

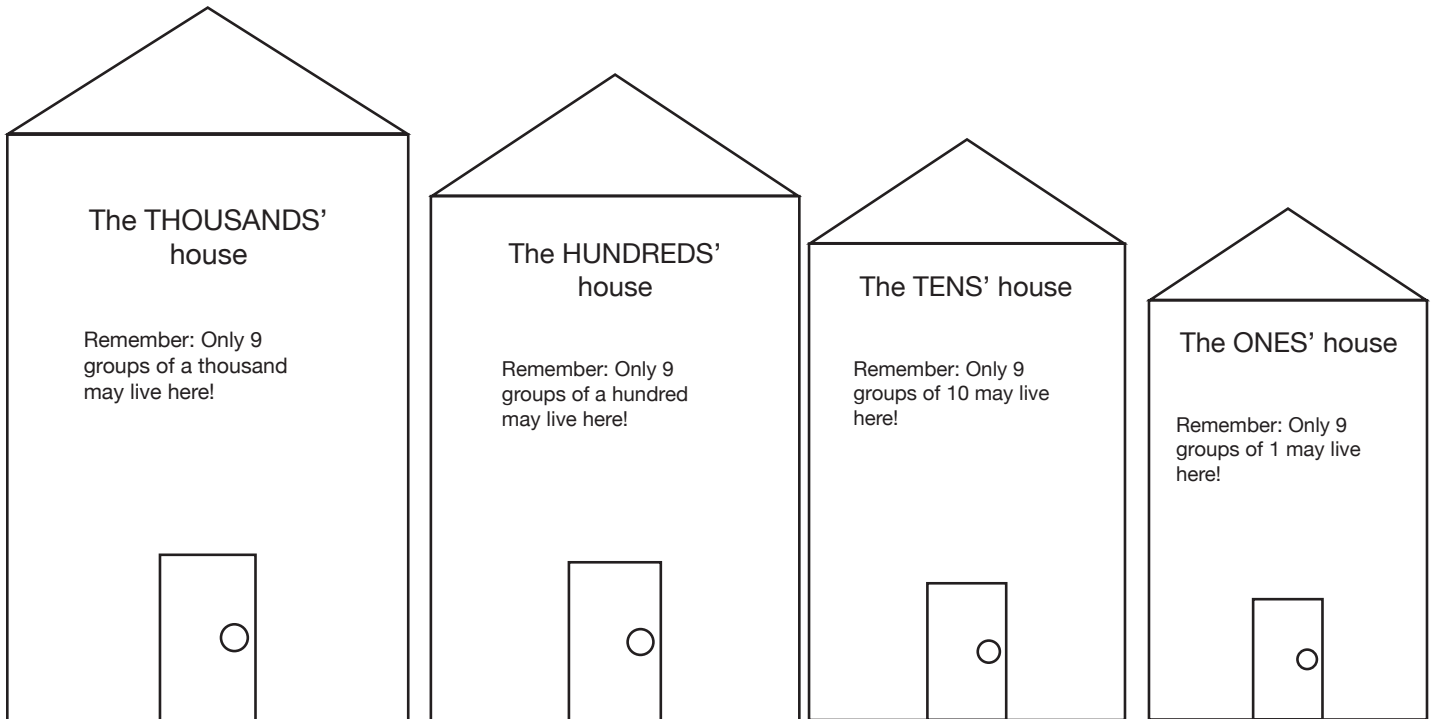
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Place Value Village

A helpful teaching tool for this series is the author's video on the Place Value Village:

