DELTA MATH
RtI PROGRAM

Tier 3
Intervention Lessons

5.NBT.6

Learning Target: I will divide four-digit numbers

Readiness for 6.NS.3: Divide multi-digit decimals

Table of Contents

Tier 3 Intervention Planning Guide

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

	Recommended Actions
Beginning (5 min.)	➢ Review the learning target with the whole group ➢ Ask each student to set a goal for the day based on their previous Quick Check Score ➢ Have each student use a highlighter to plot their goal for the day
Middle (15 min.)	➢ Model solving a word problem – "I do" *(Sessions 1, 3 and 6 only)* ➢ Guided Practice – "We do" **Sessions 1 and 2:** Divide multi-digit numbers using base-ten blocks and place-value cards **Sessions 3, 4 and 5:** Divide multi-digit numbers using area model drawings and sub-totals **Sessions 6, 7 and 8:** Divide multi-digit numbers using place-value understanding

End (10 min.)	➢ Bring the students back together.
	➢ Ask students to reflect on their progress towards the learning target
	    o What did I learn today about dividing four-digit whole numbers?
	    o How confident do you feel about dividing four-digit whole numbers on my own? (Thumbs up, down, or sideways)
	➢ Assess each student's progress using the next **Quick Check** form
	➢ Guide students to self-correct their **Quick Check**
	
	➢ Guide students to chart their progress in their **Growth Chart**
	    o If not using Delta Math lessons, record the activity in the table
	
	➢ Collect each student's **Quick Check** and **Growth Chart**

After Session 6	➢ Differentiation Options:
	    o Allow students who met the learning goal to work independently while others do the guided practice during the next session
	    o Exit students who met the learning goal for a third time
	➢ Problem solve with a team to plan additional support for students who do not meet the learning goal within 8 sessions

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

Zane went apple picking at the orchard with 3 friends. Together they picked He has 92 apples.
If Zane and his 3 friends picked the same number of apples, how many apples did each person pick?

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

Prepare to Divide	*Build the number of people who picked apples. (4)* *Build the total number of apples picked. (92)*	
Find the Sub-Totals the each person picked	*Find how many **tens** each person picked. (2)*	
	Ungroup the ten into 10 ones.	
	*Find how many **ones** each person picked. (6)*	
Find the total that each person picked	*Find how many apples each person picked. (23)*	

Session 1: Modeling *(I Do - Teacher Notes)*

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals
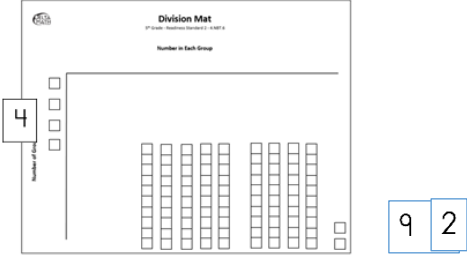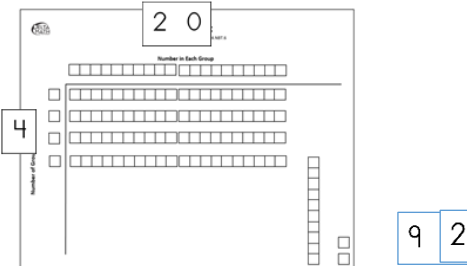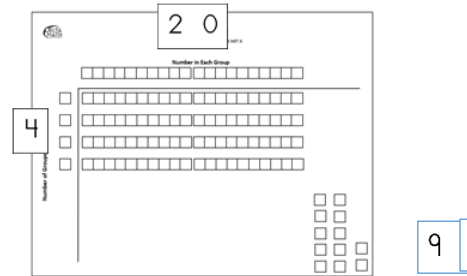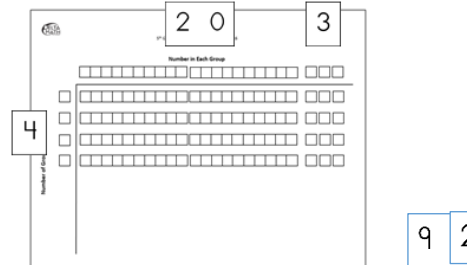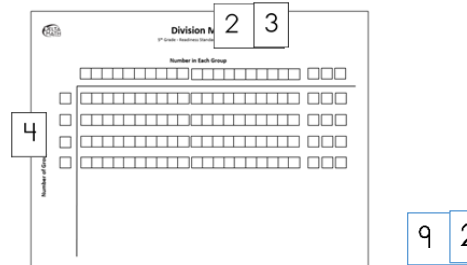
Zane went apple picking at the orchard with 3 friends. Together they picked He has 92 apples.
If Zane and his 3 friends picked the same number of apples, how many apples did each person pick?

