Math Foundations

Activities

THE learning STUDIO

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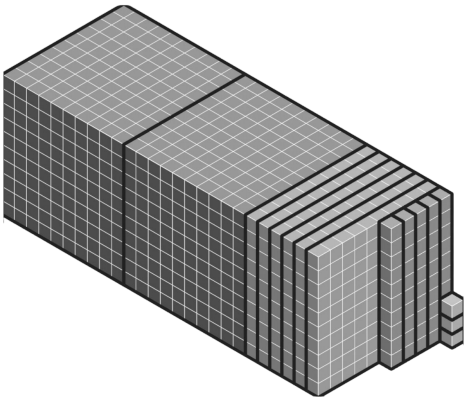
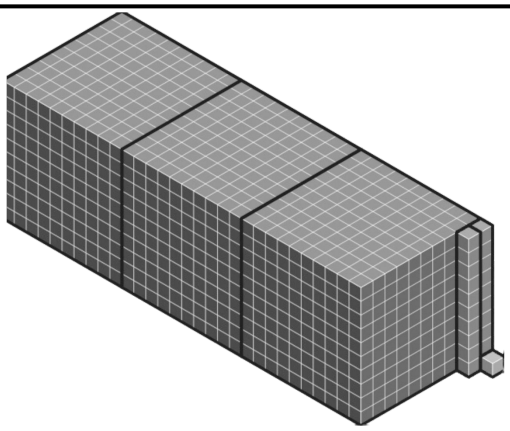
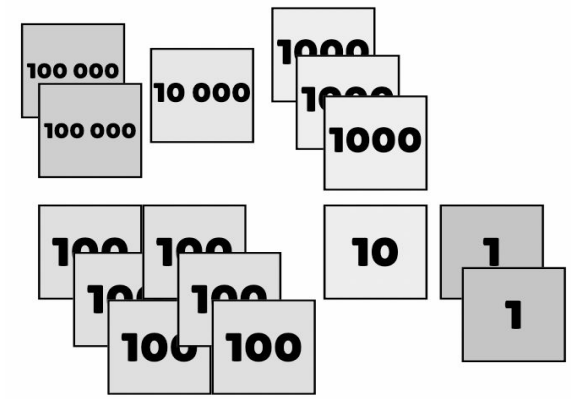
Place Value: Representing Numbers

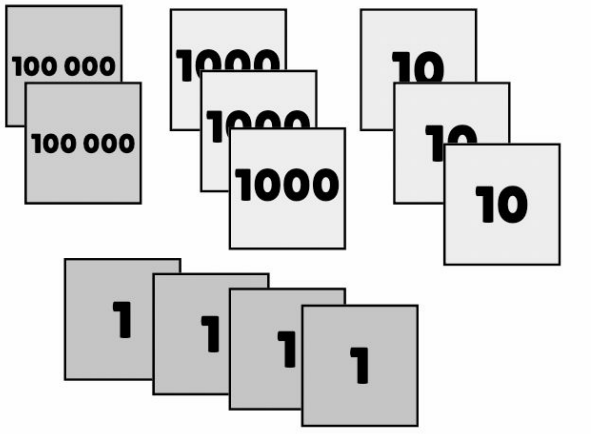
Place Value: Representing Numbers

Write the number that is represented by each set of base ten blocks or number tiles.









Practice building these numbers with your number tiles.

3672	5307	17 439	37 042	270 332

Place Value: Understanding Value and Place Value

Place Value: Understanding Value and Place Value

Write the VALUE and the PLACE VALUE name of each underlined digit.

Number	Value	Place Value Name
1<u>5</u> 904		
<u>6</u>08 745		
40 <u>7</u>80		
356 0<u>5</u>0		

Write each number in expanded or standard form.

Standard Form	Expanded Form
54 678	
	400 000 + 30 000 + 6000 + 700 + 90 + 2
704 815	
	500 000 + 7000 + 400 + 6

For each number, say how many 10s, 100s and 1000s are in that number.

Number	How many 10s?	How many 100s?	How many 1000s?
4 5678			
120 693			
673 002			

For each number, say what would be 10 more, 100 more and 1000 more.

Number	10 more?	100 more?	1000 more?
30 648			
225 973			
349 309			

Place Value: Reading and Writing Big Numbers

Place Value: Reading and Writing Big Numbers

Practice saying these numbers aloud and then write them in words. Use the number words page in your toolkit to help you!

12 845
563 814
340 015

Write these numbers in standard form (just regular numbers). Use the place value chart in your toolkit to help you!!

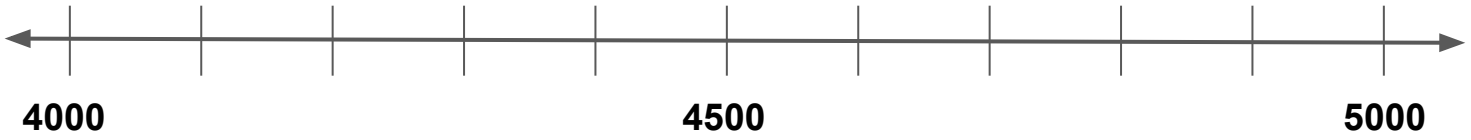
"Four hundred sixty three thousand, five hundred ten"
"Eighteen thousand forty five"
"Seven hundred ninety thousand, two hundred eleven"

Place Value: Rounding Numbers

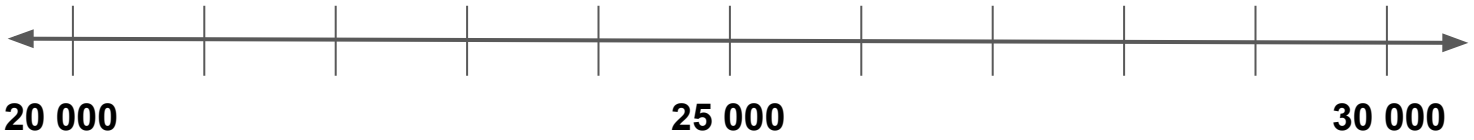
Place Value: Rounding Numbers

Place the following numbers on their number line (as accurately as possible).

4550 **4090** **4820** **4410** **4680**



21 000 **25 500** **28 100** **23 900** **26 500**



Round these numbers to the nearest 10, 100, 1000 or 10 000:

6792

Nearest ten=

Nearest hundred=

Nearest thousand=

42 850

Nearest hundred=

Nearest thousand=

Nearest ten

Place Value: Comparing and Ordering Numbers

Place Value: Comparing and Ordering Numbers

Compare each pair of numbers using a <, > or = symbol.