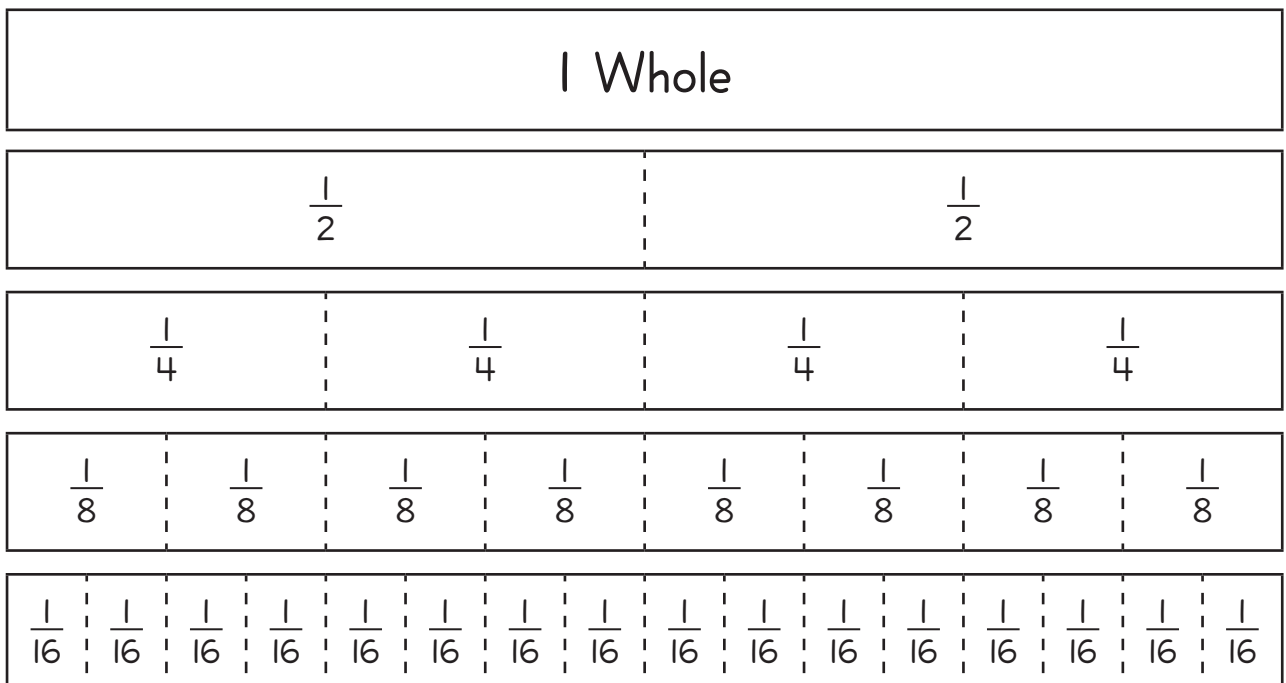
<https://www.youtube.com/watch?v=fuZ7Y3fDe7c>



Fraction Kit

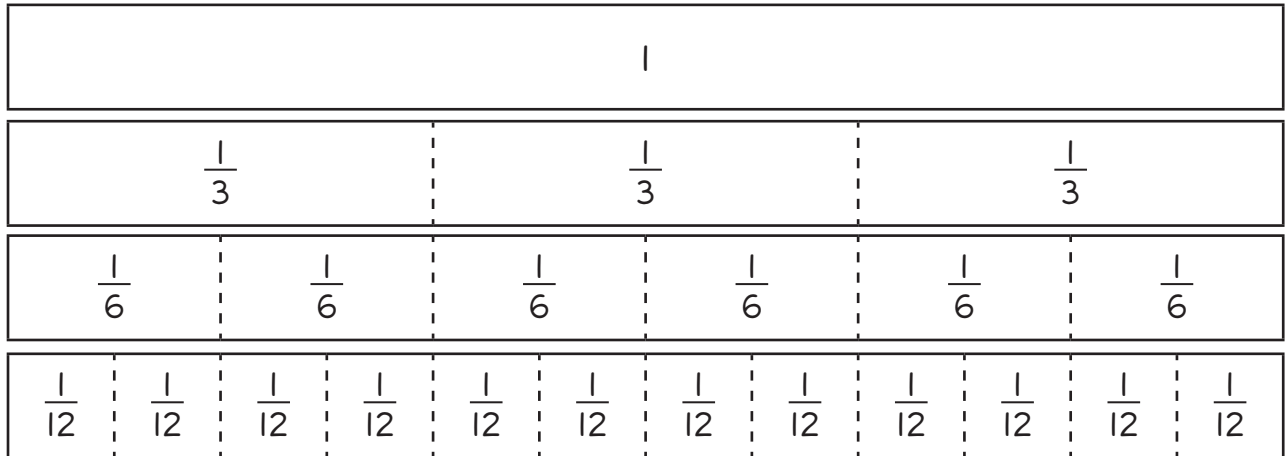
What you will need:

- 12 x 18 inch construction paper (5 colors) for your Fraction Kit, plus 3 more colors for each add-on kit.
 - scissors
 - 3 business sized envelopes
1. Cut 5 strips of different colored construction paper. Make sure they are all exactly the same length (18 in.) and width (3 in.).
 2. Label one of the strips “1 Whole”
 3. Fold the next strip exactly in half. Open it up and write $\frac{1}{2}$ on each section. Cut apart at the fold.
 4. Fold the next strip in half and half again to create 4 equal sections. Label them each $\frac{1}{4}$ and cut apart at the folds.
 5. Fold the next strip like the last strip. Fold again to form 8 equal sections. Label them each $\frac{1}{8}$ and cut apart at the folds.
 6. Fold the last strip in half and cut on the fold, creating two equal pieces. Take each section and follow the directions in #5. WRITE $\frac{1}{16}$ on each section.
 7. Store your fraction kit in an envelope. Label it “Fraction Kit #1.”



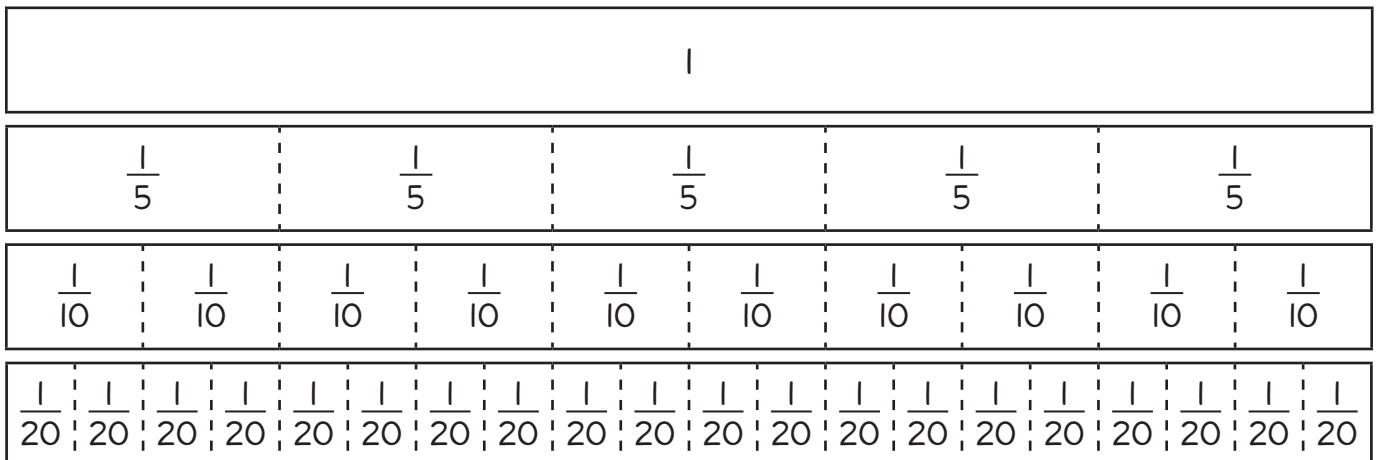
Add-on Fraction Kits A & B

1. You need 3 colors of 18 in. strips like you used to make the first part of your fraction kit.
2. 1st strip - fold at 6 inches and 12 inches. Label each section $\frac{1}{3}$. Cut apart at the folds.
3. 2nd strip - fold at 6 inches and 12 inches. Fold each in half again to create 6 equal sections. Label each $\frac{1}{6}$ and cut apart at the folds.
4. 3rd strip - repeat the above steps. Then fold each $\frac{1}{6}$ in half. Label each section $\frac{1}{12}$. Cut apart at the fold.
5. Store in an envelope labeled "Add-on Kit A" ($\frac{1}{3}, \frac{1}{6}, \frac{1}{12}$)



