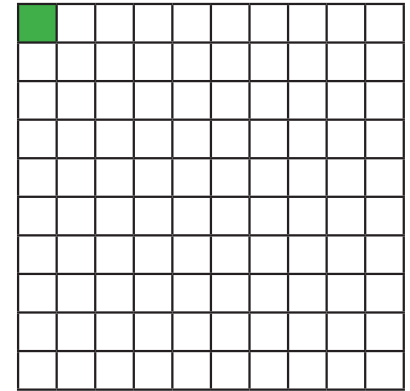
$$\frac{463}{1000} = 0.463$$



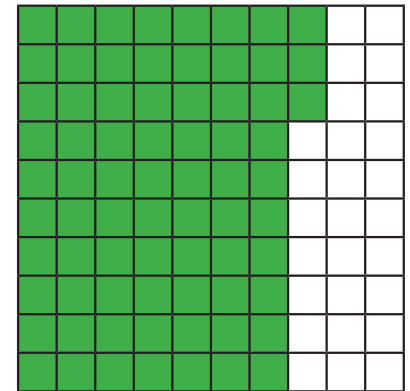
# FG: Decimals/Fractions/Percentages

5b

$$\frac{1}{100} = 0.01 = 1\% =$$



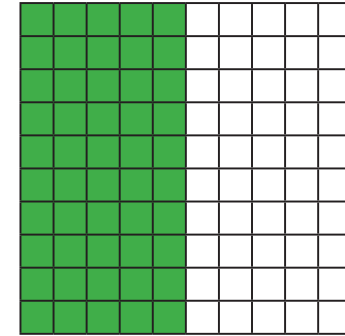
$$\frac{73}{100} = 0.73 = 73\% =$$



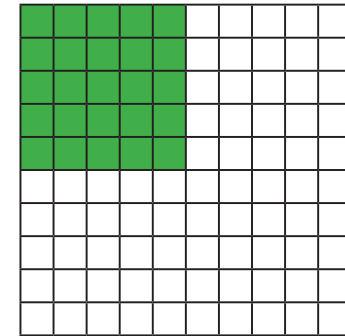
# FH: Common FDP Equivalences

4

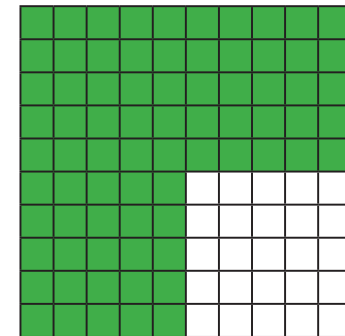
$$\frac{1}{2} = 0.5 =$$



$$\frac{1}{4} = 0.25 =$$



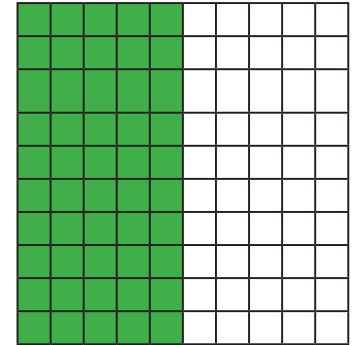
$$\frac{3}{4} = 0.75 =$$



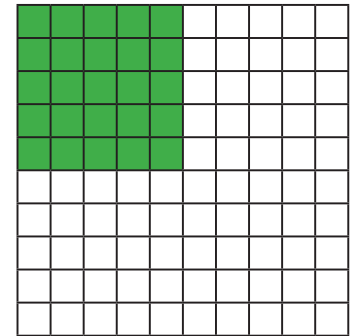
# FH: Common FDP Equivalences

5a

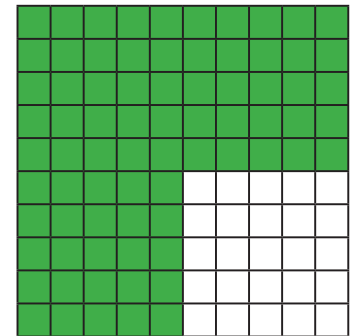
$$\frac{1}{2} = 0.5 = 50\% =$$



$$\frac{1}{4} = 0.25 = 25\% =$$



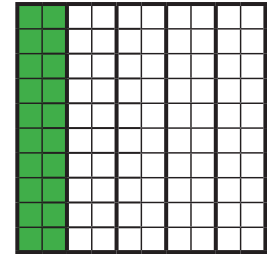
$$\frac{3}{4} = 0.75 = 75\% =$$



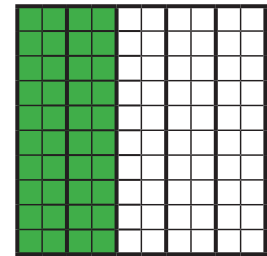
# FH: Common FDP Equivalences

5b

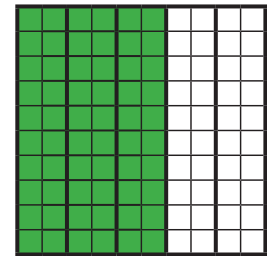
$$\frac{1}{5} = 0.2 = 20\% =$$



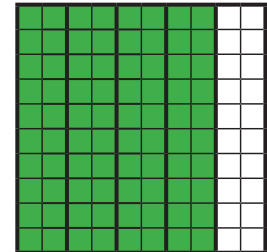
$$\frac{2}{5} = 0.4 = 40\% =$$



$$\frac{3}{5} = 0.6 = 60\% =$$



$$\frac{4}{5} = 0.8 = 80\% =$$





# FH: Common FDP Equivalences

5c

$\frac{1}{1}$ $1.0$ $100\%$			
$\frac{1}{2}$ $0.5$ $50\%$		$\frac{1}{2}$ $0.5$ $50\%$	
$\frac{1}{4}$ $0.25$ $25\%$	$\frac{1}{4}$ $0.25$ $25\%$	$\frac{1}{4}$ $0.25$ $25\%$	$\frac{1}{4}$ $0.25$ $25\%$

# FH: Common FDP Equivalences

5d

$1$ $1.0$ $100\%$									
$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$	$\frac{1}{5}$ $0.2$ $20\%$
$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$	$\frac{1}{10}$ $0.1$ $10\%$

# FH: Common FDP Equivalences

6a

$$\frac{1}{8} = 0.125 = 12.5\% = \text{1 of 8 equal parts shaded green}$$
$$\frac{3}{8} = 0.375 = 37.5\% = \text{3 of 8 equal parts shaded green}$$
$$\frac{5}{8} = 0.625 = 62.5\% = \text{5 of 8 equal parts shaded green}$$
$$\frac{7}{8} = 0.875 = 87.5\% = \text{7 of 8 equal parts shaded green}$$

# FH: Common FDP Equivalences

6b

$$\frac{1}{3} = 0.\underline{3}\dot{3} = 33.\dot{3}\% = \triangle$$

$$\frac{2}{3} = 0.\underline{6}\dot{6} = 66.\dot{6}\% = \triangle$$

# FH: Common FDP Equivalences

6c

$$\frac{1}{6} = 0.1\bar{6} = 16.\bar{6}\% = \text{1 of 6 sectors shaded in a circle}$$

$$\frac{3}{6} = 0.5 = 50\% = \text{3 of 6 sectors shaded in a circle}$$

$$\frac{5}{6} = 0.8\bar{3} = 83.\bar{3}\% = \text{5 of 6 sectors shaded in a circle}$$

# FH: Common FDP Equivalences

6d

$\frac{1}{7}$	=	$0.\overline{142857}$	=	$14.\overline{285714}\%$	=	
$\frac{2}{7}$	=	$0.\overline{285714}$	=	$28.\overline{571428}\%$	=	
$\frac{3}{7}$	=	$0.\overline{428571}$	=	$42.\overline{857142}\%$	=	
$\frac{4}{7}$	=	$0.\overline{571428}$	=	$57.\overline{142857}\%$	=	
$\frac{5}{7}$	=	$0.\overline{714285}$	=	$71.\overline{428571}\%$	=	
$\frac{6}{7}$	=	$0.\overline{857142}$	=	$85.\overline{714285}\%$	=	

# FH: Common FDP Equivalences

6e

$\frac{1}{1}$ $1.0$ $100\%$					
$\frac{1}{3}$ $0.\dot{3}\dot{3}$ $33.\dot{3}\%$	$\frac{1}{3}$ $0.\dot{3}\dot{3}$ $33.\dot{3}\%$	$\frac{1}{3}$ $0.\dot{3}\dot{3}$ $33.\dot{3}\%$	$\frac{1}{3}$ $0.\dot{3}\dot{3}$ $33.\dot{3}\%$	$\frac{1}{3}$ $0.\dot{3}\dot{3}$ $33.\dot{3}\%$	$\frac{1}{3}$ $0.\dot{3}\dot{3}$ $33.\dot{3}\%$
$\frac{1}{6}$ $0.\dot{1}\dot{6}$ $16.\dot{6}\%$	$\frac{1}{6}$ $0.\dot{1}\dot{6}$ $16.\dot{6}\%$	$\frac{1}{6}$ $0.\dot{1}\dot{6}$ $16.\dot{6}\%$	$\frac{1}{6}$ $0.\dot{1}\dot{6}$ $16.\dot{6}\%$	$\frac{1}{6}$ $0.\dot{1}\dot{6}$ $16.\dot{6}\%$	$\frac{1}{6}$ $0.\dot{1}\dot{6}$ $16.\dot{6}\%$

# FH: Common FDP Equivalences

6f

<div>1</div> <div>1.0</div> <div>100%</div>								
<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>	<div><math>\frac{1}{7}</math></div> <div>0.143</div> <div>14.3%</div>
<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>	<div><math>\frac{1}{9}</math></div> <div>0.11</div> <div>11.1%</div>



# F1: Fractions to 1

2a

Halves and Quarters

$\frac{4}{4} = 1$ Whole			
	$\frac{3}{4}$		$\frac{1}{4}$
$\frac{2}{4}$	$\frac{2}{4}$		
$\frac{1}{2}$	$\frac{1}{2}$		