6795 ☐ 6759

62 022 ☐ 62 200

4804 ☐ 4488

310 031 ☐ 311 330

17 110 ☐ 17 170

290 900 ☐ 290 099

Put each list of numbers in order from least to greatest.

5606 6550 5566 6605 5660

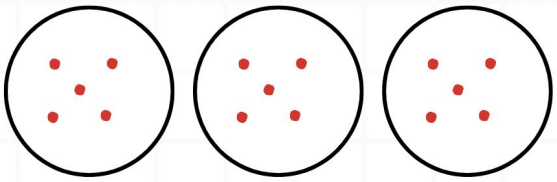
12 201 12 022 11 222 12 211 11 200

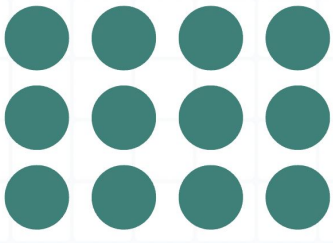
477 747 447 477 744 474 447 474 774 447

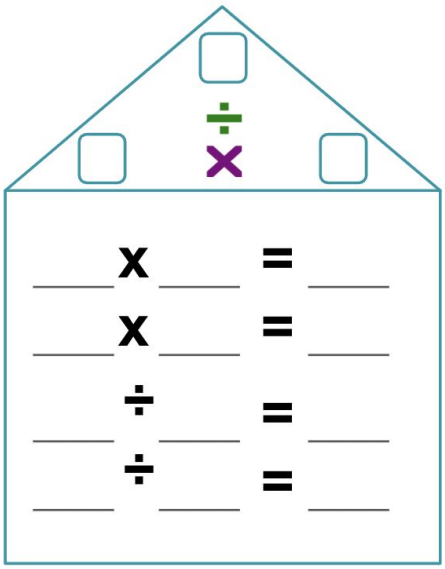
Math Facts: Connecting Multiplication & Division

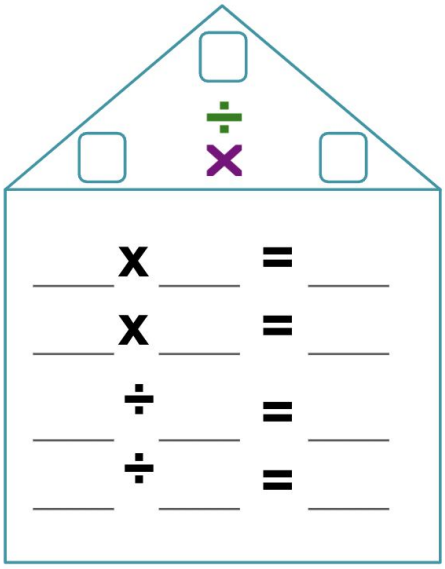
Math Facts: Connecting Multiplication & Division

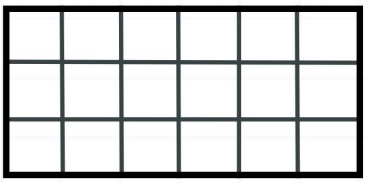
Write a fact family for each diagram:

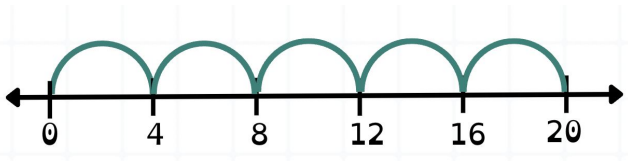


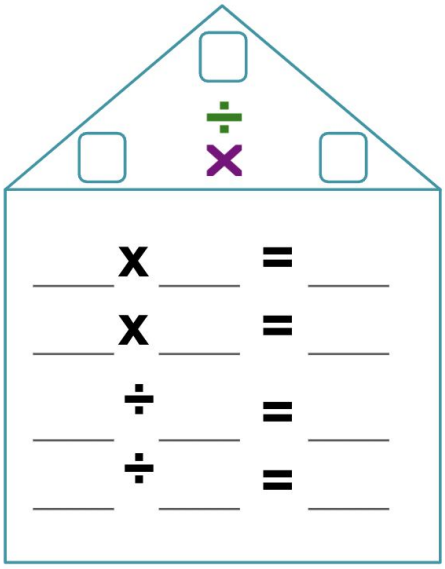


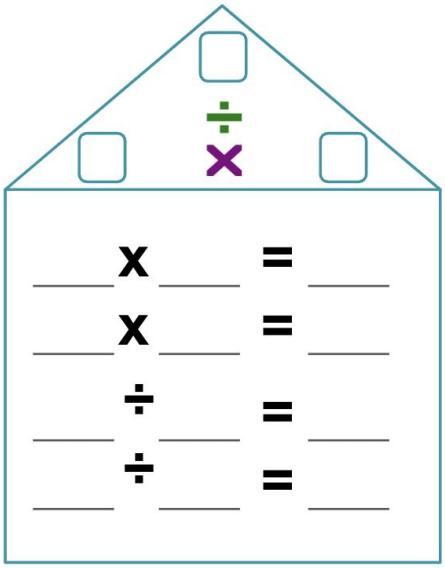












Math Facts: Multiplicative Relationships: x2, x4, x8

Math Facts: Multiplicative Relationships: x2, x4, x8

How are x2, x4 and x8 related? Use pictures, numbers or words!

Fill in the table.

	x2	x4	x8
10			
11			
20			
7			
25			
8			

Math Facts: Multiplicative Relationships: x1, x10, x5

Math Facts: Multiplicative Relationships: x1, x10, x5

How are x1 and x10 related?
Use pictures, numbers or words!

How are x10 and x5 related?
Use pictures, numbers or words!

Fill in the table.

	x1	x10	x5
10			
11			
20			
7			
24			
6			

Math Facts: Multiplicative Relationships: x3, x6, x12

Math Facts: Multiplicative Relationships: x3, x6, x12

How are x3, x6 and x12 related? Use pictures, numbers or words!

Fill in the table.

	x3	x6	x12
10			
11			
20			
7			
15			
5			

Math Facts: Multiplicative Relationships: x9 and x11

Math Facts: Multiplicative Relationships: x9 and x11

How are x10 and x9 related?
Use pictures, numbers or words!

How are x10 and x11 related?
Use pictures, numbers or words!

Fill in the table.

	x10	x9	x11
3			
8			
12			
7			
15			
6			

Math Facts: Multiplicative Relationships: Square Numbers

Math Facts: Multiplicative Relationships: Square Numbers

What is a "square number"? Use pictures, numbers and words to explain.

Fill in the table.