Follow the instructions for "Add-on Kit A" for "Add-on Kit B" (You need 3 more strips of different colored paper) (**Hint:** each section is $3\frac{3}{5}$ inches long for the $\frac{1}{5}$ strip)

Repeat above with the following set. Store in an envelope labeled "Add-on Kit B" ($\frac{1}{5}, \frac{1}{10}, \frac{1}{20}$)



Equivalent Fraction Cover Up Race

(A game to learn and reinforce equivalent fractions)

What you NEED TO PLAY:

- Fraction Spinner (template can be found after these directions)
- “Fraction Kit” and “Add-on Kits A & B” for each player. (This game takes at least 2 players and can use as many players you want, as long as everyone has their own kits.)

How to Play

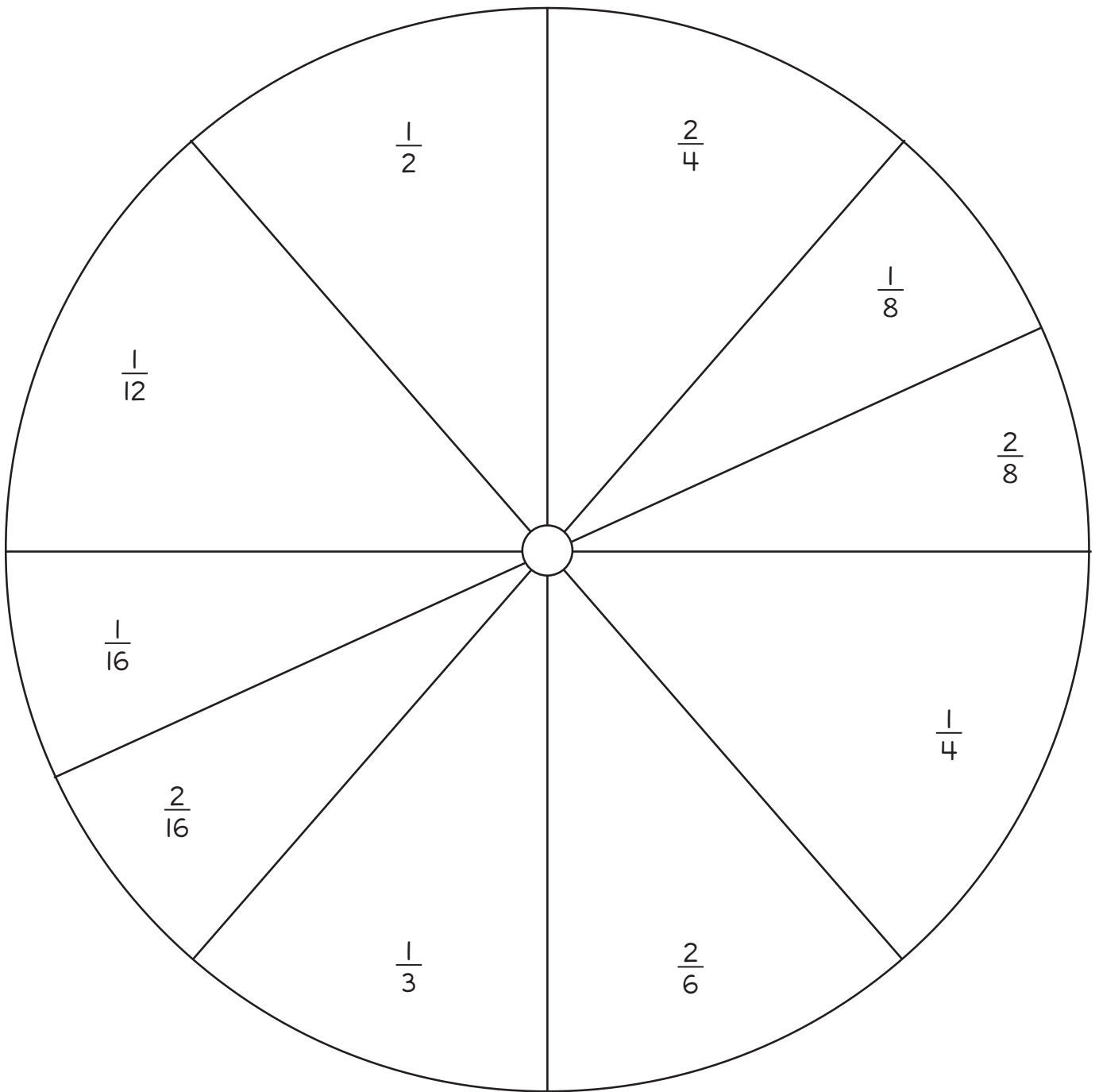
Step 1: Each player lays their “1 Whole” piece in front of them.