# F1: Fractions to 1

2b

Thirds

$$\frac{3}{3} = 1 \text{ Whole}$$

$$\frac{2}{3}$$

$$\frac{1}{3}$$

$$\frac{1}{3}$$

$$\frac{2}{3}$$

# F1: Fractions to 1

3a

Fifths

$$\frac{5}{5} = 1 \text{ Whole}$$

$$\frac{4}{5}$$

$$\frac{1}{5}$$

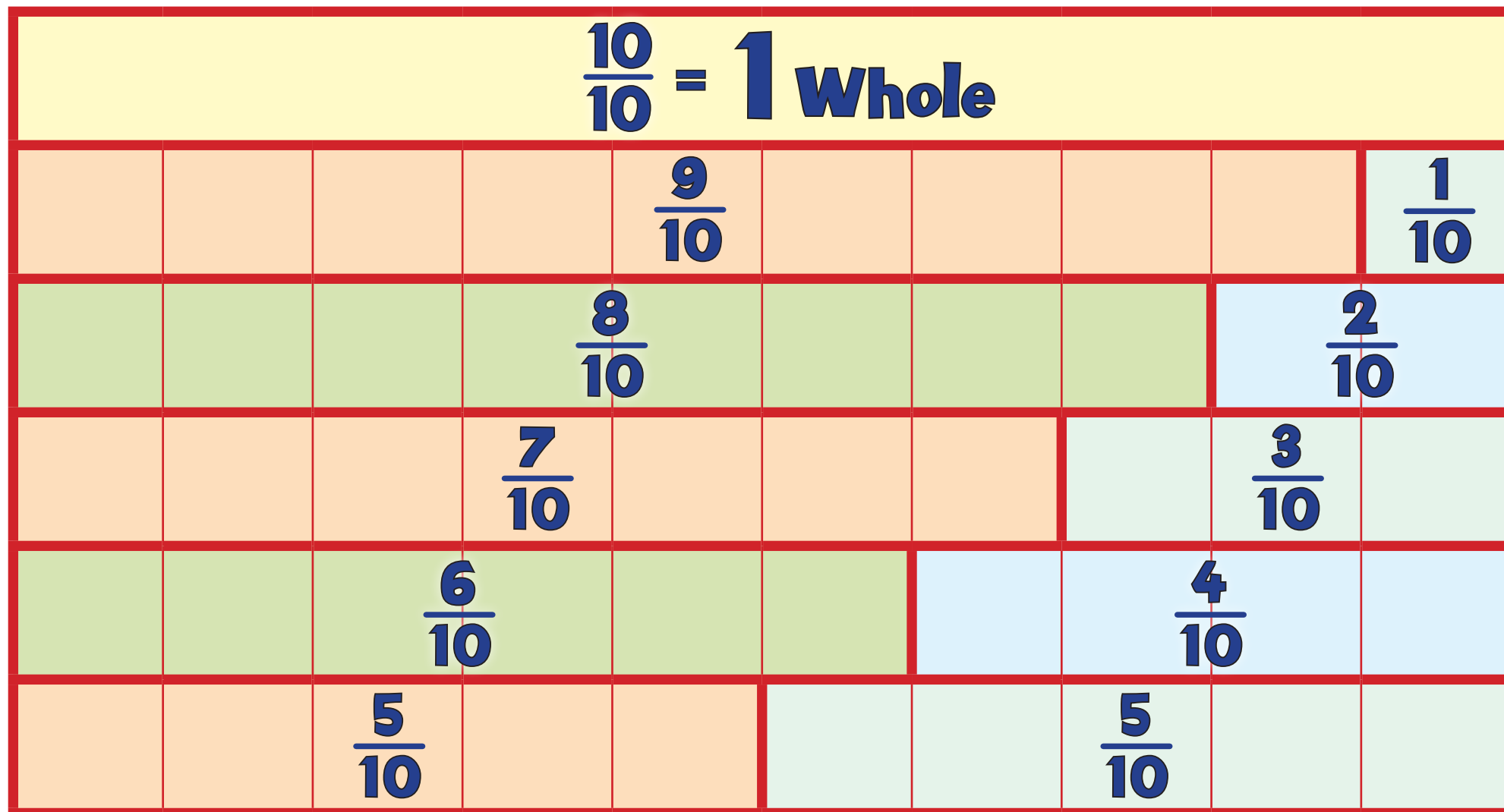
$$\frac{3}{5}$$

$$\frac{2}{5}$$

# Fl: Fractions to 1

3b

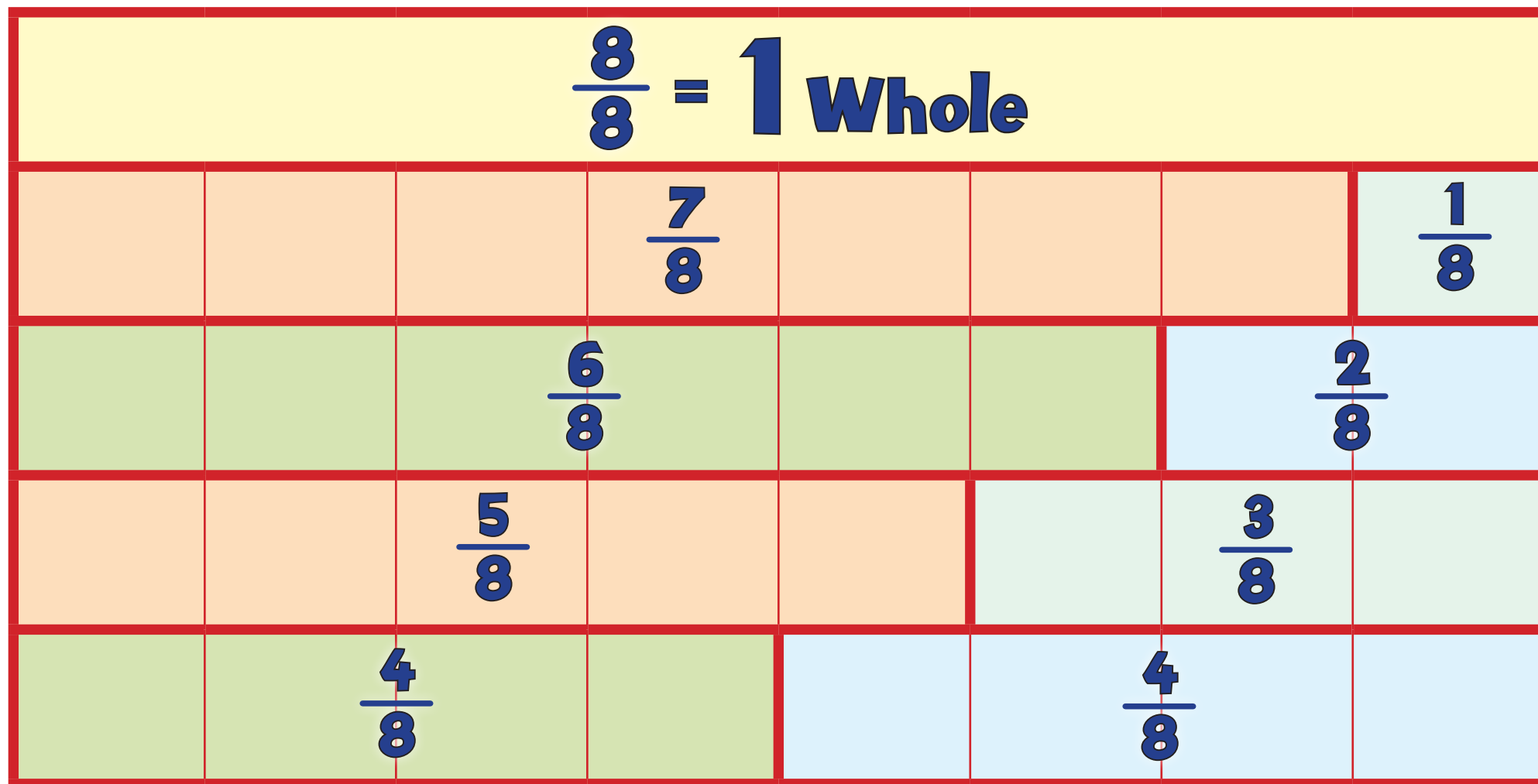
Tenths



# F1: Fractions to 1

3c

Eighths

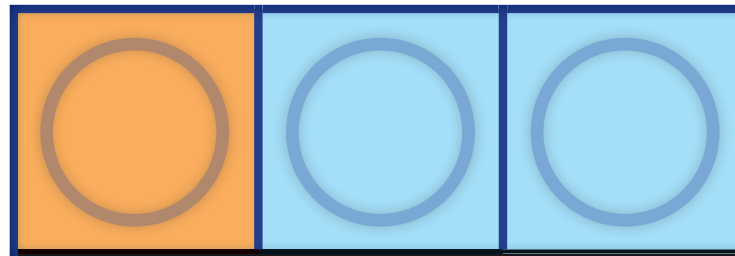


# F1: Fractions to 1

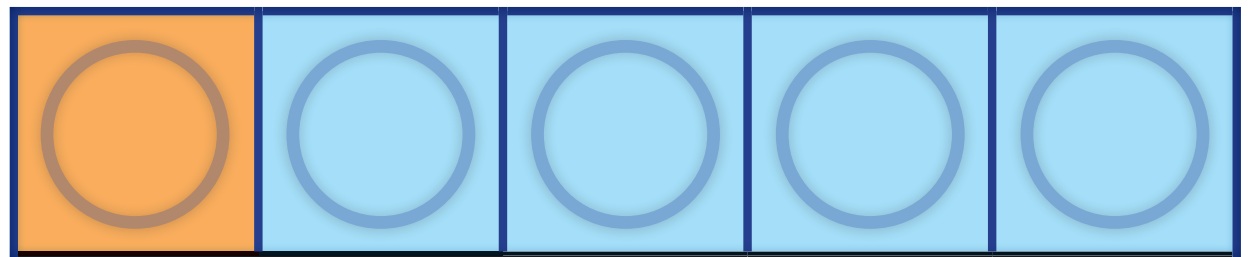
3d

Make a Whole!

$$\frac{1}{3} + \frac{2}{3}$$



$$\frac{1}{5} + \frac{4}{5}$$

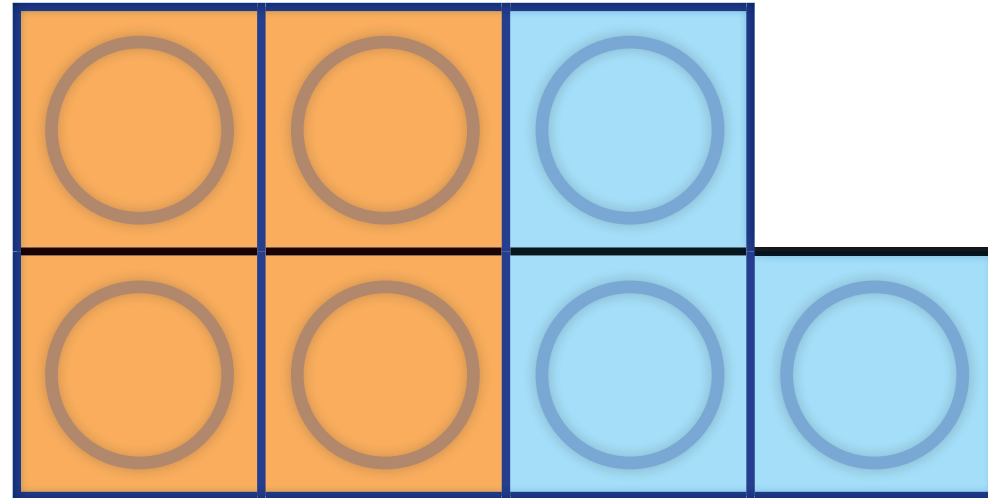


# F1: Fractions to 1

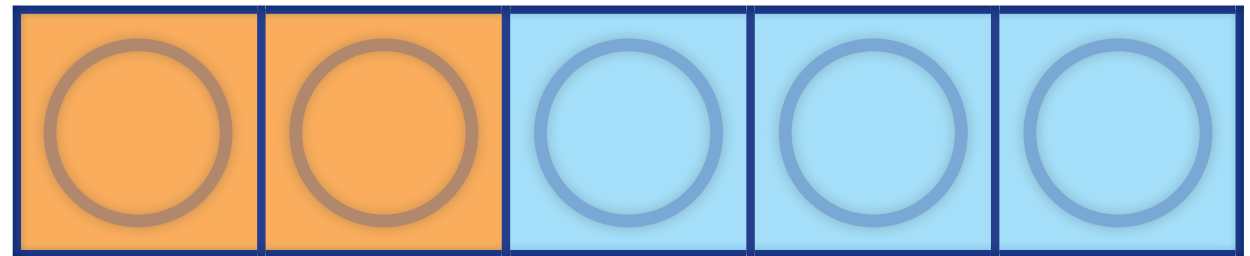
3e

Make a Whole!