1 x 1 =	**7 x 7 =**
2 x 2 =	**8 x 8 =**
3 x 3 =	**9 x 9 =**
4 x 4 =	**10 x 10 =**
5 x 5 =	**11 x 11 =**
6 x 6 =	**12 x 12 =**

Math Facts: Multiplicative Relationships: x7

Math Facts: Multiplicative Relationships: x7

What are some strategies you can use to help you multiply numbers by 7? Use pictures, numbers or words!

Fill in the table.

	x7	What was your strategy?
10		
5		
20		
7		
8		
6		

Math Facts: Strategies for Division Facts

Math Facts: Strategies for Division Facts

How can we use multiplication to help with division? Give an example.

How is division like sharing? Use pictures, numbers and words to explain.

How is division like repeated subtraction? Use pictures, numbers and words to explain.

Fill in the table.

	What was your strategy?
48 ÷ 4 =	
35 ÷ 5 =	
56 ÷ 8 =	
49 ÷ 7 =	
18 ÷ 3 =	
16 ÷ 4 =	

Mental Math: Multiplication and Division with Trailing Zeros

Mental Math: Multiplication and Division with Trailing Zeros

Find the following products and explain the patterns that you see.

3 x 4 =	Patterns:
30 x 4 =	
30 x 40 =	
300 x 400 =	

Find the following products:

300 x 500 =

6000 x 400 =

700 x 5000 =

20 000 x 120 =

5000 x 800 =

2500 x 40 =

Find the following quotients and explain the patterns that you see.

25 ÷ 5 =	Patterns:
250 ÷ 50 =	
2500 ÷ 500 =	
2500 ÷ 50 =	

Find the following quotients:

27 000 ÷ 300 =

4500 ÷ 500 =

360 000 ÷ 600 =

20 000 ÷ 40 =

4800 ÷ 800 =

150 000 ÷ 30 =

Mental Math: Partners to 100 and 1000

Mental Math: Partners to 100 and 1000

Find the missing partners to 100. Remember to use your Toolkit to help you!

44 + ____ = 100

____ + 81 = 100

36 + ____ = 100

____ + 65 = 100

100 - ____ = 14

100 - 77 = ____

100 - ____ = 28

100 - 53 = ____

Find the missing partners to 1000. Remember to use your Toolkit to help you!

414 + ____ = 1000

____ + 781 = 1000

276 + ____ = 1000

____ + 561 = 1000

1000 - ____ = 134

1000 - 737 = ____

1000 - ____ = 486

1000 - 253 = ____

Mental Math: Compatible Numbers

Mental Math: Compatible Numbers

Explain what the Commutative Property is and give some examples.

Use different colours to show the compatible numbers. Then, use the commutative property to add or multiply these numbers:

45 + 77 + 23 + 35 =

19 + 43 + 37 + 88 + 71 + 12 =

38 + 66 + 52 + 24 =

125 + 340 + 37 + 83 + 75 + 60 =

4 x 35 x 25 x 2 =

5 x 25 x 4 x 2 x 4 x 15 =

12 x 4 x 5 x 15 =

25 x 45 x 4 x 2 x 5 x 6 =

Mental Math: Using Compensation to Add and Subtract

Mental Math: Using Compensation to Add and Subtract

Rewrite each question using compensation to create a more friendly addition question that will lead to the same answer.

Question	Rewrite the question	Answer
49 + 34		
61 + 89		
498 + 346		
273 + 197		
1998 + 3273		
5087 + 3997		

Rewrite each question using compensation to create a more friendly subtraction question that will lead to the same answer.

Question	Rewrite the question	Answer
72 - 49		
84 - 58		
374 - 199		
235 - 97		
5745 - 2998		
7032 - 1995		

Mental Math: Half-Double Strategy for Multiplication

Mental Math: Half-Double Strategy for Multiplication

Explain how the half-double strategy for multiplication works.
Give an example or draw a picture to show it.

Use the half-double strategy to solve these multiplication questions:

48 x 5 =

150 x 12 =

25 x 16 =

250 x 18 =

50 x 44 =

26 x 500 =

24 x 15 =

125 x 8 =

35 x 22 =

16 x 350 =

Mental Math: Estimating

Mental Math: Estimating

Write a number sentence to represent the situation and then estimate the answer using friendly numbers.

Tyson had $245 in his bank account. For his birthday, he receives $96 and deposits it into his bank account. Approximately how much money does Tyson have in his account now?

Ariana collects stickers and keeps them in an album. Each page has about 27 stickers on it and there are 52 pages in the album. Approximately how many stickers does she have in the album?

Estimate the following sums, differences, products and quotients:

4321 + 3897 → _____ + _____ = _____

5878 - 1999 → _____ - _____ = _____

404 x 29 → _____ x _____ = _____

3987 ÷ 2 → _____ ÷ _____ = _____

61 312 + 4976 → _____ + _____ = _____

21 303 x 9 → _____ x _____ = _____

Multi-Digit Addition & Subtraction: Expand and Add

Multi-Digit Addition & Subtraction: Expand and Add

Use the "expand and add" strategy to find the following sums:

453 + 265 =

724 + 458 =

2951 + 6295 =

6174 + 1026 =

Multi-Digit Addition & Subtraction: Adding Piece by Piece

Multi-Digit Addition & Subtraction: Adding Piece by Piece

Add piece by piece on a number line to find each sum.

575 + 341 = _____

7128 + 5306 = _____

Add these number piece by piece to find each sum.

345 + 566 = _____	**2964 + 1325 = _____**
4567+ 3413 = _____	**23 089 + 44 025 = _____**

Multi-Digit Addition & Subtraction: Adding by Place Value

Multi-Digit Addition & Subtraction: Adding by Place Value

Add each set of numbers together.

472 + 325	564 + 229
3754 + 852	1558 + 2345
52 483 + 2 175	34 126 + 26 485

Multi-Digit Addition & Subtraction: Expand and Subtract

Multi-Digit Addition & Subtraction: Expand and Subtract

Use the "expand and subtract" strategy to find the following differences:

458 - 235 =

7824
- 403

4951 - 2732 =

6422
- 2053

Multi-Digit Addition & Subtraction: Subtracting Piece by Piece

Multi-Digit Addition & Subtraction: Subtracting Piece by Piece

Subtract these numbers piece by piece on a number line to find each difference.

575 - 341 = _____

7128 - 5306 = _____

Subtract these number piece by piece to find each difference.

845 - 531 = _____	**2964 - 1058 = _____**
4567- 2539 = _____	**44 345 - 10 216 = _____**

Multi-Digit Addition & Subtraction: Subtract by Counting Up

Multi-Digit Addition & Subtraction: Subtract by Counting Up

Subtract by counting up to find the difference.