Step 2: The youngest player present spins the Fraction Spinner first and takes their turn.

Step 3: The players take the fraction piece from their kit and places it on top of their “1 Whole” piece.

How to Win

Be the first player to cover their “1 Whole” piece completely by having pieces that add up to 1 or more.



Cut out square spinner board along heavy black line; cut out arrow spinner and paste both to a piece of heavy card stock for sturdiness. Laminate the spinner board and arrow spinner. Connect the arrow spinner to the board with a brass connector. (Keep the arrow loose enough to spin easily.)



Break It Down Cards

<p>#1</p> <p>Step #1</p> $\begin{array}{r} 3 \\ 3 \overline{) 9} \end{array}$ <p>Look at the dividend (the number being divided). Think: $3 \times ? = 9$ we know $3 \times \underline{3} = 9$</p>	<p>Step #2</p> $\begin{array}{r} 3 \\ 3 \overline{) 9} \\ 9 \end{array}$ <p>We write 3 above the 9. We multiply 3×3 and write our answer below the dividend.</p>	<p>Step #3</p> $\begin{array}{r} 3 \\ 3 \overline{) 9} \\ -9 \\ \hline 0 \end{array}$ <p>Subtract 9 from 9</p>
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<p>#2</p> <p>Step #1</p> $\begin{array}{r} 4 \\ 9 \overline{) 36} \end{array}$ <p>Sometimes the first digit in the dividend is smaller than the divisor (the number you are dividing by). When this happens, look at both digits. $9 \times ? = 36$ We know $9 \times 4 = 36$</p>	<p>Step #2</p> $\begin{array}{r} 4 \\ 9 \overline{) 36} \\ 36 \end{array}$ <p>We write 4 above the 6 because we divided 36 by 9, not just 3. We multiply 9×4 and write 36 under the dividend.</p>	<p>Step #3</p> $\begin{array}{r} 4 \\ 9 \overline{) 36} \\ -36 \\ \hline 0 \end{array}$ <p>We finish by subtracting to find 0.</p>
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<p>#3</p> <p>Step #1</p> $\begin{array}{r} 23 \\ \times 33 \\ \hline 69 \end{array}$ <p>Multiply 23 by 3 ones.</p>	<p>Step #2</p> $\begin{array}{r} 23 \\ \times 33 \\ \hline 69 \\ 90 \end{array}$ <p>Multiply 23 by 3 tens, starting with the one's place. 3 ones \times 3 tens = 90</p>	<p>Step #3</p> $\begin{array}{r} 23 \\ \times 33 \\ \hline 69 \\ + 690 \\ \hline \end{array}$ <p>Next, multiply 2 tens \times 3 tens 600</p>	<p>Step #4</p> $\begin{array}{r} 23 \\ \times 33 \\ \hline 69 \\ + 690 \\ \hline 759 \end{array}$ <p>Finish by adding both partial products $69 + 690 = 759$</p>	<p>All Finished!</p>
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#4	Step #1	Step #2	Step #3	Step #4	Step #5
	$4 \overline{)96}$	$\begin{array}{r} 2 \times \\ 4 \overline{)96} \\ \underline{-8} \end{array}$	$\begin{array}{r} 2 - \\ 4 \overline{)96} \\ \underline{-8} \\ 1 \end{array}$	$\begin{array}{r} 2 \downarrow \\ 4 \overline{)96} \\ \underline{-8} \\ 16 \end{array}$	$\begin{array}{r} 24 \\ 4 \overline{)96} \\ \underline{-8} \\ 16 \\ \underline{-16} \\ 0 \end{array}$
	<p>Begin by looking at the first number of the dividend (the number being divided). Think: $4 \times ? =$ something close to 9 without going over.</p>	<p>We know $4 \times 2 = 8$. Write the 2 above the 9 and 8 below it.</p>	<p>Subtract 8 from 9.</p>	<p>Bring down the 6 next to the 1. Now divide $16 \div 4 = 4$.</p>	<p>4 goes above 6 $4 \times 4 = 16$ Write the 16 below the 16 and subtract.</p>