$$\frac{4}{7} + \frac{3}{7}$$



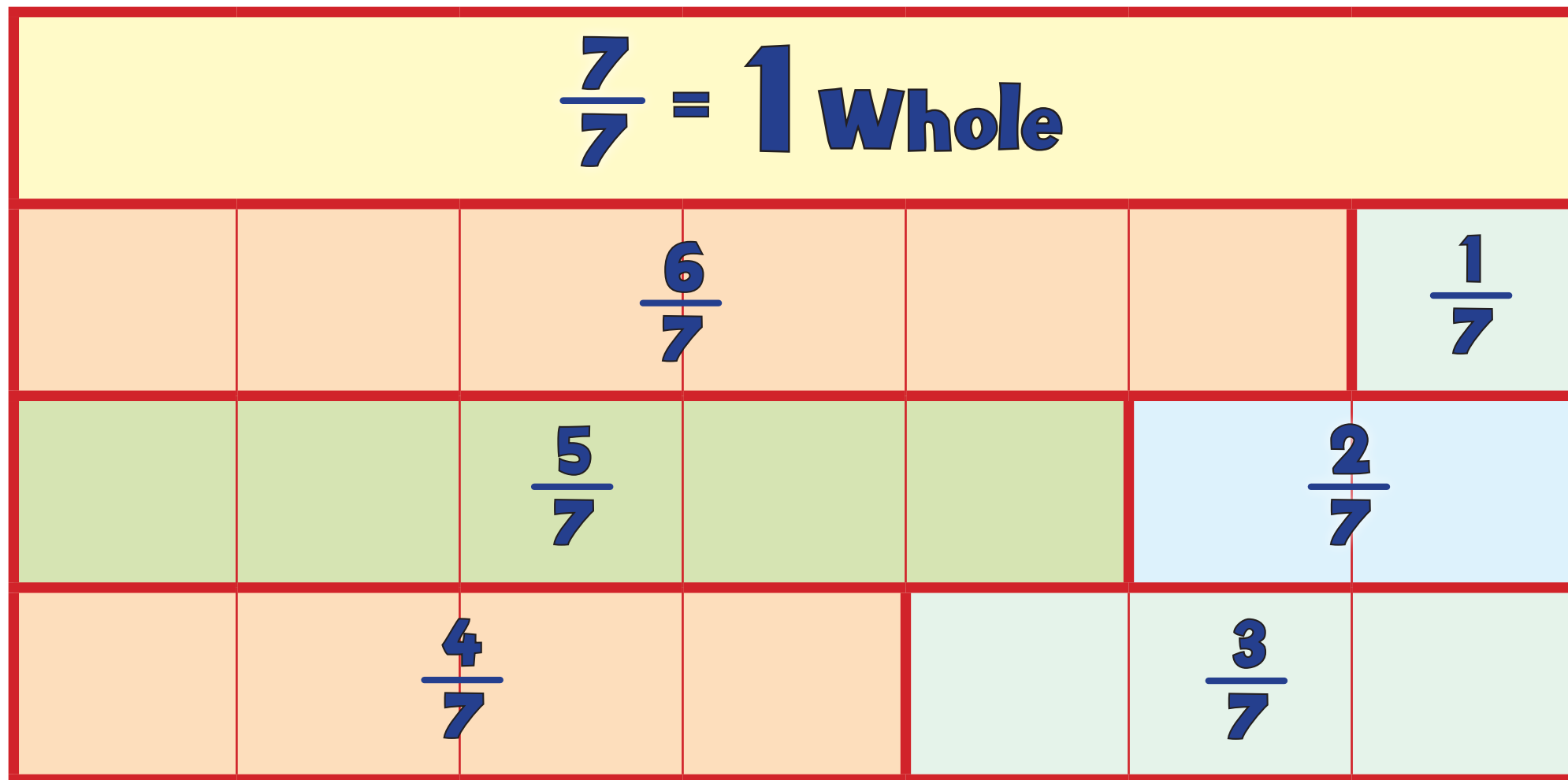
$$\frac{2}{5} + \frac{3}{5}$$



# F1: Fractions to 1

4a

Sevenths

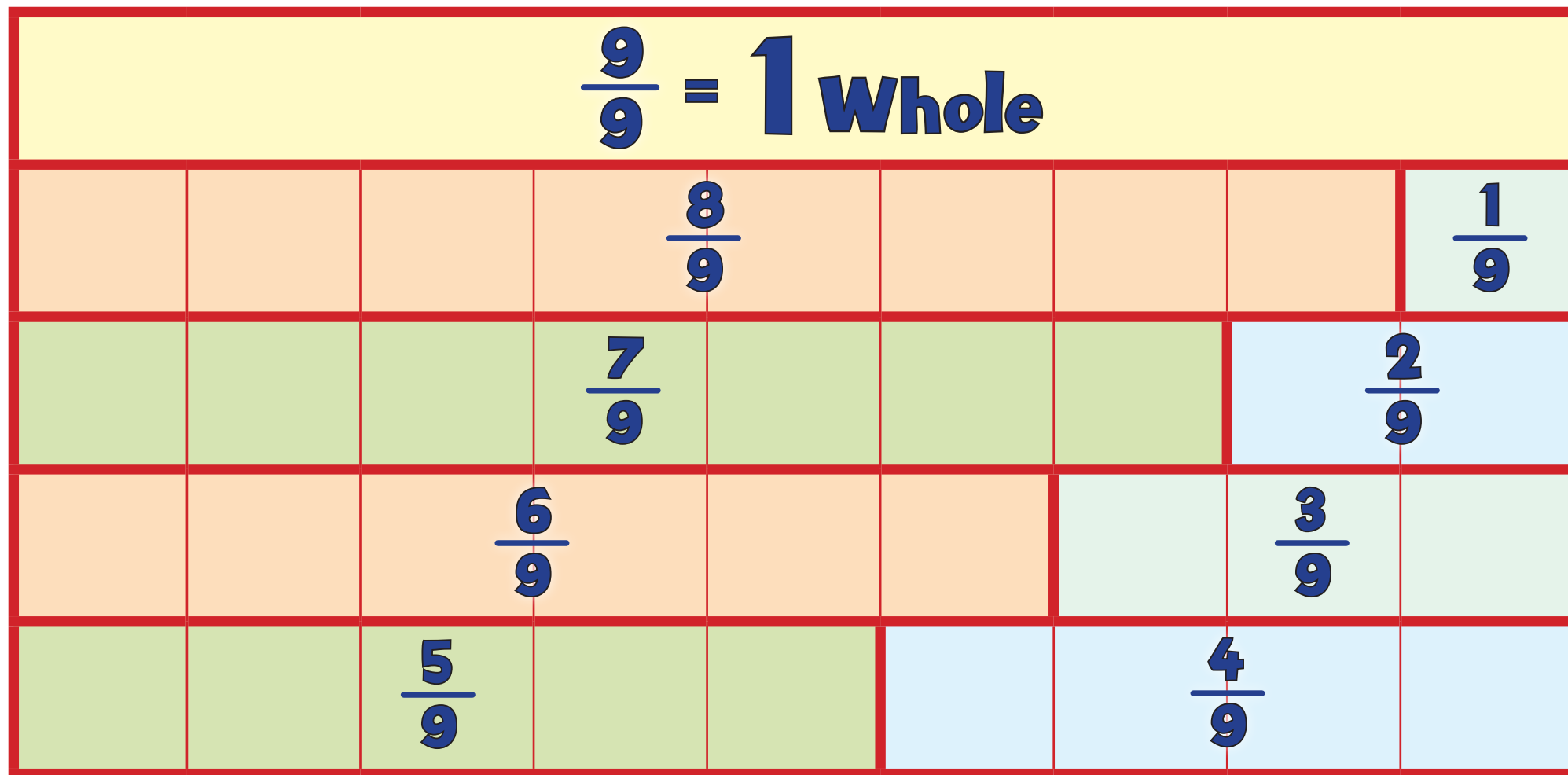




# F1: Fractions to 1

4b

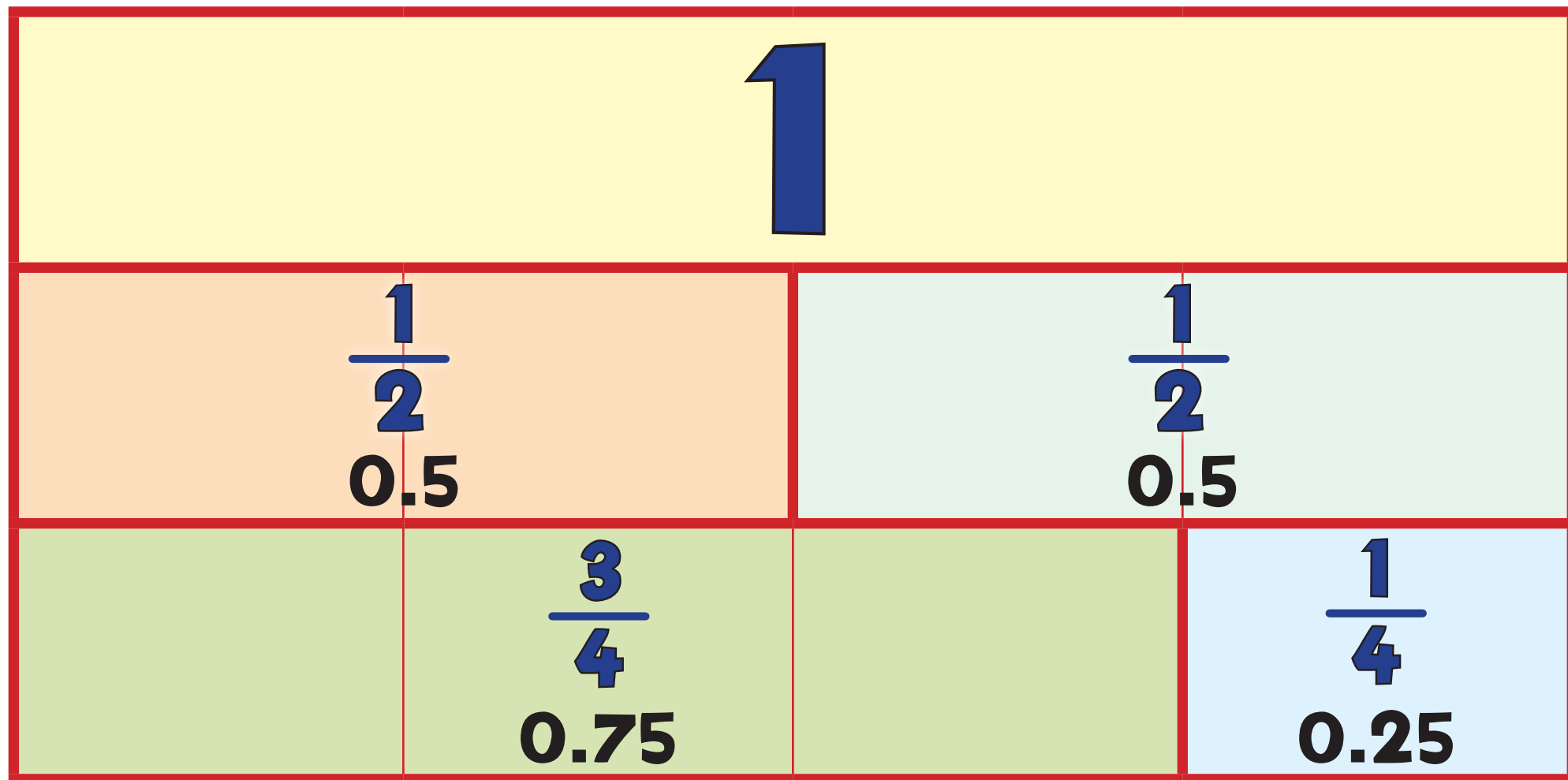
Ninths



# F1: Fractions to 1

4c

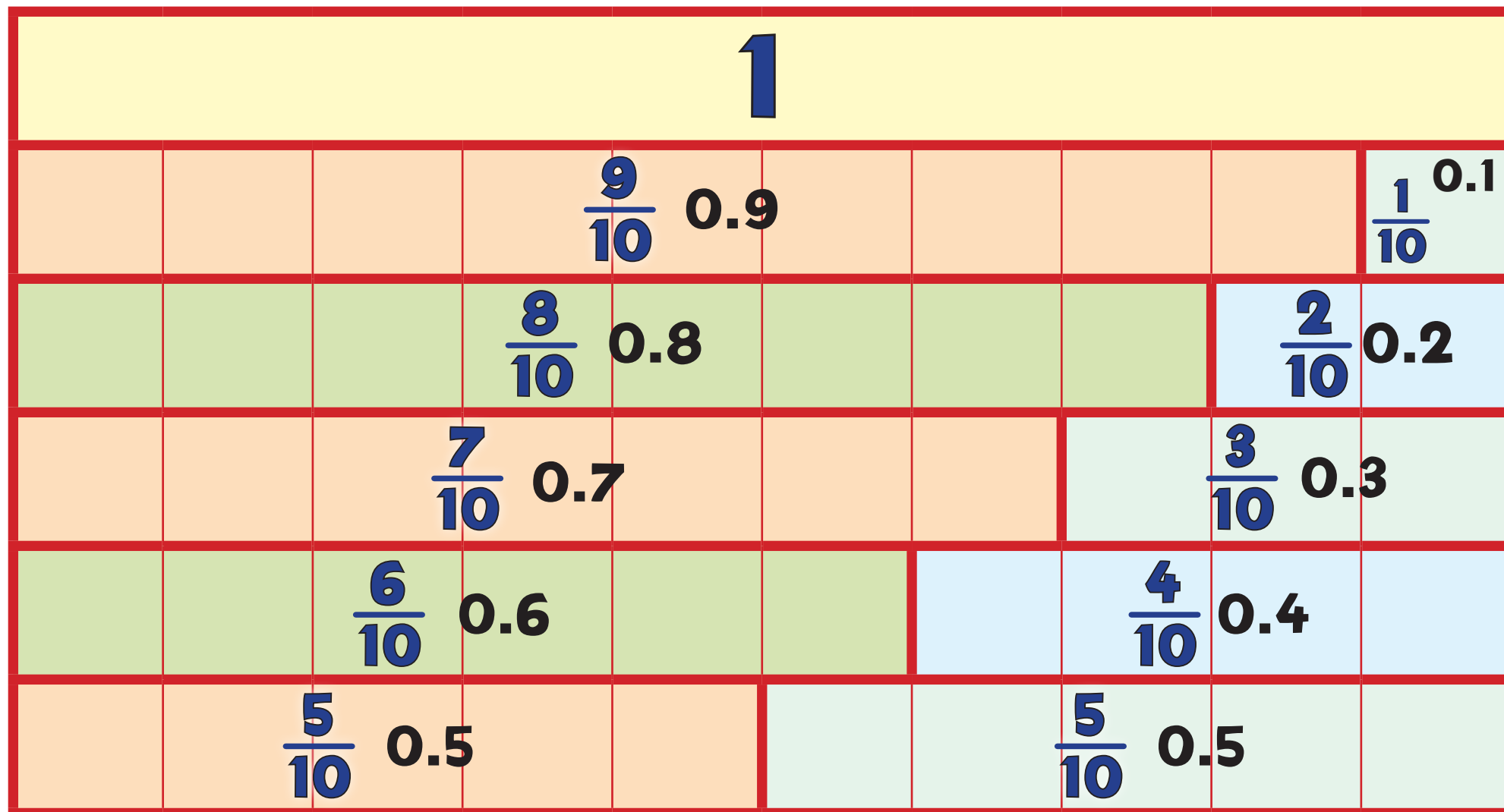
Halves and Quarters



# F1: Fractions to 1

4d

Tenths

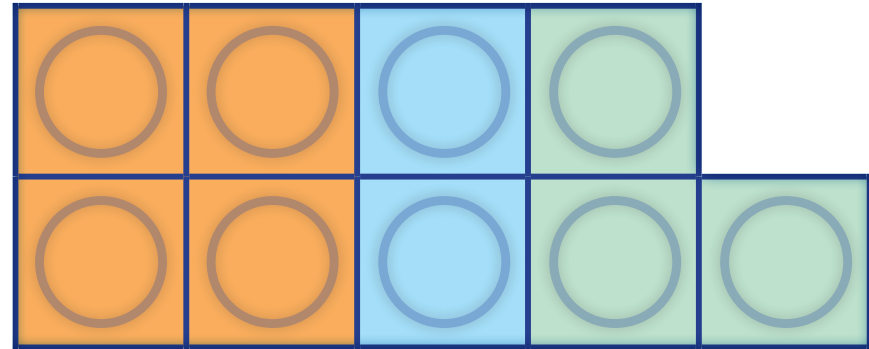


# F1: Fractions to 1

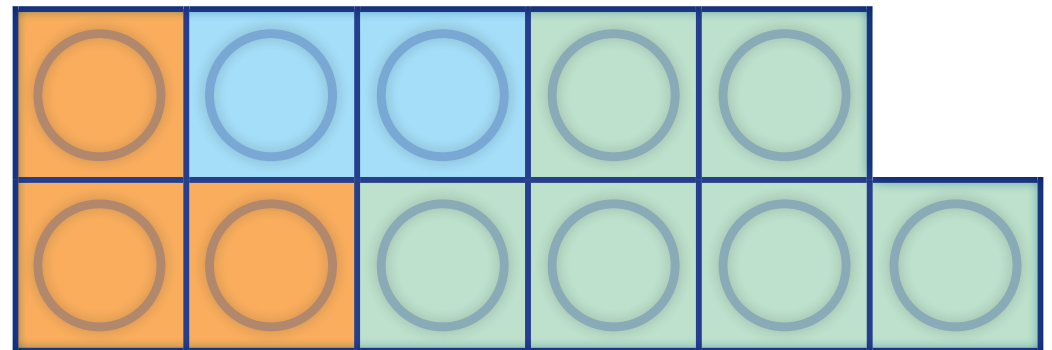
4e

Make a Whole!

$$\frac{4}{9} + \frac{2}{9} + \frac{3}{9}$$



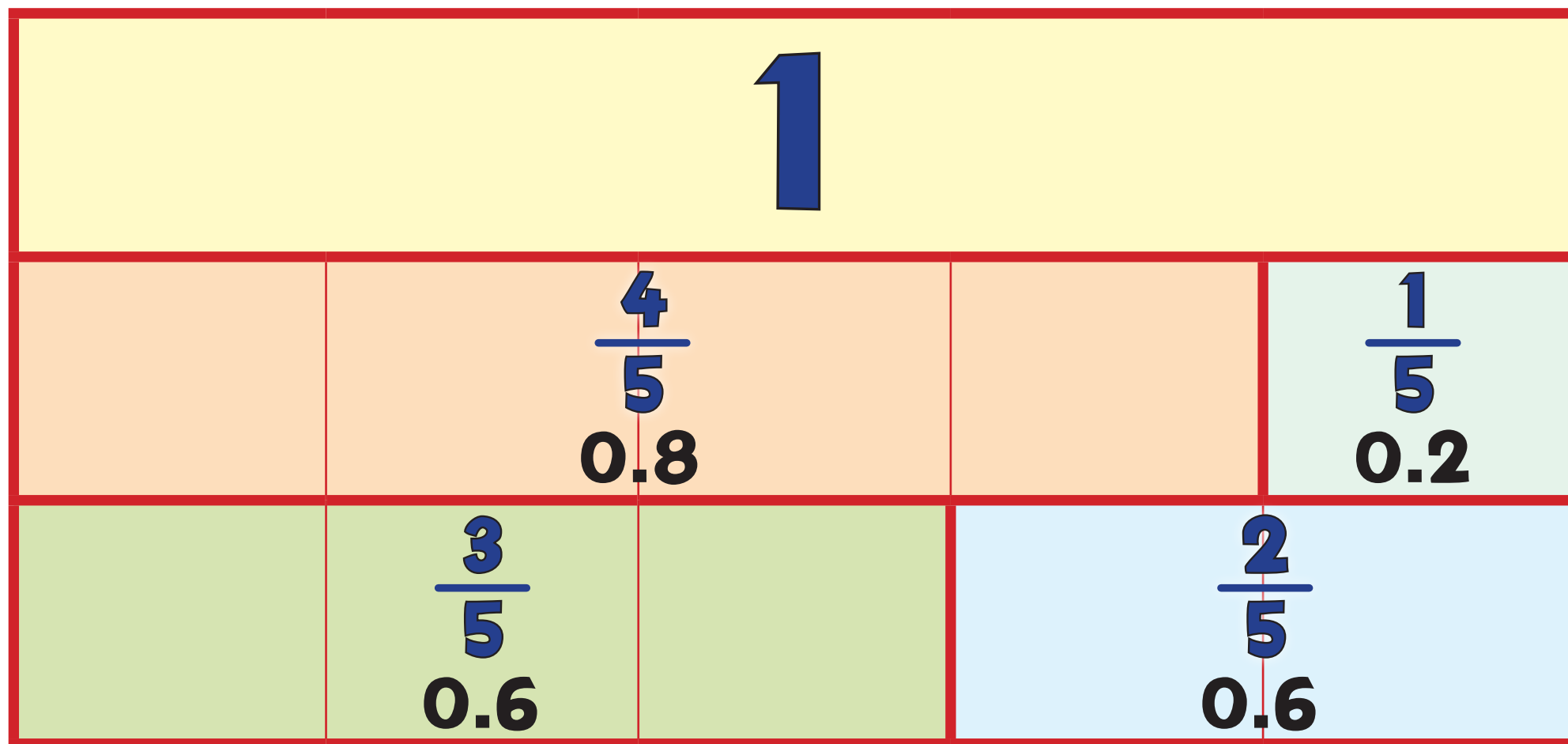
$$\frac{3}{11} + \frac{2}{11} + \frac{6}{11}$$



