Name _____ Date _____

Learning Target: I will multiply multi-digit numbers

6th Grade - Readiness Standard 2 - 5.NBT.5 - Form A

1. **We Do Together:** Label, multiply and show.

Label the partial lengths if the total length is 2864	Show your thinking using numbers and symbols

Label the partial lengths if the total length is 2864

	2000	800	60	4
7	7 × 2000 14000	7 × 800 5600	7 × 60 420	7 × 4 28

Multiply to find each partial area

Show your thinking using numbers and symbols

```
  2 8 6 4
x       7
  14000          or              28
   5600                         420
    420                        5600
+    28                    + 14000
──────                    ────────
 20048                      20048
```

2. **Reflect:** What questions do you have about multiplying multi-digit numbers?

3. **You Do Together:** Label, multiply and show.

Label the partial lengths if the total length is 28

	20	8
10	10 × 20 200	10 × 8 80
7	7 × 20 140	7 × 8 56

Multiply to find each partial area

Show your thinking using numbers and symbols

```
   2 8
x  1 7
  200              56
   80      or     140
  140              80
+  56           + 200
─────          ──────
  476            476
```

Label the partial lengths if the total length is 286

	200	80	6
10	10 × 200 2000	10 × 80 800	10 × 6 60
7	7 × 200 1400	7 × 80 560	7 × 6 42

Multiply to find each partial area

Show your thinking using numbers and symbols

```
   2 8 6
x    1 7
  2000             42
   800            560
    60     or    1400
  1400             60
   560            800
+   42          +2000
──────         ──────
  4862           4862
```

Name _____   Date _____

Learning Target: I will divide 4-digit number

6th Grade - Readiness Standard 3 - 5.NBT.6 - Form A

1. We Do Together: List, label, think multiply to divide and show.

List the multiples of 3

$3 \times 1 = \underline{3}$ $3 \times 2 = \underline{6}$ $3 \times 3 = \underline{9}$

$3 \times 4 = \underline{12}$ $3 \times 5 = \underline{15}$ $3 \times 6 = \underline{18}$

$3 \times 7 = \underline{21}$ $3 \times 8 = \underline{24}$ $3 \times 9 = \underline{27}$

Label the missing lengths

	2000	300	60	4
3	3(2000)	3(300)	3(60)	3(4)
	6000	900	180	12

Show your thinking using numbers and symbols

```
            4
       60  ⌐
      300  | 2364
     2000
  3)7092
   -6000
    1092
    - 900
     192
     -180
      12
      -12
       0
```

List the multiples of 7

$7 \times 1 = \underline{7}$ $7 \times 2 = \underline{14}$ $7 \times 3 = \underline{21}$

$7 \times 4 = \underline{28}$ $7 \times 5 = \underline{35}$ $7 \times 6 = \underline{42}$

$7 \times 7 = \underline{49}$ $7 \times 8 = \underline{56}$ $7 \times 9 = \underline{63}$

Label the missing lengths

	800	30	6
7	7(800)	7(30)	7(6)
	5600	210	42

Show your thinking using numbers and symbols

```
           6
       30  ⌐
      800  | 836
  7)5852
   -5600
    252
   -210
     42
    -42
      0
```

2. Reflect: What questions do you have about dividing a 4-digit number?

Learning Target: I will divide 4-digit number   6th Grade - Readiness Standard 3 - 5.NBT.6 - Form A

3. You Do Together: List, label, think multiply to divide and show.

List the multiples of 20

$20 \times 1 = \underline{20}$ $20 \times 2 = \underline{40}$ $20 \times 3 = \underline{60}$

$20 \times 4 = \underline{80}$ $20 \times 5 = \underline{100}$ $20 \times 6 = \underline{120}$

$20 \times 7 = \underline{140}$ $20 \times 8 = \underline{160}$ $20 \times 9 = \underline{180}$

Label the missing lengths

	300	20	7
20	20(300) 6000	20(20) 400	20(7) 140

Show your thinking using numbers and symbols

```
              7
         20 ) 327
              300
  20 ) 6 5 4 0
      -6000
        540
       -400
        140
       -140
          0
```

List the multiples of 14

$14 \times 1 = \underline{14}$ $14 \times 2 = \underline{28}$ $14 \times 3 = \underline{42}$

$14 \times 4 = \underline{56}$ $14 \times 5 = \underline{70}$ $14 \times 6 = \underline{84}$

$14 \times 7 = \underline{98}$ $14 \times 8 = \underline{112}$ $14 \times 9 = \underline{126}$

Label the missing lengths

	500	80	9
14	14(500) 7000	14(80) 1120	14(9) 126

Show your thinking using numbers and symbols

```
              9
         80 ) 589
              500
  14 ) 8 2 4 6
      -7000
       1246
      -1120
        126
       -126
          0
```