#5 **Checking division with multiplication**

Division problem:
$$4 \overline{)96} \begin{array}{r} \underline{-8} \\ 16 \\ \underline{-16} \\ 0 \end{array}$$

Check:
$$\begin{array}{r} 24 \\ \times 4 \\ \hline 96 \end{array}$$

- Multiply the answer by the divisor.
- Check the answer by the dividend. If they are the same, your division problem was done correctly.

#6	Step #1	Step #2	Step #3	Step #4
	$\begin{array}{r} 27 \\ \uparrow \uparrow \\ \times 35 \\ \hline 135 \end{array}$	$\begin{array}{r} 27 \\ \uparrow \uparrow \\ \times 35 \\ \hline 135 \\ 10 \end{array}$	$\begin{array}{r} 27 \\ \times 35 \\ \hline 135 \\ 810 \end{array}$	$\begin{array}{r} 27 \\ \times 35 \\ \hline 135 \\ + 810 \\ \hline 945 \end{array}$
	<p>Multiply 27×5</p> <p>Note: Card #6 is used in Lesson 20.</p>	<p>Multiply 27 by 3 tens, starting with the one's place. 7 ones \times 3 tens, 21 tens, or 210.</p>	<p>Next, multiply the ten's place. 2 tens \times 3 tens = 600 + the 2 hundreds we carried = 800</p>	<p>Lastly, add the partial products to find the complete product</p>

<p>#7 Step #1</p> $\begin{array}{r} 4 \\ 4 \overline{)17} \\ \underline{-16} \\ 1 \end{array}$ <p>First, we decide that we must divide 17 by 4. We know that $4 \times 4 = 16$. When we subtract, we see we have 1 left over.</p>	<p>Step #2</p> $\begin{array}{r} 4 \text{ r.1} \\ 4 \overline{)17} \\ \underline{-16} \\ 1 \end{array}$ <p>We write the remaining 1 like this.</p>	<p>To check:</p> $\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$ <p>Multiply the answer x the divisor.</p>	$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \\ + 1 \\ \hline 17 \end{array}$ <p>Next add the remainder. It should equal the dividend. ○</p>
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<p>#8 Step #1</p> $6 \overline{)354}$ <p>We know that 3 cannot be divided by 6, so look to the next number. Think: $6 \times ? =$ something close to 35 without going over.</p>	<p>Step #2</p> $\begin{array}{r} 5 \\ 6 \overline{)354} \\ \underline{-30} \end{array}$ <p>$6 \times 5 = 30$</p>	<p>Step #3</p> $\begin{array}{r} 5 \\ 6 \overline{)354} \\ \underline{-30} \\ 5 \end{array}$ <p>Subtract 30 from 35.</p>	<p>Step #4</p> $\begin{array}{r} 5 \\ 6 \overline{)354} \\ \underline{-30} \downarrow \\ 54 \end{array}$ <p>Bring down the 4 next to the 5. Now divide 54 by 6.</p>	<p>Step #5</p> $\begin{array}{r} 59 \\ 6 \overline{)354} \\ \underline{-30} \downarrow \\ 54 \\ \underline{-54} \\ 0 \end{array}$ <p>We know $6 \times 9 = 54$. Write 9 over 4 in the one's place. Write 54 under the other 54 and subtract. ○</p>
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#9

 $1\frac{1}{3}$

Step #1: Add the whole numbers.