# Fl: Fractions to 1

5a

Fifths



# F1: Fractions to 1

5b

Thirds

1

$\frac{2}{3}$

0.6 $\dot{6}$

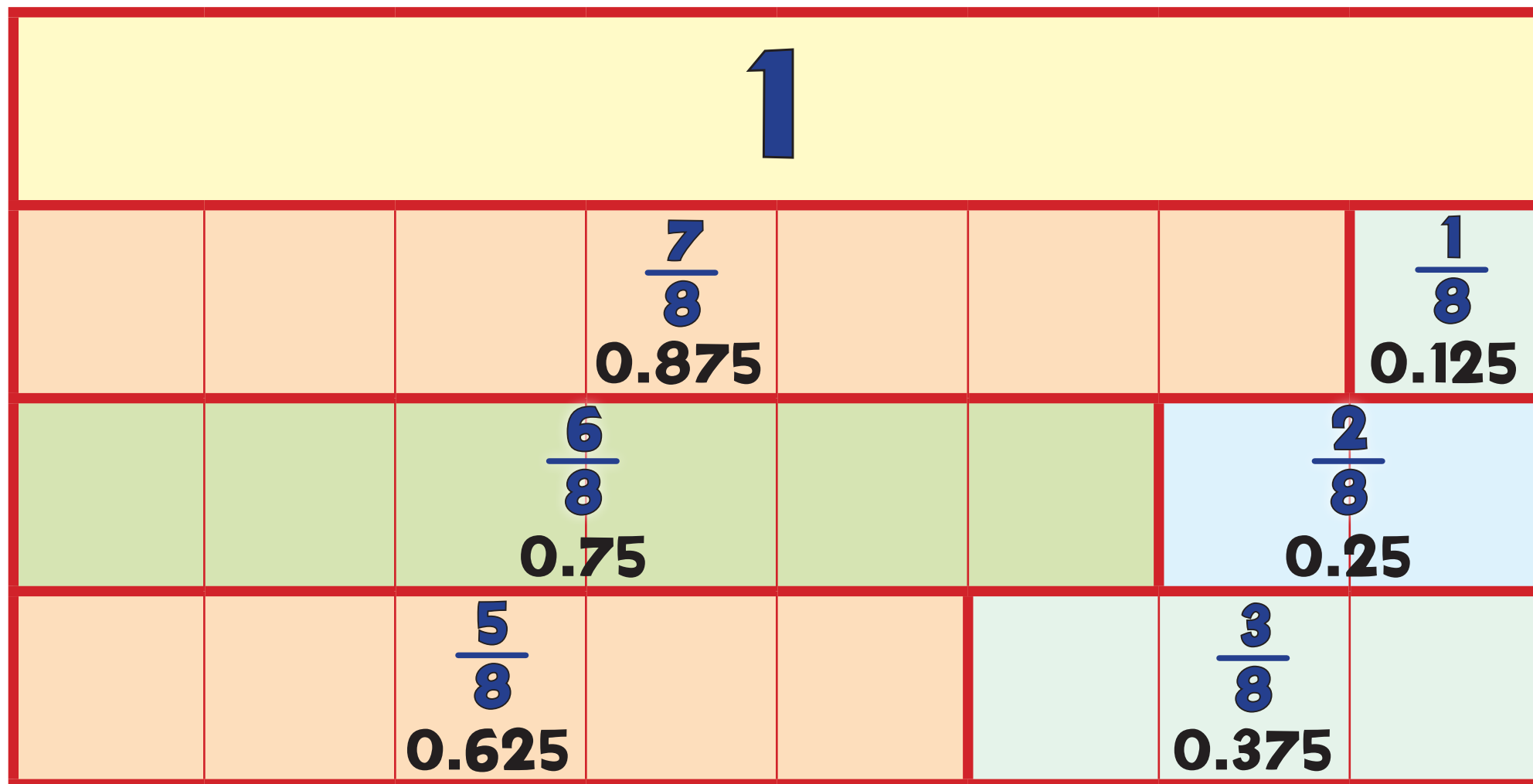
$\frac{1}{3}$

0.3 $\dot{3}$

# Fl: Fractions to 1

6

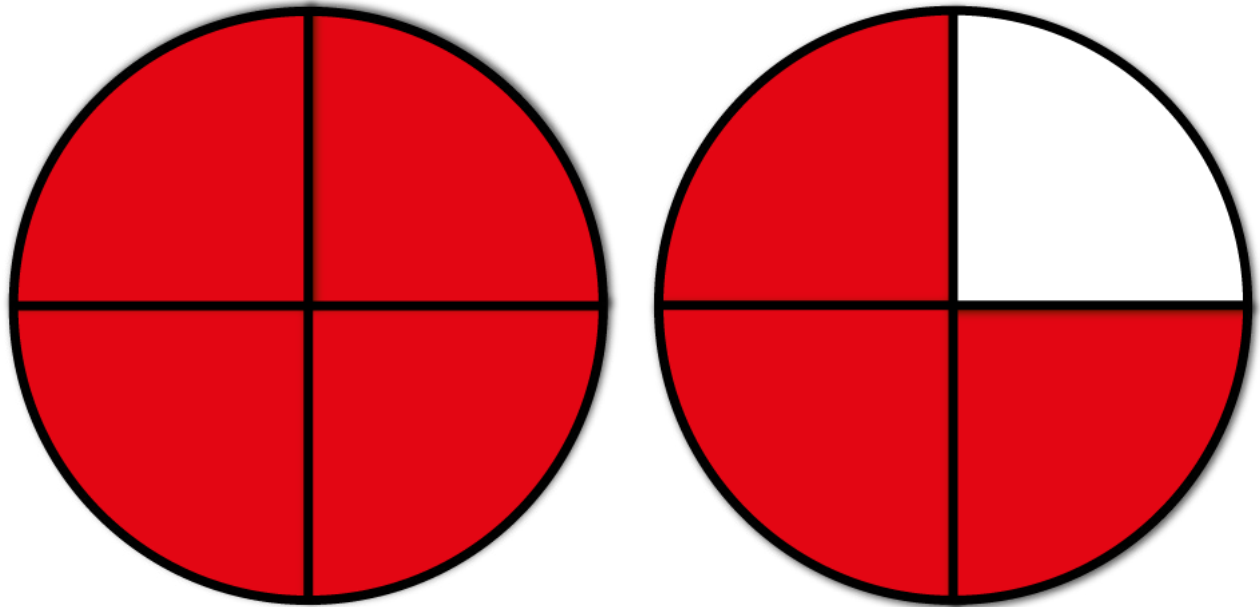
Eighths



# FJ: Fractions Greater than 1

$$1\frac{3}{4}$$

$$\frac{7}{4}$$

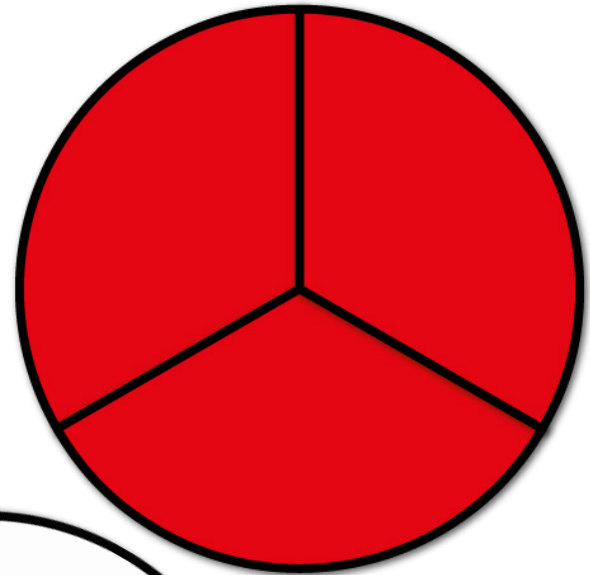
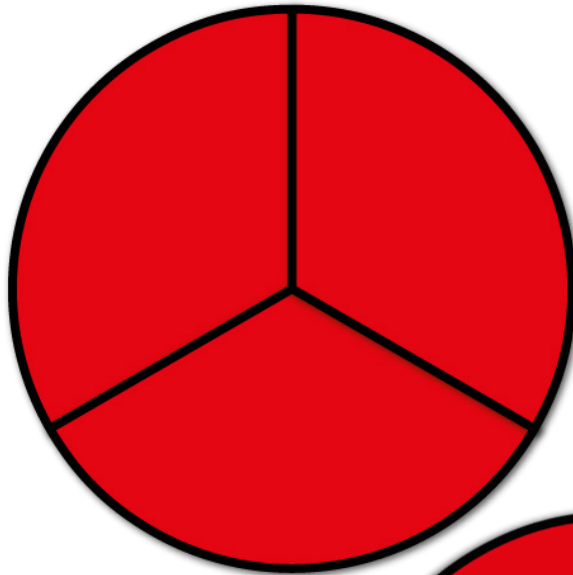




# FJ: Fractions Greater than 1

$$2\frac{1}{3}$$

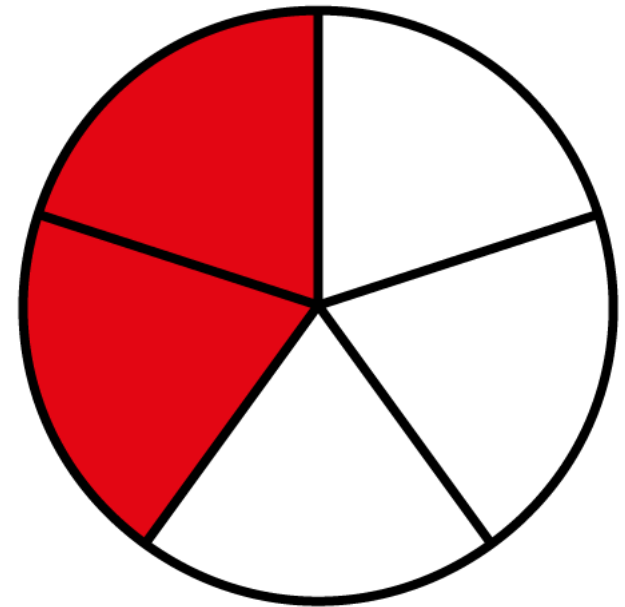
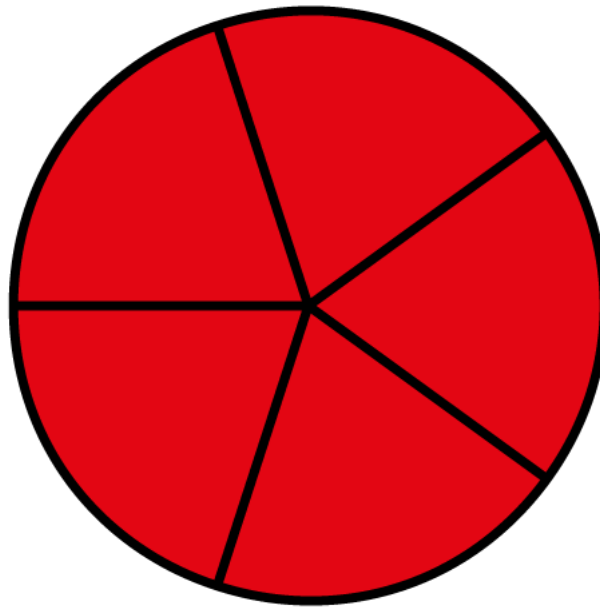
$$\frac{7}{3}$$



# FJ: Fractions Greater than 1

$$1\frac{2}{5}$$

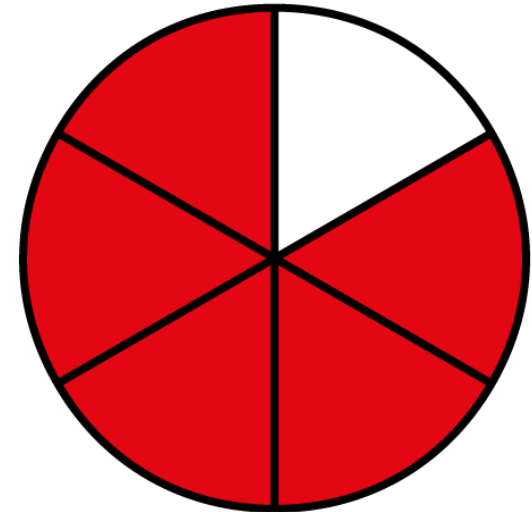
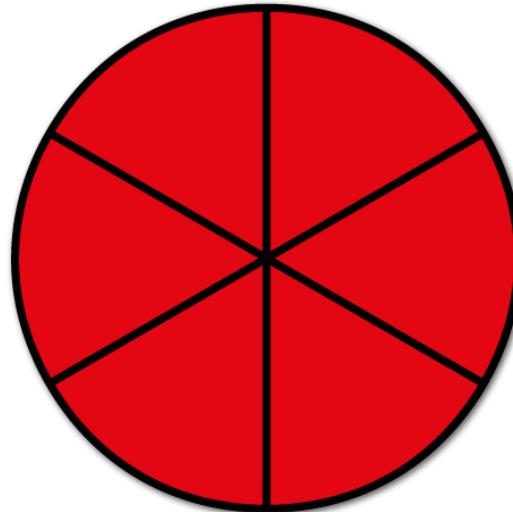
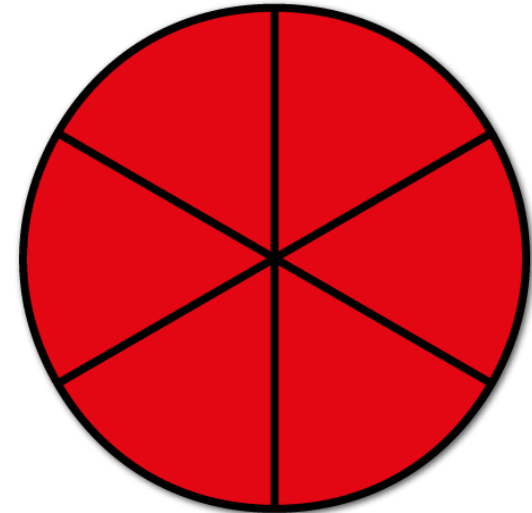
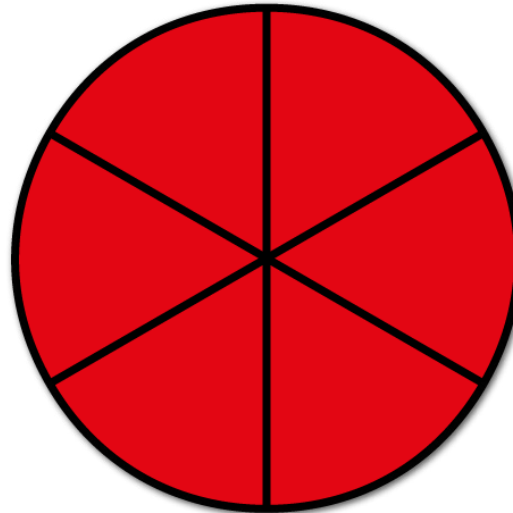
$$\frac{7}{5}$$