Name _____ Date _____

Learning Target: I will add and subtract mixed numbers
with different denominators

6th Grade - Readiness Standard 4 - 5.NF.1 - Form A

1. We Do Together: Rewrite, draw, tell and show.

Rewrite using common denominators	Show the common denominators and ungroup to subtract

Rewrite using common denominators

$2\frac{8}{6}$

$3\frac{1^{\times 2}}{3\times 2}$ $3\frac{2}{6}$

$-1\frac{5}{6}$ $-1\frac{5}{6}$

$\frac{3}{6}$

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

-2 $\frac{3}{6}$ $-\frac{5}{6}$ $2\frac{8}{6}$

0   1   2   3   4

$3\frac{2}{6}$

Tell what you ungrouped and the equivalent mixed number	Show your thinking using numbers and symbols in the box to the far left

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

2. Reflect: What questions do you have about subtracting mixed numbers?

3. You Do Together: Rewrite, draw, tell and show.

Rewrite using common denominators

$1\frac{12}{8}$

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

$-1\frac{7}{8}$ $-1\frac{7}{8}$

$\frac{5}{8}$

Draw the total, ungroup if necessary, then subtract

-1 $\frac{5}{8}$ $-\frac{7}{8}$ $1\frac{12}{8}$

0   1   2   3   4

$2\frac{4}{8}$

Tell what you ungrouped and the equivalent mixed number	Show your thinking using numbers and symbols in the box to the far left

1 Whole $= \frac{8}{8}$ $2\frac{4}{8} = 1\frac{12}{8}$

Rewrite using common denominators

$1\frac{2^{\times 4}}{3\times 4}$ $1\frac{8}{12}$

$+1\frac{3\times 3}{4\times 3}$ $1\frac{9}{12}$

$2\frac{17}{12}$

or $3\frac{5}{12}$

Draw the total by <u>adding the whole numbers first</u>

$1+1=2$ $\frac{8}{12} + \frac{9}{12}$

0   1   2   3   4

$3\frac{5}{12}$

Tell what you grouped and the equivalent mixed number	Show your thinking using numbers and symbols in the box to the far left

1 Whole $= \frac{12}{12}$ $\frac{8}{12} + \frac{9}{12} = \frac{17}{12} = 1\frac{5}{12}$

Name _____ Date _____

Learning Target: I will multiply a whole number by a fraction   6th Grade - Readiness Standard 5 - 5.NF.4b - Form A
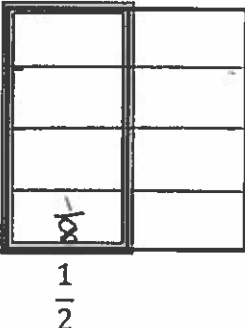
1. We Do Together: Draw, identify and multiply.

Draw 1-fourth of 2-thirds of the whole	**Identify** the size of 1-fourth of the 2-thirds
$\frac{1}{4}$ $\frac{1}{12}$ $\frac{2}{3}$	1-fourth of 2-thirds is $\frac{2}{12}$ of the whole
	Multiply numerators and denominators, then simplify
	$\frac{1}{4} \times \frac{2}{3} = \frac{2}{12} = \frac{2 \cdot 1}{2 \cdot 6} = \frac{1}{6}$

2. Reflect: What questions do you have about multiplying a whole number by a fraction?

3. You Do Together: Draw, identify and multiply.

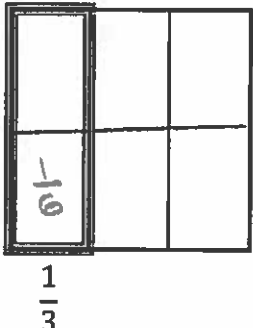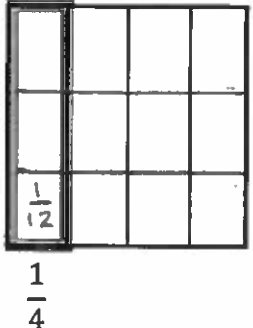| **Draw** 2-thirds of 5-sixths of the whole	**Identify** the size of 2-thirds of the 5-sixths
$\frac{2}{3}$ $\frac{1}{18}$ $\frac{5}{6}$	2-thirds of 5-sixths is $\frac{10}{18}$ of the whole
	Multiply numerators and denominators, then simplify
	$\frac{2}{3} \times \frac{5}{6} = \frac{10}{18} = \frac{2 \cdot 5}{2 \cdot 9} = \frac{5}{9}$
Draw 3-fourths of 1-third of the whole	**Identify** the size of 3-fourths of the 1-third
$\frac{3}{4}$ $\frac{1}{12}$ $\frac{1}{3}$	3-fourths of 1-third is $\frac{3}{12}$ of the whole
	Multiply numerators and denominators, then simplify
	$\frac{3}{4} \times \frac{1}{3} = \frac{3}{12} = \frac{3 \cdot 1}{3 \cdot 4} = \frac{1}{4}$