575 - 341 = _____

7128 - 5386 = _____

3154 - 675 = _____

11 783 - 980 = _____

73 128 - 52 400 = _____

Multi-Digit Addition & Subtraction: Subtract by Place Value

Multi-Digit Addition & Subtraction: Subtract by Place Value

Find each difference using one of the stacking methods.

472 - 325	564 - 229
3754 - 852	5168 - 2537
52 483 - 2 675	38 126 - 26 485

Multi-Digit Multiplication & Division: Box Method for Multiplying

Multi-Digit Multiplication & Division: Box Method for Multiplying

Use the box method to find the following products:

5 x 38 =

4 x 216 =

26 x 34 =

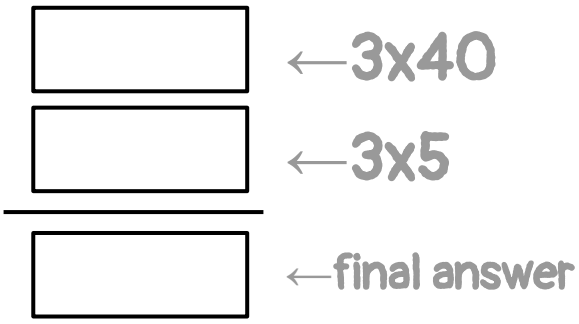
43 x 562 =

Multi-Digit Multiplication & Division: Partial Products

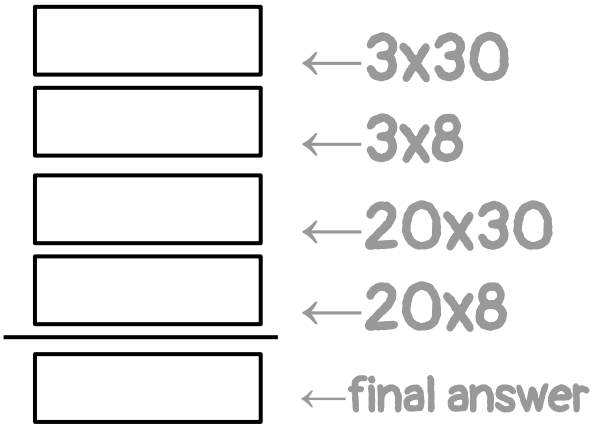
Multi-Digit Multiplication & Division: Partial Products

Use the partial products to multiply these numbers:

45
x 3



38
x 23



281
x 4

36
x 5

52
x 38

86
x 43

Multi-Digit Multiplication & Division:

Division - Sharing or Counting Groups

Multi-Digit Multiplication & Division:
Division - Sharing or Counting Groups

Draw a visual representation of the number stories. Then, write a division sentence for each story and find the answers.

Hunter and his 4 friends went apple picking. All together, they picked 120 apples. Before going home, they split the apples evenly among all five of them. How many apples did each get?
Garrett has saved up $150 and wants to buy some video games with his money. Each game costs $30. How many games can he buy?

Find each quotient. Use the space to work out your answers.

144 ÷ 2 =	75 ÷ 15 =
315 ÷ 3 =	250 ÷ 25 =

Multi-Digit Multiplication & Division: Partial Quotients 1

Multi-Digit Multiplication & Division: Partial Quotients 1

Use partial quotients to solve these divisions:

366 ÷ 6 =	816 ÷ 8 =
357 ÷ 7 =	2412 ÷ 12 =
525 ÷ 5 =	963 ÷ 9 =

Multi-Digit Multiplication & Division: Remainders

Multi-Digit Multiplication & Division: Remainders

The Smith family has 75 seeds to plant. They plant them in 4 equal rows and give the rest to their neighbour. How many seeds will be planted in each row? How many seeds will they give to their neighbour?	
$62 \div 3 =$	$80 \div 12 =$
$125 \div 2 =$	$415 \div 4 =$

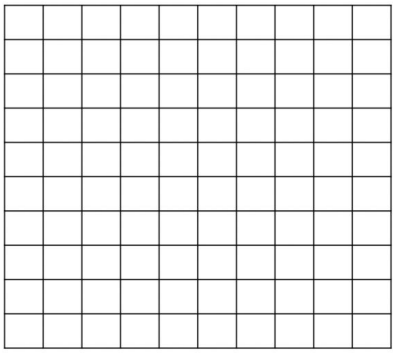
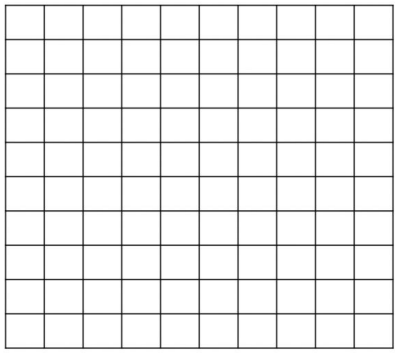
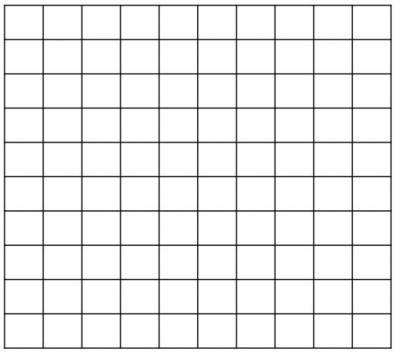
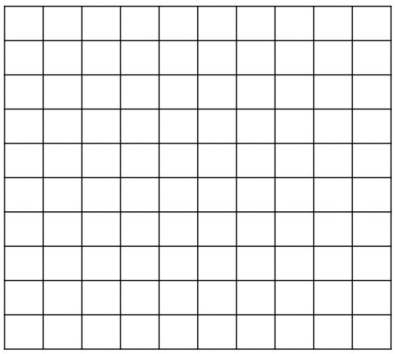
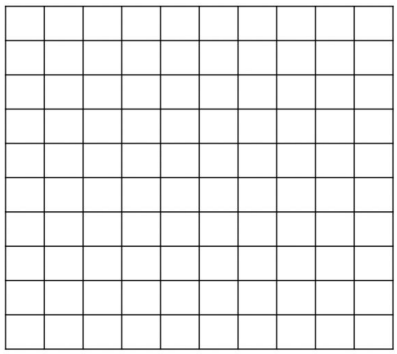
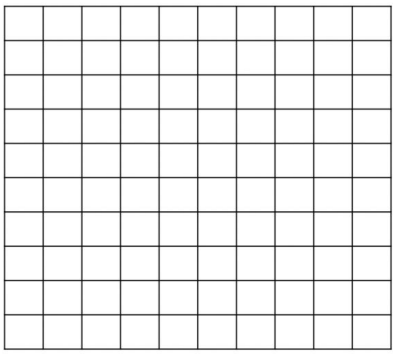
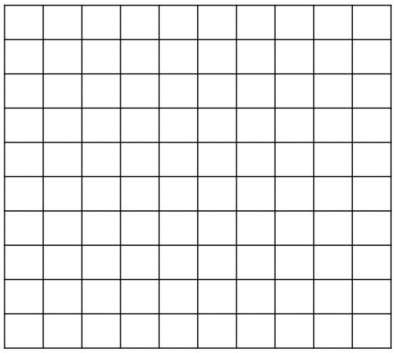
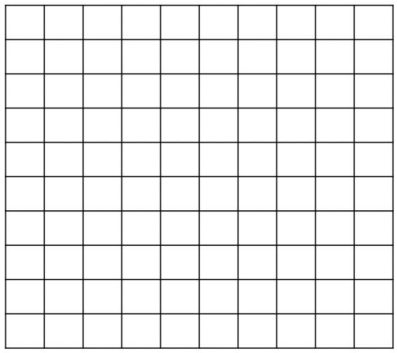
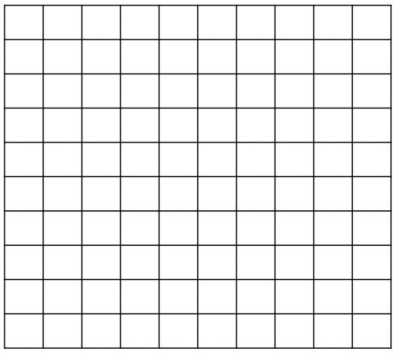
Multi-Digit Multiplication & Division: Partial Quotients 2