# FJ: Fractions Greater than 1

$$3\frac{5}{6}$$

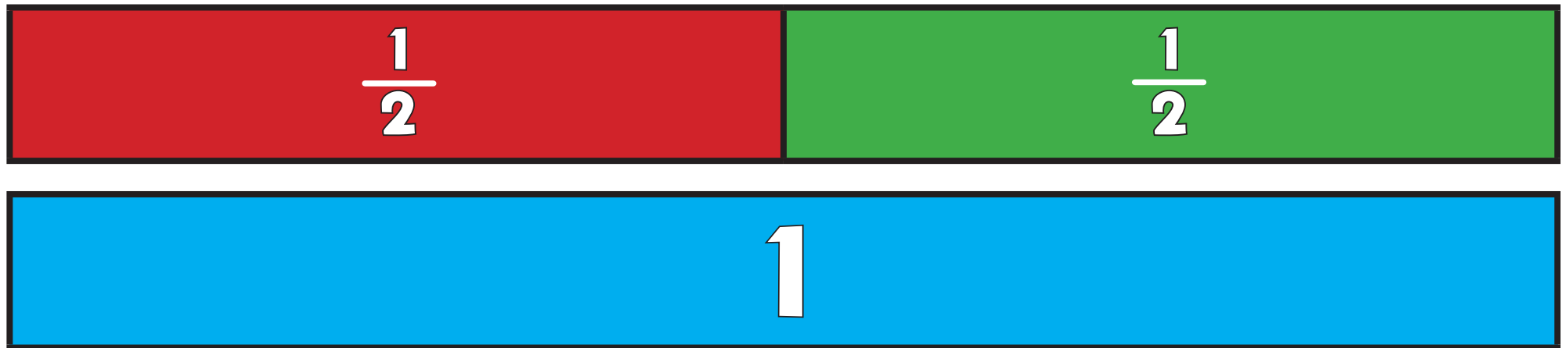
$$\frac{23}{6}$$



# FK: Calculating with Fractions

1+

$$\frac{1}{2} + \frac{1}{2} = 1$$



# FK: Calculating with Fractions

2+

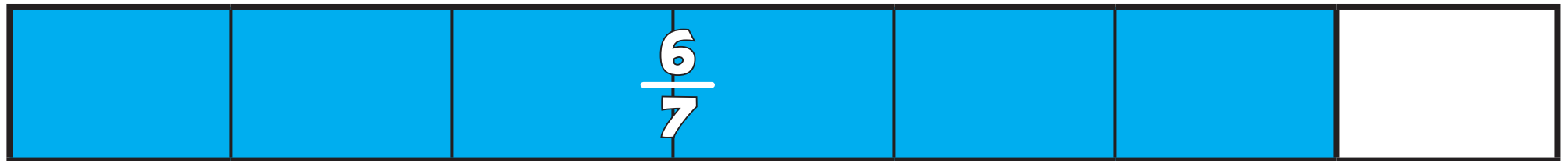
$$\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$



# FK: Calculating with Fractions

3+

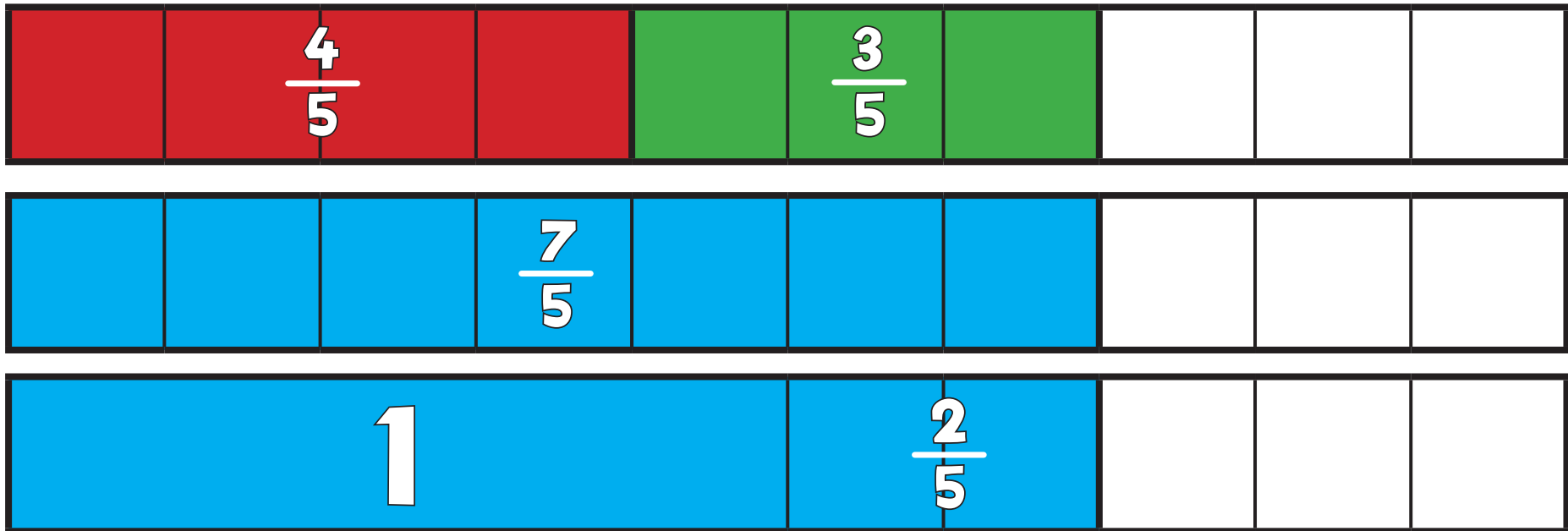
$$\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$$



# FK: Calculating with Fractions

4+

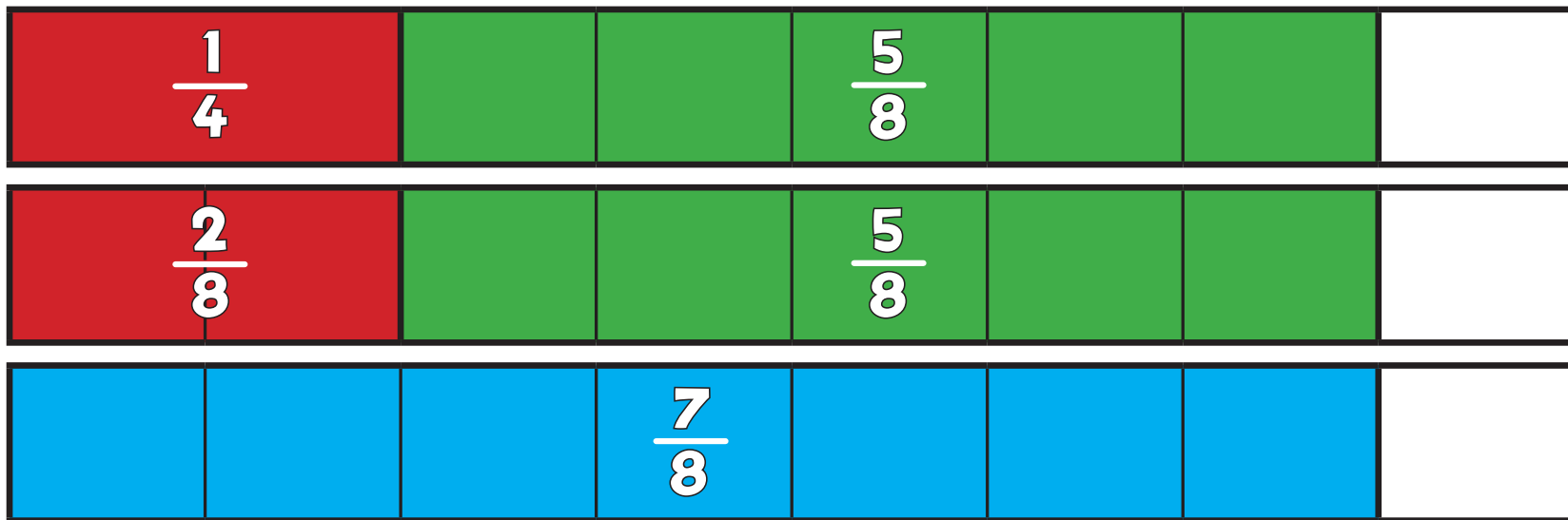
$$\frac{4}{5} + \frac{3}{5} = \frac{7}{5} = 1\frac{2}{5}$$



# FK: Calculating with Fractions

5+

$$\frac{1}{4} + \frac{5}{8} = \frac{2}{8} + \frac{5}{8} = \frac{7}{8}$$

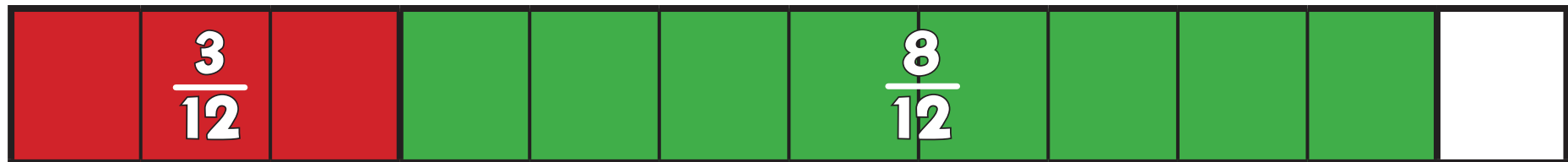




# FK: Calculating with Fractions

6+a

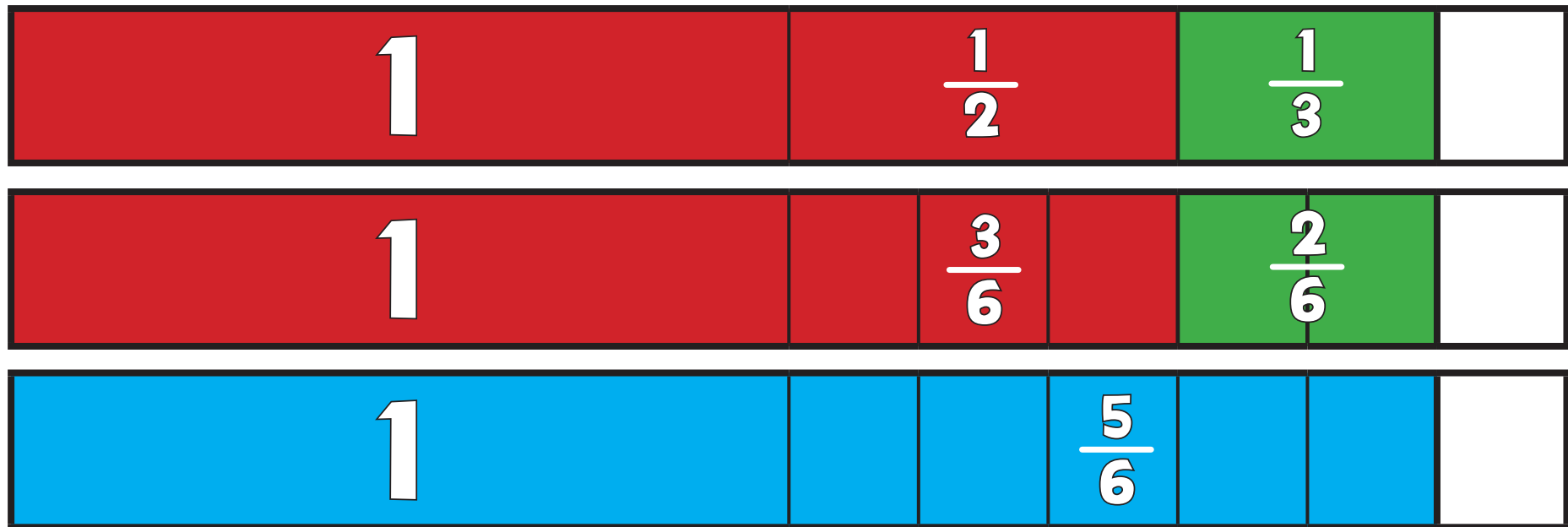
$$\frac{1}{4} + \frac{2}{3} = \frac{3}{12} + \frac{8}{12} = \frac{11}{12}$$



# FK: Calculating with Fractions

6+b

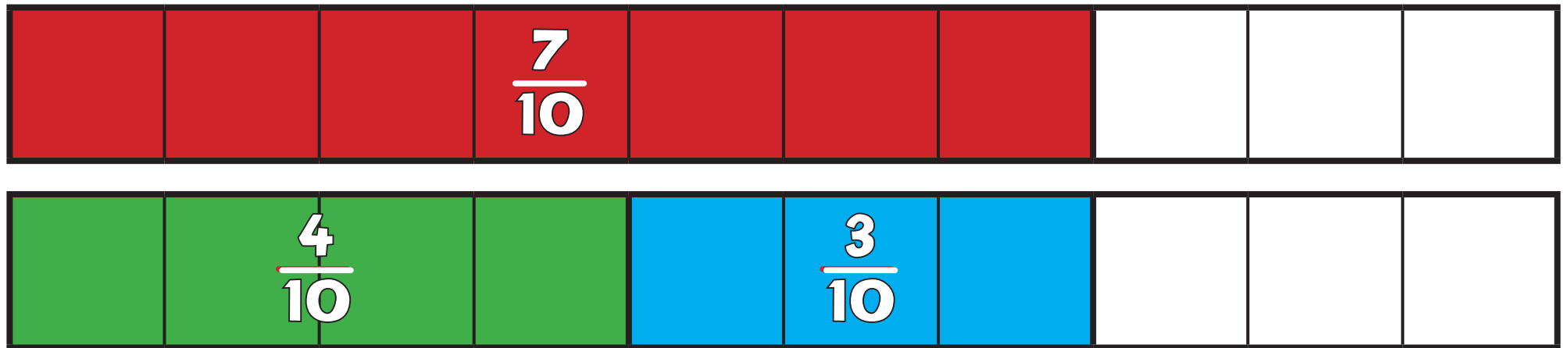
$$1\frac{1}{2} + \frac{1}{3} = 1\frac{3}{6} + \frac{2}{6} = 1\frac{5}{6}$$