Name _____ Date _____

Learning Target: I will divide a unit fraction by a whole number   6th Grade - Readiness Standard 6 - 5.NF.7a - Form A

1. We Do Together: Divide, identify, think multiply to divide and share.

Divide 1-half of the whole into 4 equal parts	**Identify** the size of each part	**Think** multiply to divide
$\frac{1}{2}$	$\frac{1}{2} \div 4 = \frac{1}{8}$	$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$
	Share how 4 is related to $\frac{1}{4}$ $\frac{1}{4}$ is the reciprocal of 4 or $\frac{4}{1}$	

2. Reflect: What questions do you have about dividing a unit fraction by a whole number?

3. You Do Together: Divide, identify, think multiply to divide and share.

Divide 1-third of the whole into 2 equal parts	**Identify** the size of each part	**Think** multiply to divide
$\frac{1}{3}$	$\frac{1}{3} \div 2 = \frac{1}{6}$	$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$
	Share how 2 is related to $\frac{1}{2}$ $\frac{1}{2}$ is the reciprocal of 2 or $\frac{2}{1}$	
Divide 1-fourth of the whole into 3 equal parts	**Identify** the size of each part	**Think** multiply to divide
$\frac{1}{4}$	$\frac{1}{4} \div 3 = \frac{1}{12}$	$\frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$
	Share how 3 is related to $\frac{1}{3}$ $\frac{1}{3}$ is the reciprocal of 3 or $\frac{3}{1}$	

DELTA MATH

Name _____   Date _____

Learning Target: I will divide a whole number by a unit fraction   6th Grade - Readiness Standard 7 - 5.NF.7b - Form A

1. We Do Together: Divide, identify and think multiply to divide.

Each squares to represent 1 whole. **Divide** the 3 wholes into equal parts of 1-fourth

✓	✓	✓
✓	✓	✓
✓	✓	✓
$\frac{1}{4}$	✓	✓

Identify how many <u>1-fourths</u> are in 3 wholes

$3 \div \frac{1}{4} = 12$

Think multiply to divide

$3 \times 4 = 12$

Share how $\frac{1}{4}$ is related to 4

4 is the reciprocal of $\frac{1}{4}$

2. Reflect: What questions do you have about dividing a whole number by a unit fraction?

3. You Do Together: Divide, identify and think multiply to divide.

Each squares to represent 1 whole. **Divide** the 5 wholes into equal parts of 1-third

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

Identify how many <u>1-thirds</u> are in 5 wholes

$5 \div \frac{1}{3} = 15$

Think multiply to divide

$5 \times 3 = 15$

Share how $\frac{1}{3}$ is related to 3

3 is the reciprocal of $\frac{1}{3}$

Name _____ Date _____

Learning Target: I will multiply and divide fractions   7th Grade - Readiness Standard 1 - 6.NS.1 - Form A

1. We Do Together: Label, multiply, divide and think multiply to divide.

Draw 1-half of 1-fourth of the whole	Draw to find how many <u>1-fourths</u> are in 1-half
$\frac{1}{2}$ $\frac{1}{8}$ $\frac{1}{4}$	$\frac{1}{4}$ ✓ $\frac{1}{2}$
Multiply to find the size of each fractional part	**Write** the number of groups and think multiply to divide
$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$	$\frac{1}{2} \div \frac{1}{4} = 2$ $\frac{1}{2} \times \frac{4}{1} = \frac{4}{2} = \frac{2 \cdot 2}{2 \cdot 1} = 2$

2. Reflect: What questions do you have about multiplying and dividing fractions?

3. You Do Together: Label, multiply, divide and think multiply to divide.

Draw 2-thirds of 2-sixths of the whole	Draw to find how many <u>2-sixths</u> are in 2-thirds
$\frac{2}{3}$ $\frac{1}{18}$ $\frac{2}{6}$	$\frac{1}{6}\frac{1}{6}\frac{1}{6}\frac{1}{6}$ $\frac{2}{3}$
Multiply to find the size of each fractional part	**Write** the number of groups and think multiply to divide
$\frac{2}{3} \times \frac{2}{6} = \frac{4}{18} = \frac{2 \cdot 2}{2 \cdot 9} = \frac{2}{9}$	$\frac{2}{3} \div \frac{2}{6} = 2$ $\frac{2}{3} \times \frac{6}{2} = \frac{12}{6} = \frac{6 \cdot 2}{6 \cdot 1} = 2$

Learning Target: I will evaluate algebraic expressions   7th Grade - Readiness Standard 4 - 6.EE.2c - Form A