Multi-Digit Multiplication & Division: Partial Quotients 2

Use partial quotients to solve these divisions:

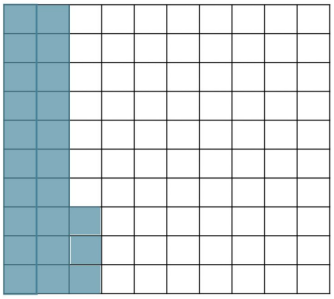
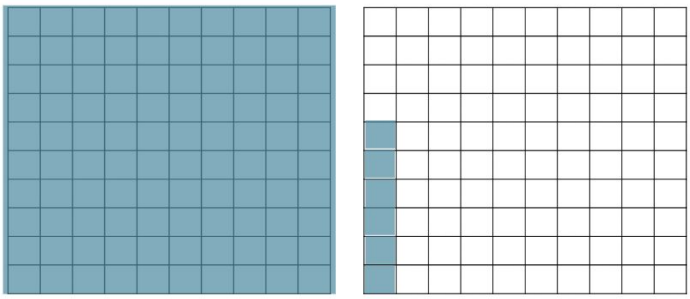
786 ÷ 6 =	496 ÷ 8 =
575 ÷ 3 =	1850 ÷ 12 =

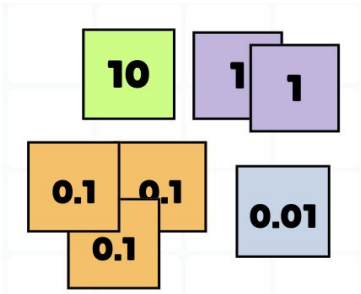
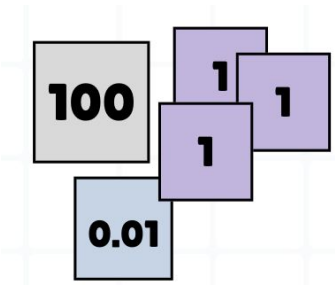
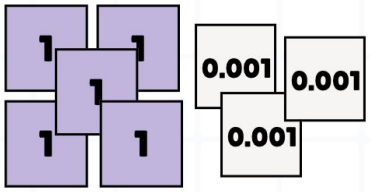
Place Value with Decimals: Representing Decimal Numbers

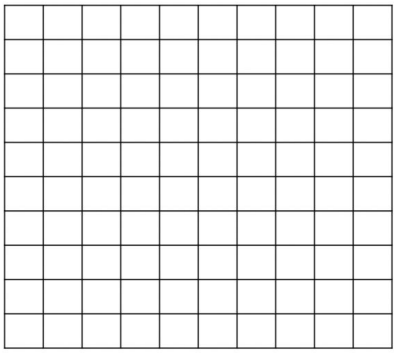
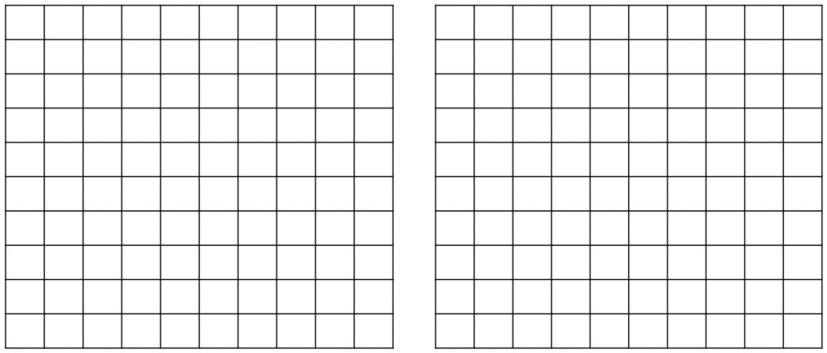
Place Value with Decimals: Representing Numbers

Write the numbers that are represented below:

Use the 100s grids to represent the numbers below:

	
0.47	**1.095**

Place Value with Decimals: Understanding Value and Place Value

Place Value with Decimals: Understanding Value and Place Value

Write the VALUE and the PLACE VALUE NAME name of each underlined digit.

Number	Value	Place Value Name
3.1<u>5</u>		
12.<u>6</u>29		
4.03<u>7</u>		
60.2<u>5</u>4		

Write each number in expanded or standard form.

Standard Form	Expanded Form
46.728	
	4000 + 500 + 60 + 0.7 + 0.09 + 0.001
907.045	
	500 + 4 + 0.06 + 0.008

For each number, say how many tenths, hundredths and thousandths are in that number.

	How many tenths?	How many hundredths?	How many thousandths?
6.781			
29.032			

For each number, say what would be 0.1, 0.01 and 0.001 more and less.