# FK: Calculating with Fractions

3-

$$\frac{7}{10} - \frac{4}{10} = \frac{3}{10}$$



# FK: Calculating with Fractions

4-

$$\frac{9}{8} - \frac{5}{8} = \frac{4}{8}$$



# FK: Calculating with Fractions

5-

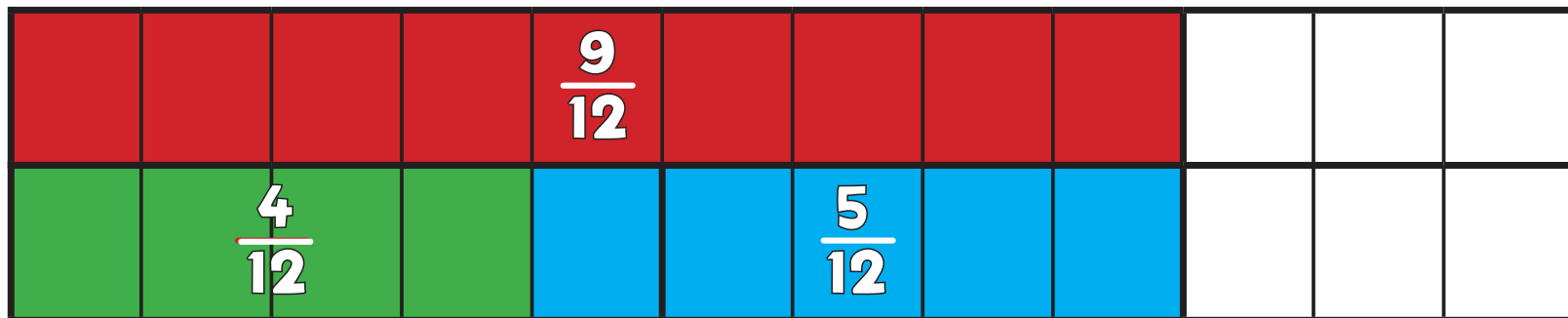
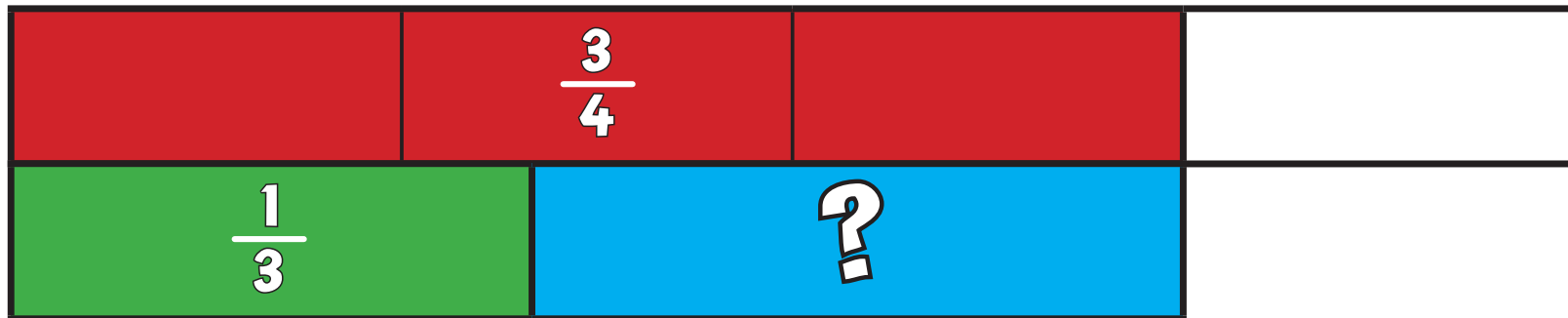
$$\frac{9}{10} - \frac{3}{5} = \frac{3}{10}$$



# FK: Calculating with Fractions

6-a

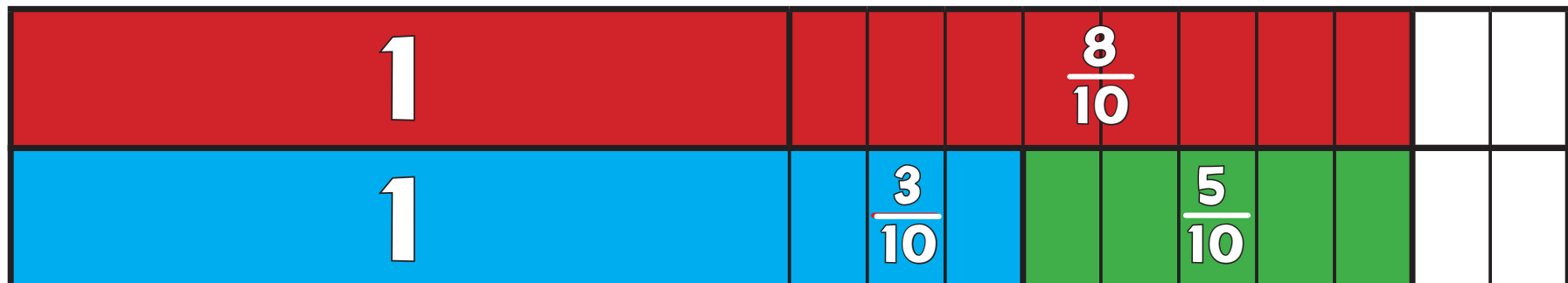
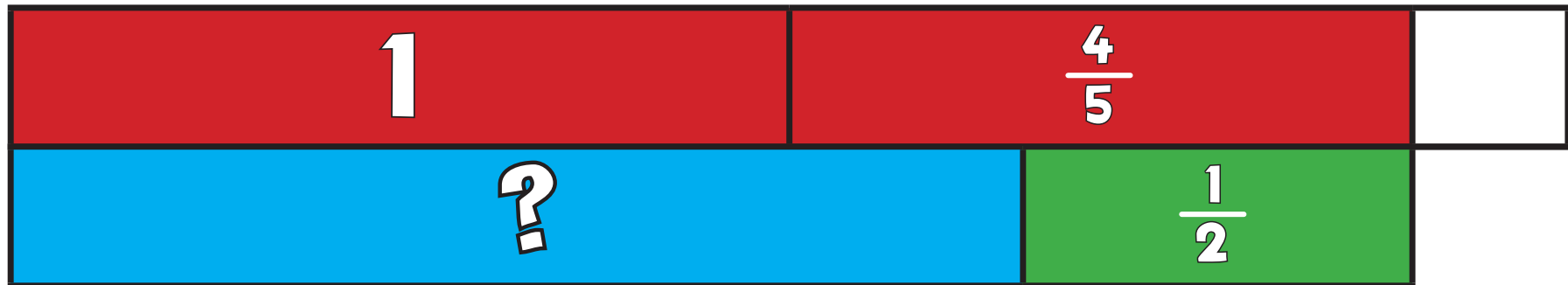
$$\frac{3}{4} - \frac{1}{3} = \frac{9}{12} - \frac{4}{12} = \frac{5}{12}$$



# FK: Calculating with Fractions

6-b

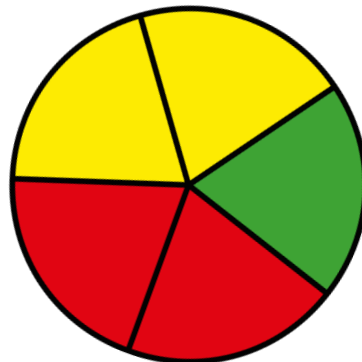
$$1\frac{4}{5} - \frac{1}{2} = 1\frac{8}{10} - \frac{5}{10} = 1\frac{3}{10}$$



# FK: Calculating with Fractions

5xa

$$\frac{2}{5} \times 4 = \frac{8}{5} = 1 \frac{3}{5}$$

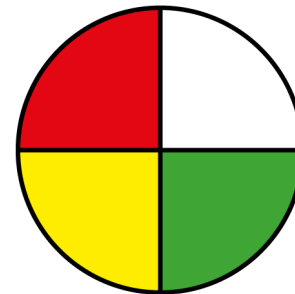
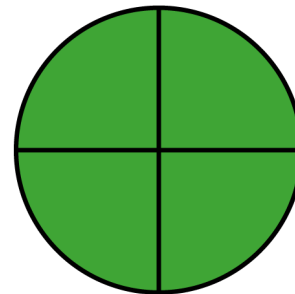
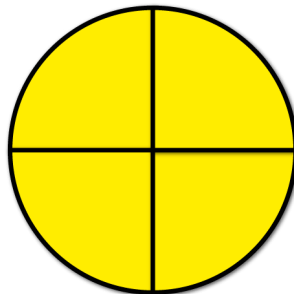
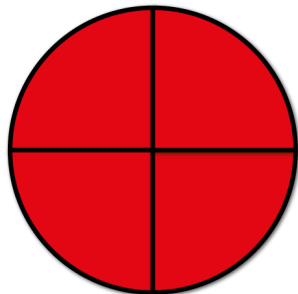
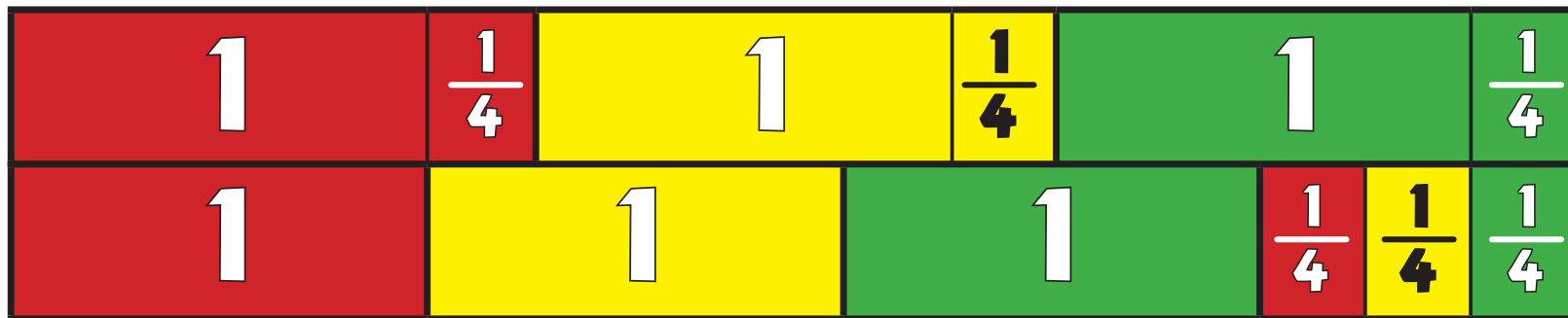




# FK: Calculating with Fractions

5xb

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



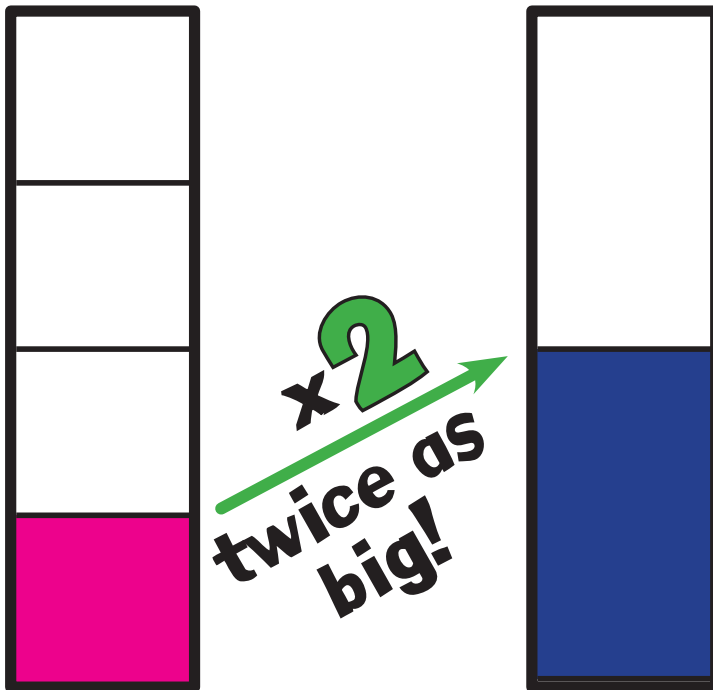
# FK: Calculating with Fractions

6xa

Scaling Model

$$\frac{1}{4} \times 2 = \frac{1}{2}$$

$$\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$$

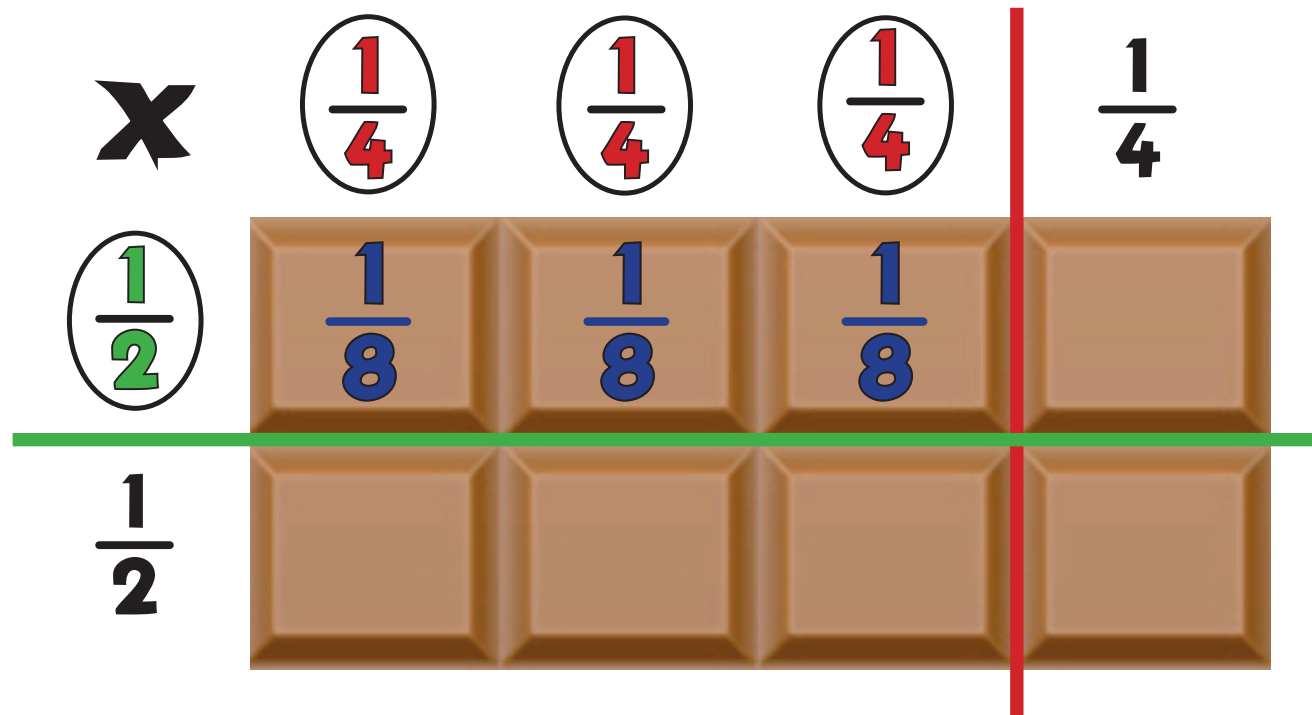


# FK: Calculating with Fractions

6xb

"If I had **three quarters** of a chocolate bar, and gave you **half** of what I had, how much of the whole bar would you get?  
Answer: **Three eighths.**"