1. We Do Together: Draw, tell and show.

Draw each x as 4 plus signs to evaluate $3x + 2$ when $x = 4$.	Show your thinking using numbers and symbols
	$3x + 2$ when $x = 4$
+x + + ++ ++ ++ ++ ++	$3(\underline{4}) + 2$
+x ++ ++ ++ ++ ++ ++	$\underline{12} + 2$
+x ++ ++ ++ ++	$\underline{14}$
Is equal to	
Tell the value of the 3 x's	
$x + x + x = 3x = 3(\underline{4}) = \underline{12}$	

2. Reflect: What questions do you have about evaluating algebraic expressions?

3. You Do Together: Draw, tell and show.

Draw each x as 5 plus signs to evaluate $2x + 4$ when $x = 5$.	Show your thinking using numbers and symbols
	$2x + 3$ when $x = 5$
+x + + + ++ ++ ++ ++ ++ ++ ++ ++	$2(\underline{5}) + 3$
+x ++ ++ ++ ++ ++	$\underline{10} + 3$
Is equal to	$\underline{13}$
Tell the value of the 2 x's	
$x + x = 2x = 2(\underline{5}) = \underline{10}$	
Draw the x^2 as a 3 by 3 array of plus signs to evaluate $x^2 + 5$ when $x = 3$.	Show your thinking using numbers and symbols
	$x^2 + 5$ when $x = 3$
+x² + + + + + ++ ++ ++ ++ ++ ++ ++	$(\underline{3})^2 + 5$
	$\underline{3} \cdot \underline{3} + 5$
	$\underline{9} + 5$
Is equal to	$\underline{14}$
Tell the value of x^2	
$x^2 = x \cdot x = \underline{3} \cdot \underline{3} = \underline{9}$	

DELTA MATH

Learning Target: I will simplify algebraic expressions

1. We Do Together: Say, identify, draw, and write.

Say what you see	Draw the equivalent simplified algebraic expression
$+x$ $+$ $+x$ $+$ $+$ $+x$ $+$ $+$ $+x$ $+$ $+$	x $+$ x $+$ x $+$ x $+$
Identify the like terms	**Write the equivalent simplified algebraic expression**
$\underline{x} + 5 + \underline{3x}$	$4x + 5$

2. Reflect: What questions do you have about simplifying algebraic expressions?

3. You Do Together: Say, identify, draw, and write.

Say what you see	Draw the equivalent simplified algebraic expression
$+x^2$ $+x$ $+$ $+x$ $+x$ $+$ $+x$ $+$ $+x$ $\cancel{\frac{+}{+}}$	x^2 x $+$ x $+$ x $+$ x x
Identify the like terms	**Write the equivalent simplified algebraic expression**
$\underline{x^2} + \underline{\underline{4x}} + \underline{\underline{\underline{5}}} + \underline{\underline{x}} - \underline{\underline{2}}$	$x^2 + 5x + 3$
Say what you see	Draw the equivalent simplified algebraic expression
$+x$ $++$ $+x$ $+$ $+x$ $++$ $+x$ $+$ $+x$ $++$ $+$ $+$	x $+$ $+$ x $+$ $+$ x $+$ $+$ x $+$ $+$ x $+$ $+$
Identify the like terms	**Write the equivalent simplified algebraic expression**
$3(x+2) + 2x + 4$ or $\underline{3x} + \underline{\underline{6}} + \underline{2x} + \underline{\underline{4}}$	$5x + 10$

Name _____ Date _____

Learning Target: I will solve 1-step equations   7th Grade - Readiness Standard 6 - 6.EE.7 - Form A

1. We Do Together: Say, draw, and show.

Say what you see	Show your thinking using numbers and symbols
 Is equal to	$x + 3 = 12$ $\quad -3 \quad -3$ $\overline{\quad x \quad = \quad 9}$
Draw two ways to find the value of x. *(Algebra Tiles and Tape Diagrams)*	

2. Reflect: What questions do you have about solving 1-step equations?

3. You Do Together: Say, draw, and show.

Say what you see	Show your thinking using numbers and symbols
 5 groups of 2 *Is equal to*	$\dfrac{10}{5} = \dfrac{5x}{5}$ $2 = x$
Draw two ways to find the value of x. *(Algebra Tiles and Tape Diagrams)*	
Say what you see 	$\dfrac{5}{2} \cdot 8 = \dfrac{2}{5}x$ $\overline{\qquad \dfrac{2}{5} \qquad}$
Draw to find the value of x. *(Tape Diagrams)*	
Say what you see 	$\dfrac{3x}{3} = \dfrac{\frac{1}{2}}{3}$ $x = \dfrac{1}{2} \cdot \dfrac{1}{3} = \dfrac{1}{6}$
Draw to find the value of x. *(Tape Diagrams)*	