	+ 0.1	- 0.1	+ 0.01	- 0.01	+ 0.001	- 0.001
3.821						
4.945						

Place Value with Decimals: Reading and Writing Decimal Numbers

Place Value with Decimals: Reading and Writing Decimal Numbers

Practice saying these numbers aloud and then write them in words. Use the number words pages in your toolkit to help you!

12.84
56.081
4.715

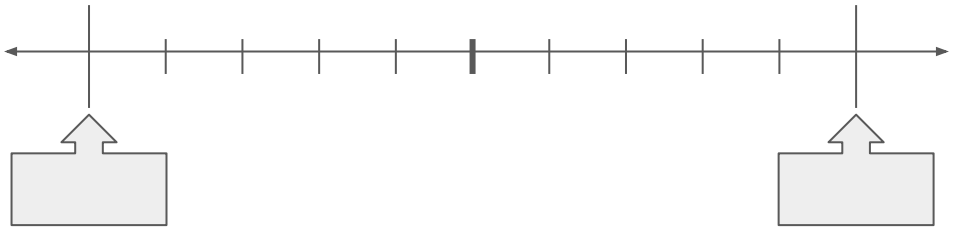
Write these numbers in standard form (just regular numbers). Use the place value chart in your toolkit to help you!!

"Fourteen and twenty two thousandths"
"Eighteen and four hundred nineteen thousandths"
"Seven hundred three and six hundredths"

Place Value with Decimals: Rounding Decimal Numbers

Nearest whole number=

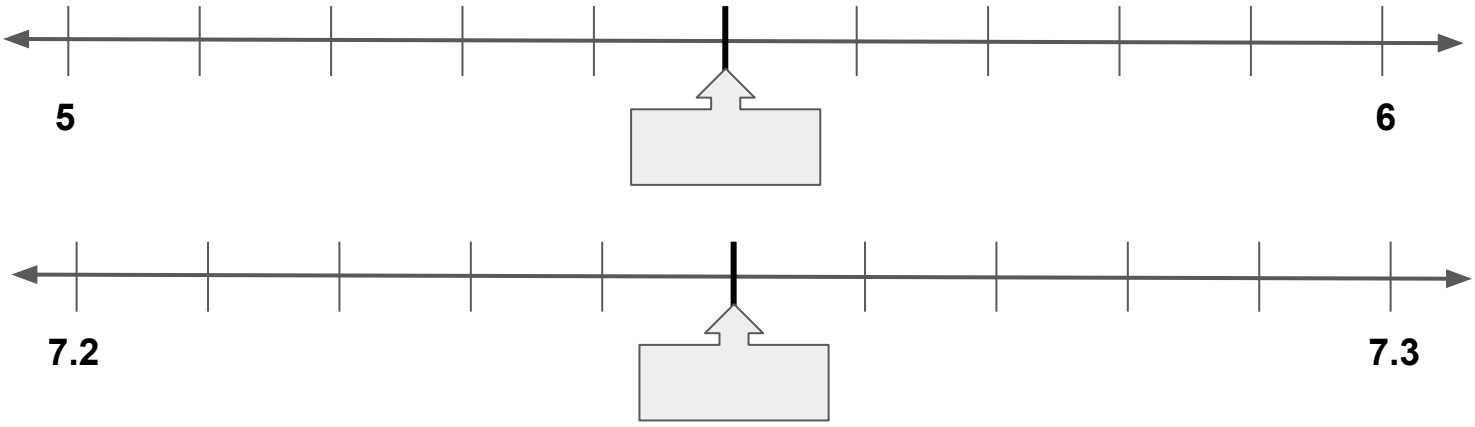
Nearest tenth=



Nearest

Place Value with Decimals: Rounding Decimal Numbers

Show the midpoint of each pair of numbers. .

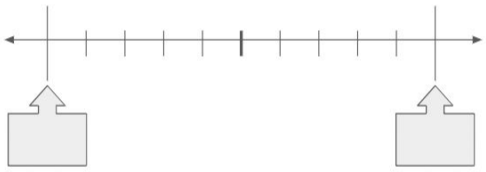


Round these numbers to the nearest whole number, tenth and hundredth:

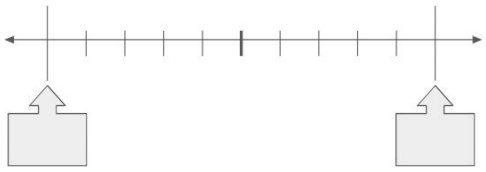
2.725

Nearest whole number=

Nearest tenth=



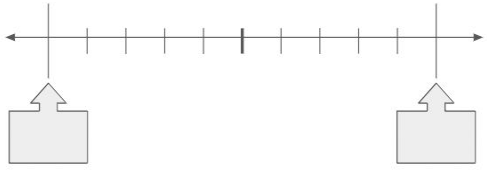
Nearest hundredth=



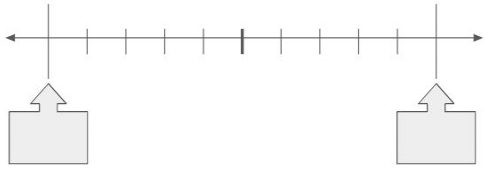
43.126

Nearest whole number=

Nearest tenth=



Nearest hundredth=



Place Value with Decimals: Comparing & Ordering Decimal Numbers

Place Value with Decimals: Comparing & Ordering Decimal Numbers

Compare each pair of numbers using a <, > or = symbol.

7.95 ☐ 7.59

620.202 ☐ 620.22

0.4 ☐ 0.08

10.031 ☐ 10.301

171.07 ☐ 171.1

29.900 ☐ 29.9

Put each list of numbers in order from least to greatest.

5.06 5.5 5.56 5.65 5.6

12.201 12.022 12.222 12.211 12.2

4.777 4.4 4.7 4.04 4.07

Add & Subtract with Decimals: Adding & Subtracting by Compensating

Add & Subtract with Decimals: Adding & Subtracting by Compensating

Rewrite each question using compensation to create a more friendly addition question that will lead to the same answer.

Question	Rewrite the question	Answer
4.9 + 3.4		
6.1 + 8.9		
4.98 + 3.46		
2.7 + 1.97		
9.99 + 2.73		
5.08 + 3.97		

Rewrite each question using compensation to create a more friendly subtraction question that will lead to the same answer.

Question	Rewrite the question	Answer
7.2 - 4.9		
8.4 - 5.8		
3.74 - 1.99		
12.35 - 9.8		
7.45 - 0.98		
7.3 - 1.95		

Add and Subtract with Decimals: Expand and Add or Subtract

Add and Subtract with Decimals: Expand and Add or Subtract

Use the "expand and add" strategy to find the following sums:

45.3 + 26.5 =

7.24 + 4.58 =

Use the "expand and subtract" strategy to find the following differences:

14.3 - 6.5 =

72.6 - 14.58 =

Add and Subtract with Decimals: Piece by Piece

Add and Subtract with Decimals: Piece by Piece

Add these decimal numbers piece by piece (with or without a numberline).