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



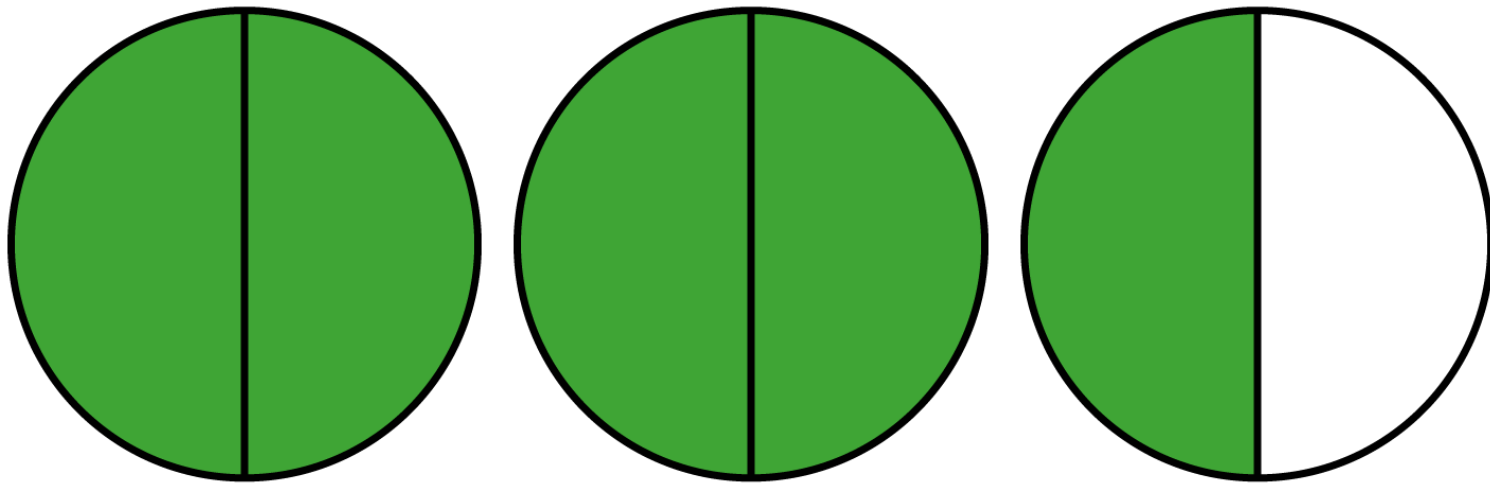
# FK: Calculating with Fractions

5 ÷ a

Grouping Model - Dividing by a Fraction

$$2\frac{1}{2} \div \frac{1}{2} = 5$$

“How many halves  
can I fit into a 2 and  
a half?  
Answer: 5.”



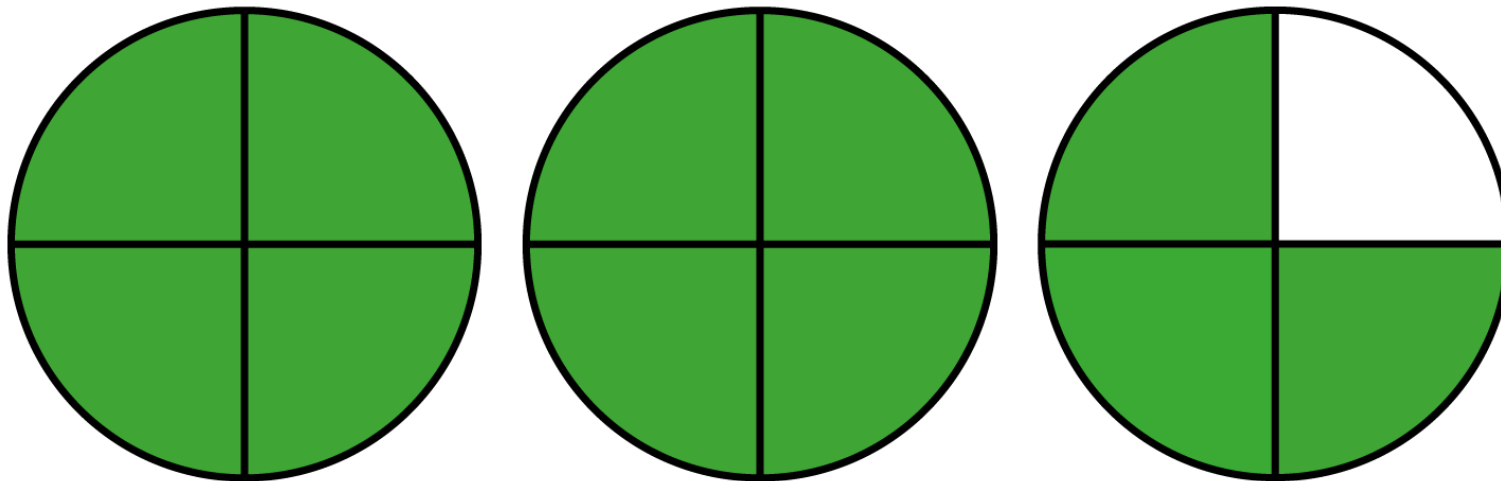
# FK: Calculating with Fractions

5÷b

Grouping Model - Dividing by a Fraction

$$2\frac{1}{4} \div \frac{1}{4} = 9$$

“How many **quarters**  
can I fit into a **2** and a  
**quarter**?  
Answer: **9**.”



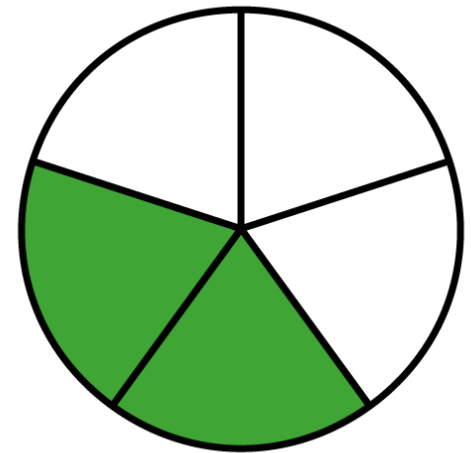
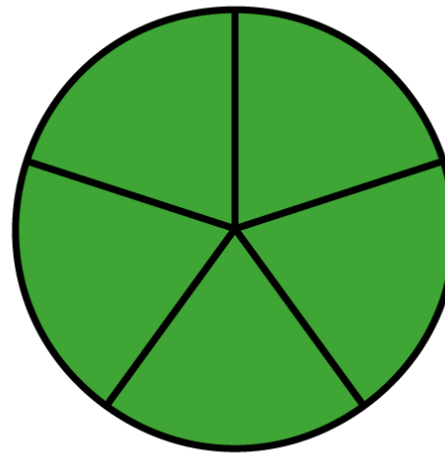
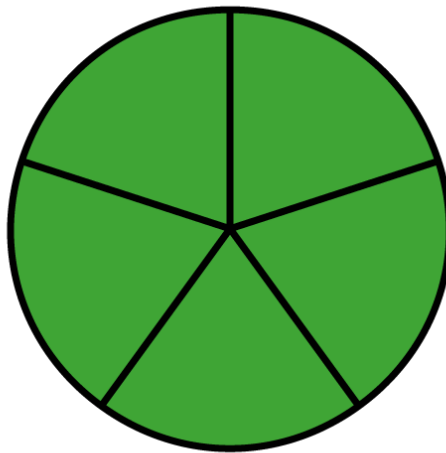
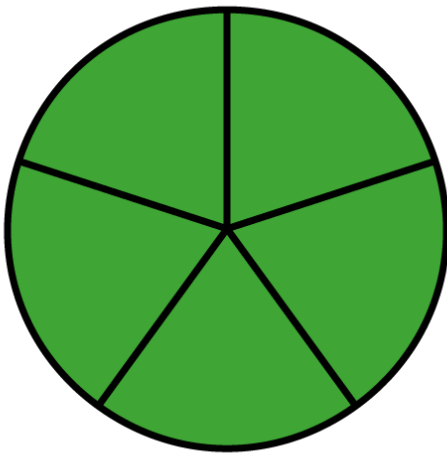
# FK: Calculating with Fractions

6 ÷ a

Grouping Model - Dividing by a Fraction

$$3\frac{2}{5} \div \frac{1}{5} = 17$$

“How many **fifths**  
can I fit into a **3**  
and **2 fifths**?  
Answer: **17.**”



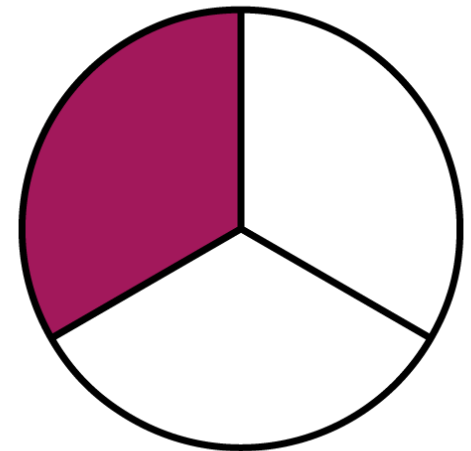
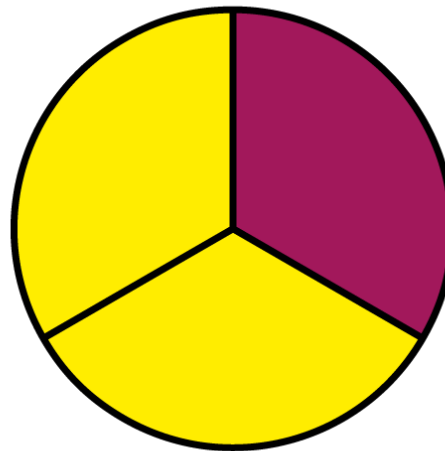
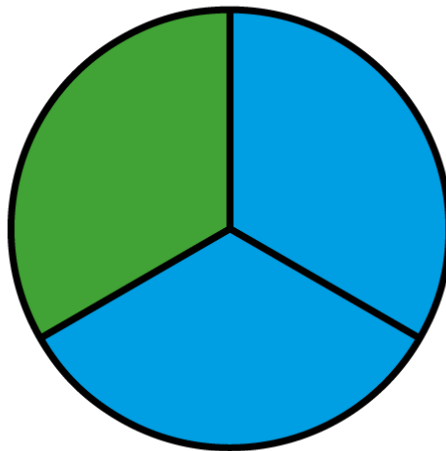
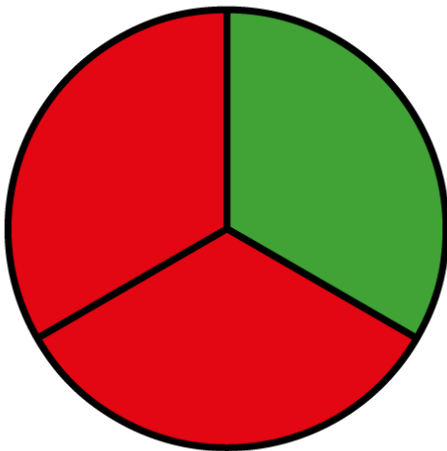
# FK: Calculating with Fractions

6 ÷ b

Grouping Model - Dividing by a Fraction

$$3\frac{1}{3} \div \frac{2}{3} = 5$$

"How many **two-thirds** can I fit into a **3 and a third**?  
Answer: **5**."



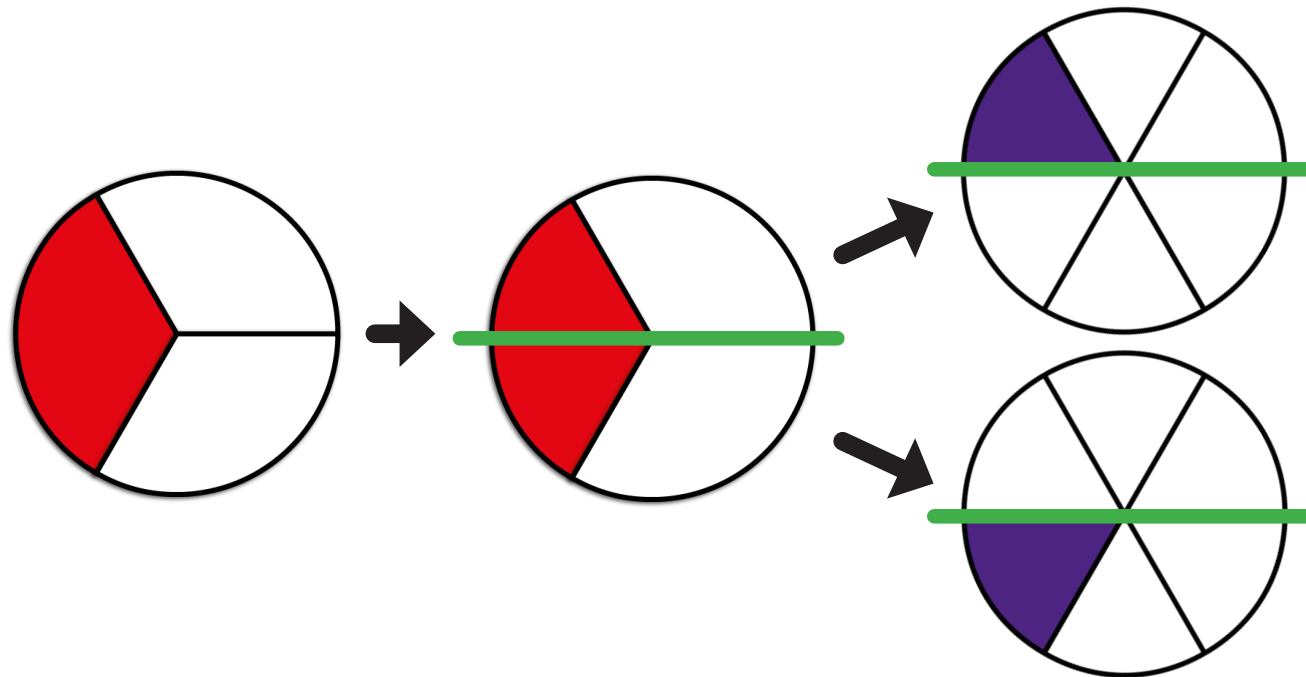
# FK: Calculating with Fractions

6÷c

Sharing Model - Dividing a fraction by a whole number

$$\frac{1}{3} \div 2 = \frac{1}{6}$$

"If I share a **third** into **2** equal amounts, how much in each group?" Answer: **A sixth**