Step #2: Add the fractional parts.

Step #3: Write them together.

+

=

 $2\frac{1}{3}$

Add the whole numbers first.

3

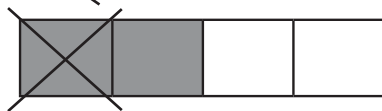


$$3\frac{2}{3} \quad \frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

Next, the fractional parts.



#10



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

Step #1: Subtract the whole numbers.

$$3 - 1 = 2$$

Step #2: Subtract the fractional parts.

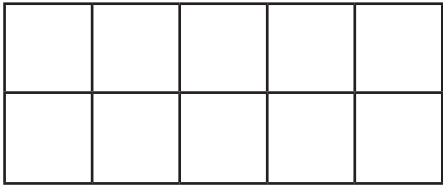
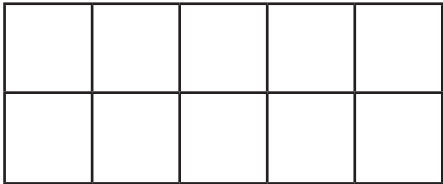
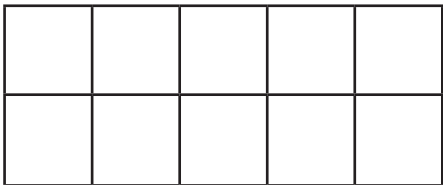
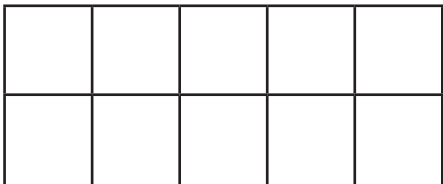
$$\frac{2}{4} - \frac{1}{4} = \frac{1}{4}$$

Step #3: Write them together.

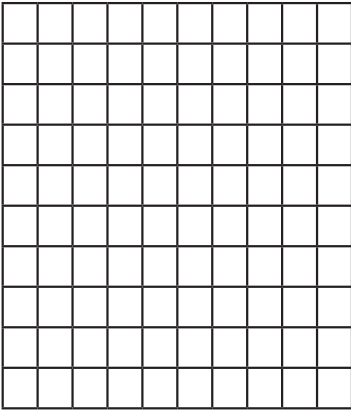
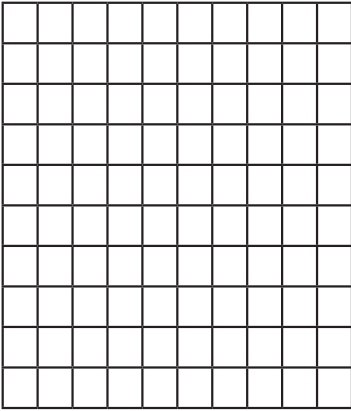
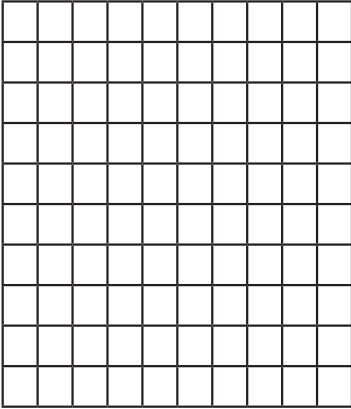
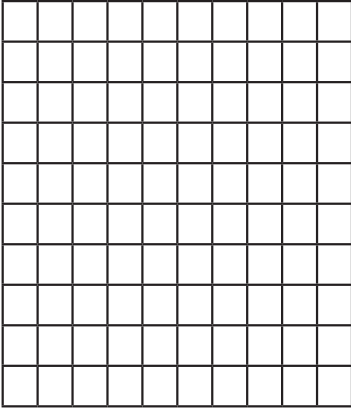
$$2\frac{1}{4}$$