5.5 + 3.8 = _____

7.8 + 5.36 = _____

Subtract these decimal numbers piece by piece (with or without a numberline).

5.4 - 3.7 = _____

7.23 - 5.3 = _____

Add and Subtract with Decimals: Subtract by Counting Up

Add and Subtract with Decimals: Subtract by Counting Up

Subtract by counting up to find each difference.

5.7 - 3.4 = _____

7.28 - 5.76 = _____

8.15 - 6.7 = _____

11.7 - 8.32 = _____

7.12 - 5.48 = _____

Add and Subtract with Decimals: Add and Subtract by Place Value

Add and Subtract with Decimals: Add and Subtract by Place Value

Find each sum.

$\begin{array}{r} 4.7 \\ +\ 3.2 \\ \hline \end{array}$	$\begin{array}{r} 5.4 \\ +\ 2.9 \\ \hline \end{array}$
$\begin{array}{r} 7.54 \\ +\ 8.52 \\ \hline \end{array}$	$\begin{array}{r} 5.76 \\ +\ 2.53 \\ \hline \end{array}$

Find each difference.

$\begin{array}{r} 8.7 \\ -\ 3.5 \\ \hline \end{array}$	$\begin{array}{r} 8.4 \\ -\ 2.9 \\ \hline \end{array}$
$\begin{array}{r} 7.54 \\ -\ 1.52 \\ \hline \end{array}$	$\begin{array}{r} 5.32 \\ -\ 2.53 \\ \hline \end{array}$

Multiplication and Division with Decimals: Multiply Decimals

Multiplication and Division with Decimals: Multiply Decimals

Find each product.

4 x 0.2 = _____	0.5 x 3 = _____
6 x 0.25 = _____	2 x 1.3 = _____
2.1 x 4 = _____	1.6 x 3 = _____
0.7 x 3 = _____	5 x 1.4 = _____
2 x 2.8 = _____	3.2 x 4 = _____

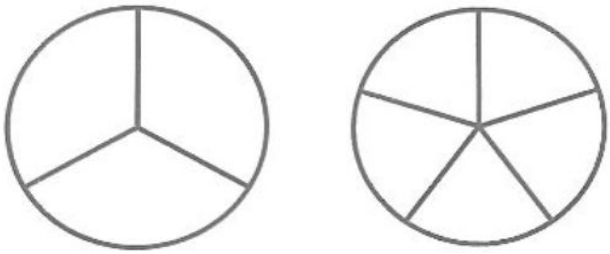
Multiplication and Division with Decimals: Divide Decimals

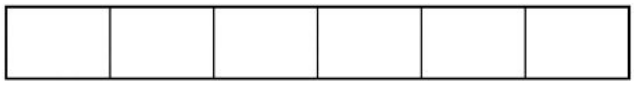
Multiplication and Division with Decimals: Divide Decimals

Find each quotient.

4.2 ÷ 2 = _____	2.5 ÷ 5 = _____
1.6 ÷ 0.2 = _____	2.8 ÷ 4 = _____
2.1 ÷ 3 = _____	1.8 ÷ 0.9 = _____
3.2 ÷ 2 = _____	3.5 ÷ 0.5 = _____
1.2 ÷ 0.4 = _____	2.4 ÷ 4 = _____

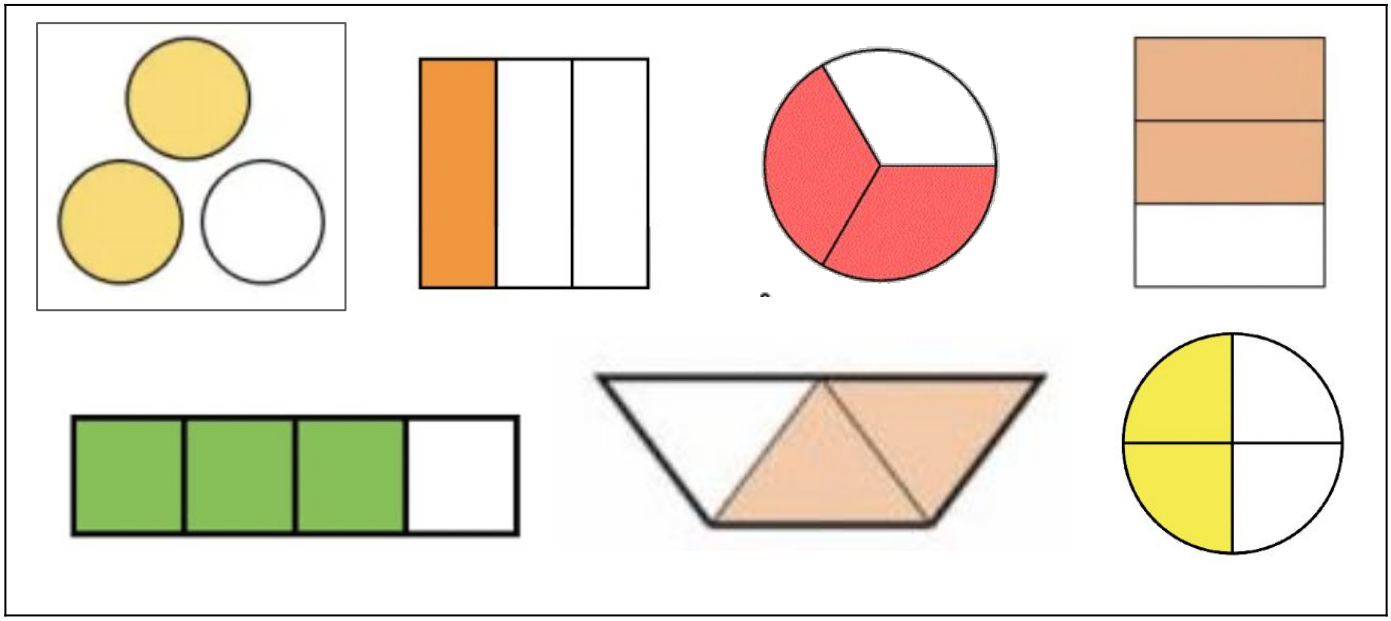
Introduction to Fractions: Representing Fractions