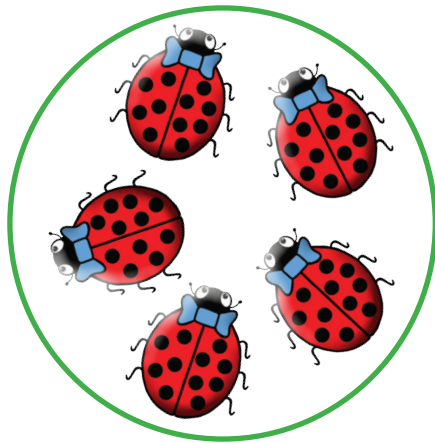
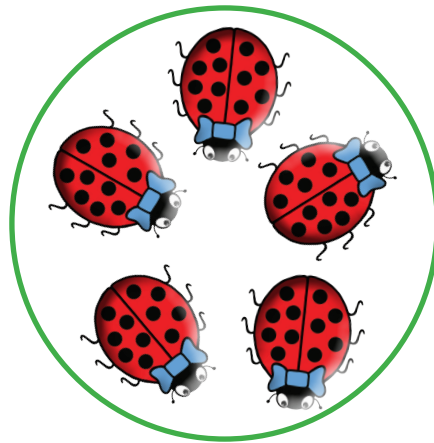
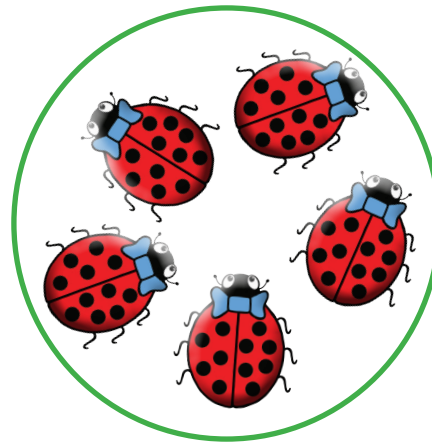
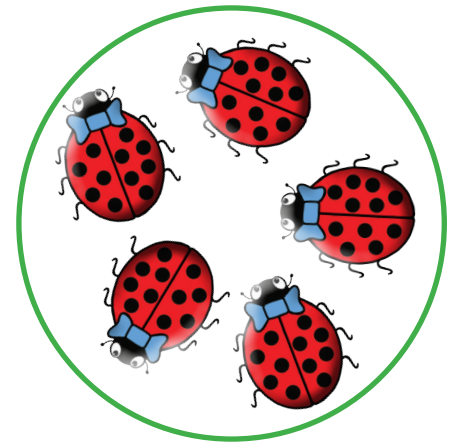


# FL: Division as a Fraction

3

Sharing Model

$$\frac{1}{4} \text{ of } 20 = 20 \div 4 = 5$$

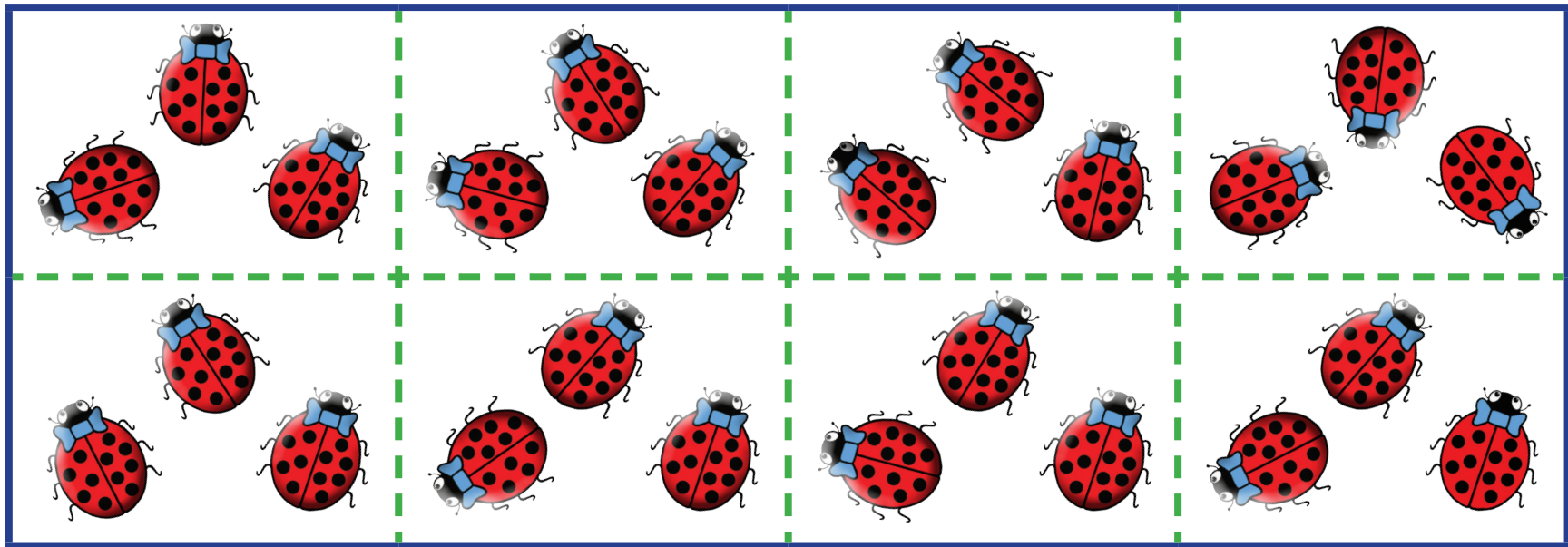

$$\frac{1}{4}$$

$$\frac{1}{4}$$

$$\frac{1}{4}$$

$$\frac{1}{4}$$

# FL: Division as a Fraction

4a

Sharing Model

$$\frac{1}{8} \text{ of } 24 = 24 \div 8 = 3$$



# FL: Division as a Fraction

4b

$$\frac{1}{4} \text{ of } 3 = 3 \div 4 = \frac{3}{4}$$

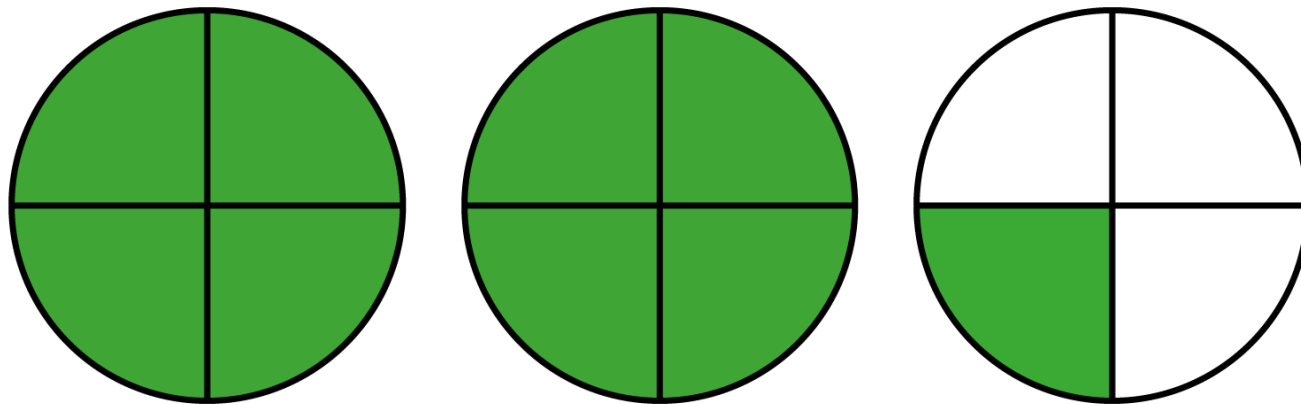


# FL: Division as a Fraction

5a

Mixed Number Model

$$\frac{1}{4} \text{ of } 9 = 9 \div 4 = \frac{9}{4} = 2\frac{1}{4}$$



(9 quarters = 2 and a quarter)

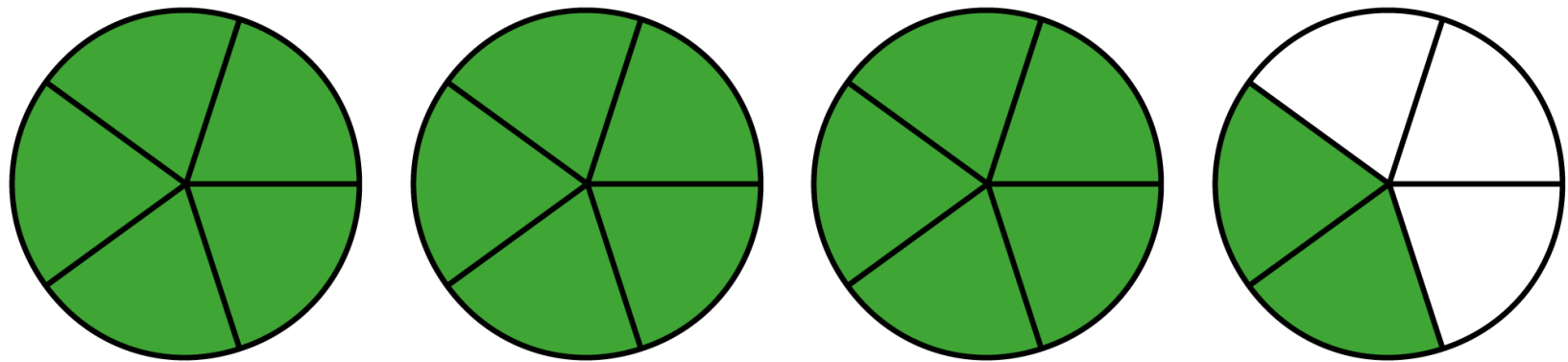
# FL: Division as a Fraction

5b

Mixed Number Model

$$\frac{1}{5} \text{ of } 17 = 17 \div 5 = \frac{17}{5} = 3 \frac{2}{5}$$

(3.4)



(17 fifths = 3 and 2 wholes)

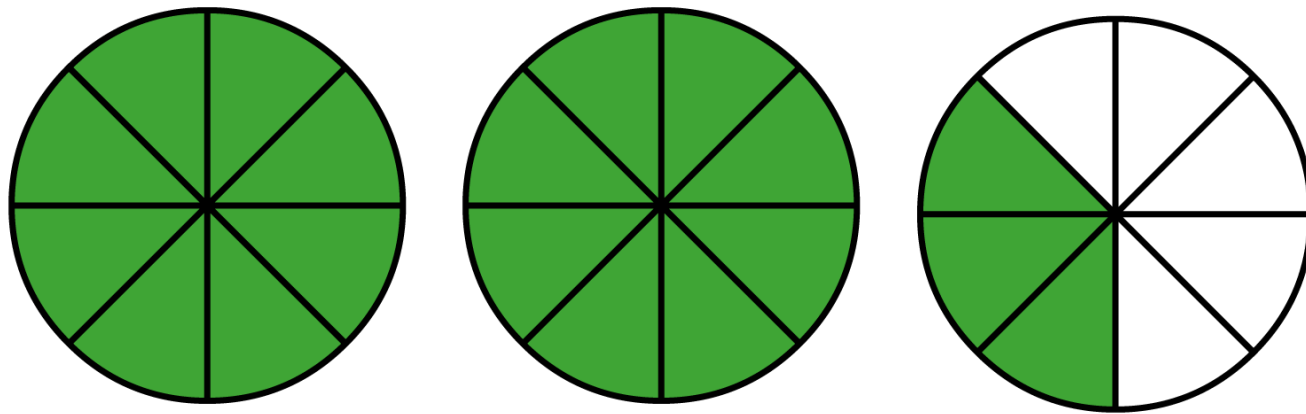
# FL: Division as a Fraction

6a

Mixed Number Model

$$\frac{1}{8} \text{ of } 19 = 19 \div 8 = \frac{19}{8} = 2\frac{3}{8}$$

(2.375)



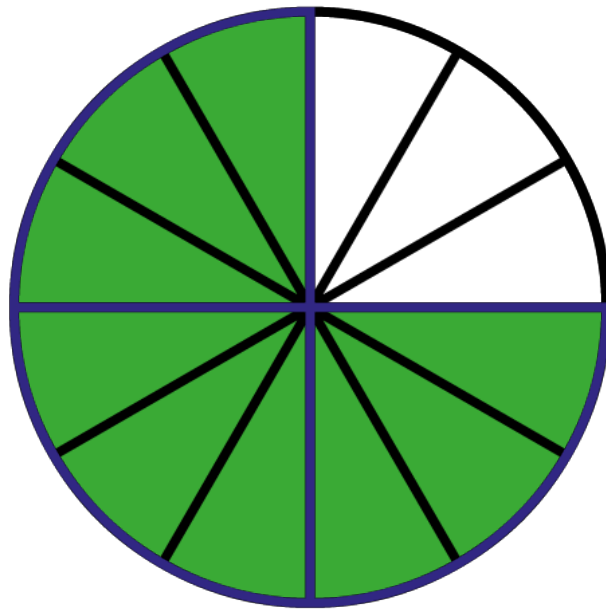
(19 eighths = 2 and 3 eighths)

# FL: Division as a Fraction

6b

Mixed Number Model

$$\frac{1}{12} \text{ of } 9 = 9 \div 12 = \frac{9}{12} = \frac{3}{4} \quad (0.75)$$



(9 twelfths =  
3 quarters)

# FM: Jump!

5

**x100**

**x10**

**÷10**

**÷100**

1000 100 10 1 ■  $\frac{1}{10}$   $\frac{1}{100}$

3400

340

34

3.4

0.34



# FM: Remainders = 5r2!

6

$$\begin{aligned} &= 5\frac{1}{2} \\ 22 \div 4 &= 5r2 \\ &= 5.5 \end{aligned}$$

$$\begin{aligned} &= 5\frac{2}{9} \\ 47 \div 9 &= 5r2 \\ &= 5.\dot{2} \end{aligned}$$

$$\begin{aligned} &= 5\frac{2}{8} \\ 42 \div 8 &= 5r2 \\ &= 5.25 \end{aligned}$$

$$\begin{aligned} &= 5\frac{2}{5} \\ 27 \div 5 &= 5r2 \\ &= 5.4 \end{aligned}$$

$$\begin{aligned} &= 5\frac{1}{5} \\ 52 \div 10 &= 5r2 \\ &= 5.2 \end{aligned}$$

$$\begin{aligned} &= 5\frac{2}{3} \\ 17 \div 3 &= 5r2 \\ &= 5.\dot{6} \end{aligned}$$

$$\begin{aligned} &= 5\frac{2}{6} = 5\frac{1}{3} \\ 32 \div 6 &= 5r2 \\ &= 5.\dot{3} \end{aligned}$$

$$\begin{aligned} &= 5\frac{2}{7} \\ 37 \div 7 &= 5r2 \\ &= 5.\overline{285714} \end{aligned}$$