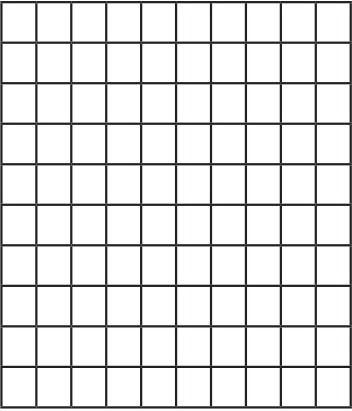
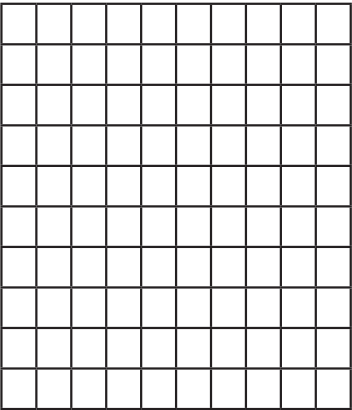
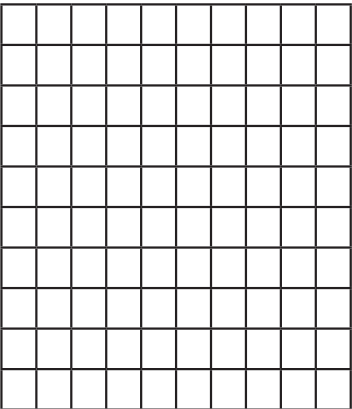
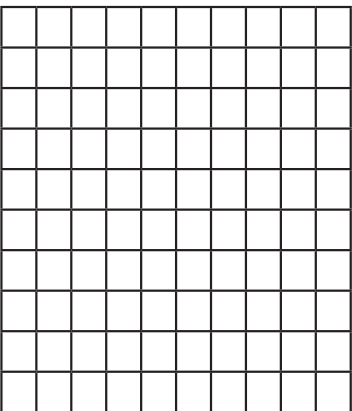
Fraction/Decimal (Chart #1)

What it looks like...	Fractional	Decimal
		
		
		
		

Fraction/Decimal (Chart #2)

What it looks like...	Fractional	Decimal
		
		
		
		

Fraction/Decimal/Percents (Chart #3)

What it looks like...	Fractional	Decimal	Percent
			
			
			
			

English: Measurements Chart

Length
12 inches = 1 foot
3 feet = 1 yard
5,280 feet = 1 mile
1,760 yards = 1 mile

Volume
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon
8 quarts = 1 peck
4 pecks = 1 bushel

Time
365 days = 1 year
366 days = 1 leap year
24 hours = 1 day
60 minutes = 1 hour
60 seconds = 1 minute

Items
12 items = 1 dozen

Weight
16 ounces = 1 pound
2,000 pounds = 1 ton

Metric: Measurements Chart

Prefix	Meaning	Length	Mass	Capacity
kilo-	thousand (1,000)	<u>kilometer</u>	<u>kilogram</u>	<u>kiloliter</u>
hecto-	hundred (100)	<u>hectometer</u>	<u>hectogram</u>	<u>hectoliter</u>
deka-	ten (10)	<u>dekameter</u>	<u>dekagram</u>	<u>dekaliter</u>
base unit	ones (1)	meter	gram	liter
deci-	tenths (0.1)	<u>decimeter</u>	<u>decigram</u>	<u>deciliter</u>
centi-	hundreds (0.01)	<u>centimeter</u>	<u>centigram</u>	<u>centiliter</u>
milli-	thousands (0.001)	<u>millimeter</u>	<u>milligram</u>	<u>milliliter</u>