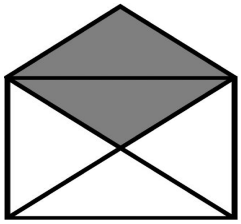
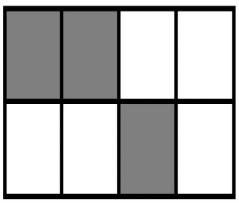
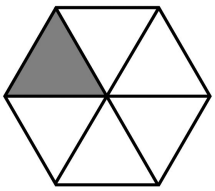


Introduction to Fractions: Representing Fractions

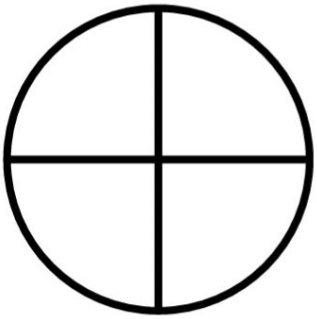
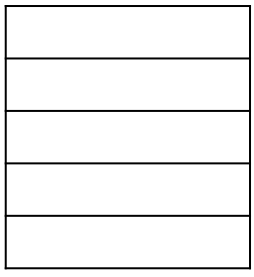
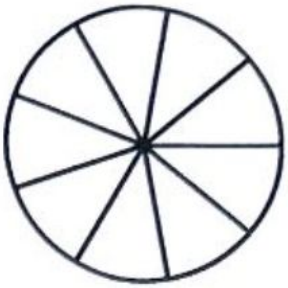
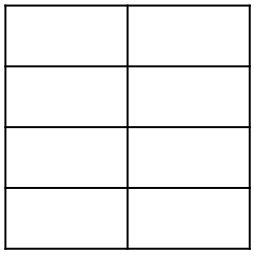
Circle all the images that represent ⅔



Write the fraction that represents the shaded area of each figure below.

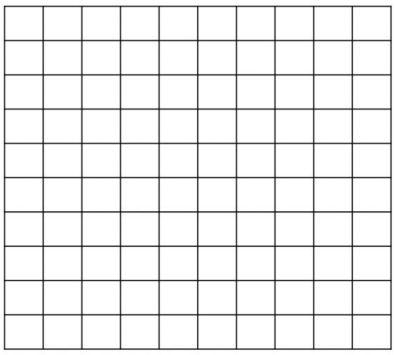
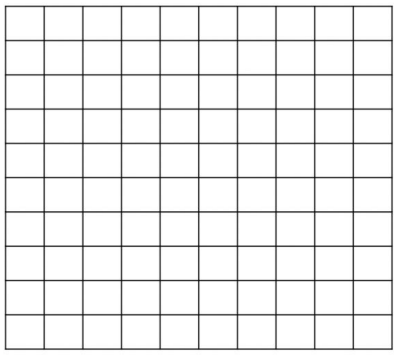
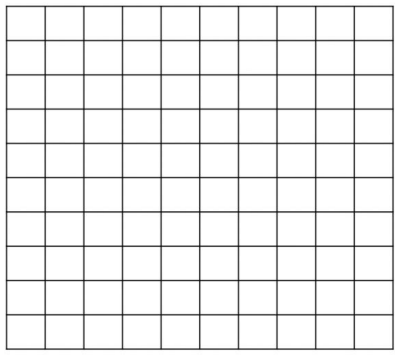
Shade each figure to match the fraction indicated below it.

			
$\frac{1}{4}$	$\frac{3}{5}$	$\frac{5}{9}$	$\frac{7}{8}$

Introduction to Fractions: Decimal Fractions

Introduction to Fractions: Decimal Fractions

Shade the grids to represent each decimal fraction.

		
$\frac{15}{100}$	$\frac{3}{10}$	$\frac{75}{100}$

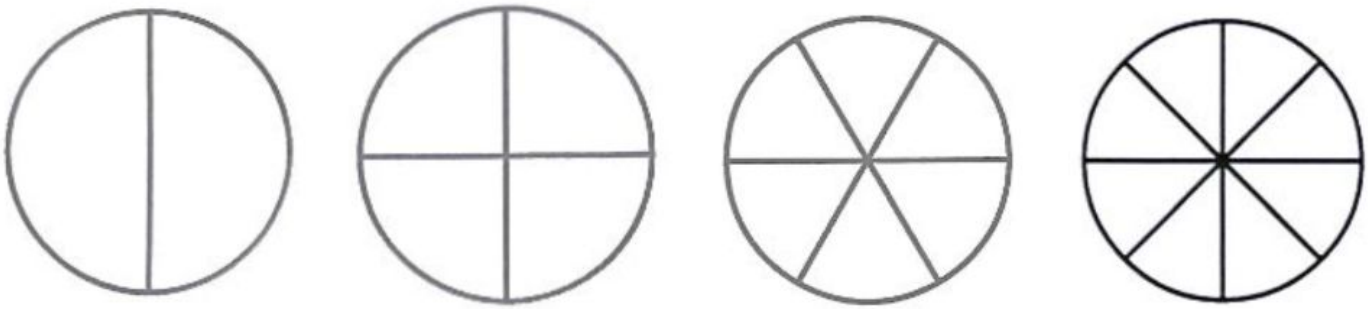
Write each decimal as a fraction.

0.45	**0.7**	**0.09**	**0.1**

Write each fraction as a decimal.

$\frac{81}{100}$	$\frac{3}{10}$	$\frac{15}{100}$	$\frac{7}{100}$

Introduction to Fractions: Equivalent Fractions



Introduction to Fractions: Equivalent Fractions

Show, using a drawing that $\frac{1}{2}$ is equivalent to $\frac{2}{4}$

For each fraction given below, write an equivalent fraction.

$\frac{3}{5} =$	$\frac{1}{4} =$	$\frac{6}{8} =$	$\frac{2}{3} =$

Fill in each blank to make equivalent fractions.

$$\frac{1}{5} = \frac{\square}{10} \qquad \frac{1}{\square} = \frac{2}{6}$$

$$\frac{3}{4} = \frac{9}{\square} \qquad \frac{\square}{8} = \frac{5}{10}$$

Introduction to Fractions: Comparing & Ordering Fractions

Introduction to Fractions: Comparing & Ordering Fractions

Compare each set of fractions.

$\frac{2}{5} \square \frac{1}{5}$ $\frac{3}{8} \square \frac{3}{5}$

$\frac{3}{6} \square \frac{1}{2}$ $\frac{4}{5} \square \frac{1}{3}$

$\frac{1}{3} \square \frac{1}{9}$ $\frac{5}{6} \square \frac{9}{10}$

Put each list of fractions in order from LEAST to GREATEST.

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

$\frac{7}{10}$	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{5}{10}$