I am going to think aloud to model solving this problem.

Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.

The problem is about Zane and his friends picking apples.

Second, I need to determine what I need to find.

I need to find the number of apples each person picked.

Third, I need to determine what I know.

I know that Zane and 3 friends picked an equal amount of apples for a total of 92 apples.

Fourth, I need to figure out what I can try.

I am going to try using base-ten blocks and place-value cards to find how many apples each person picked.

I will begin setting up the division problem by building the total number of apples…92…and the number of equal groups…4.
(Build each number on the division mat using base-ten blocks and place-value cards.)

Now, I will find the first sub-total that each person picked by sharing the tens among the 4 people. *(Move 1 group of tens to each group and then another group of tens to each group on the mat.)*

It looks like each person picked at least 20 apples.
(Place 2 tens and the "20" place-value card near the top of the division mat.)

Before I can share the rest of the apples with each person, I must ungroup this ten into 10 ones.
(Exchange the remaining ten for 10 ones.)

I will find the second sub-total by sharing the 12 ones among the 4 people. *(Move 1 of the ones to each group on the mat until each group has 3 ones.)*

It looks like each person picked another 3 apples.
(Place 3 ones and the "3" place-value card near the top of the division mat.)

To find the total number of apples that each person picked, I will combine the sub-totals 20 and 3…this equals 23. *(Slide the "3" place-value card on top of the "20" to represent the 23 apples picked by each person.)*

Last, I need to make sure that my answer makes sense.

I found that each friend picked 23 apples. It makes sense because I built the total number of apples picked using base-ten blocks. Then, I found each sub-total by separating the blocks into 4 equal groups.
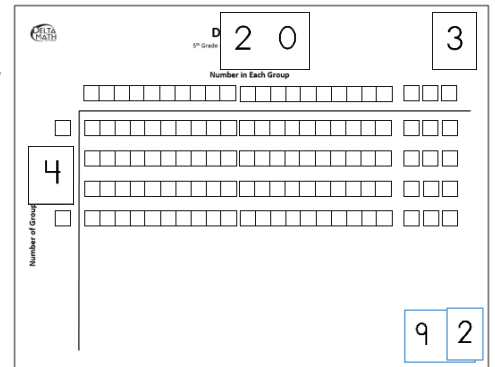
1	6	2	0	6	0
2	7	3	0	7	0
3	8	4	0	8	0
4	9	5	0	9	0
5	1	0		1	0	0

<	>	=	+	–	x	÷
Less Than	Greater Than	Equal to				

Note: The place-value cards below are the same as the cards used in the multi-digit multiplication lessons, but are not used in the division lessons.

2 0 0	3 0 0
4 0 0	5 0 0
6 0 0	7 0 0
8 0 0	9 0 0

Use for Modeling Problem	
$3\overline{)92}$	

Use for Problem 1	Use for Problem 2
$4\overline{)56}$	$3\overline{)47}$

Use for Problem 3	Use for Problem 4
$5\overline{)130}$	$4\overline{)152}$

Use for Problem 5	Use for Problem 6
$5\overline{)62}$	$3\overline{)48}$

Use for Problem 7	Use for Problem 8
$4\overline{)112}$	$3\overline{)117}$

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

Session 1: **Guided Practice** (We Do)

Materials:

- Base-Ten Blocks (1 hundred, 20 tens and 20 ones)
- Place-value Cards (2 sets)
- Division Mat
- Essential Questions for Division

We Do Together: (Teacher Actions)

- Say the division problem.
- Use base-ten blocks and place-value cards to help you divide the numbers and write the answer.

1. $3\overline{)48}$	**2.** $6\overline{)78}$
3. $5\overline{)130}$	**4.** $4\overline{)152}$

You Do Together: (As a class, or in small groups)

- Students take turns leading and repeat the steps to divide the numbers.

5. $5\overline{)62}$	**6.** $3\overline{)72}$
7. $4\overline{)112}$	**8.** $3\overline{)117}$

![DELTA MATH R2I PROGRAM]

Learning Target: I will divide four-digit whole numbers

Readiness for dividing multi-digit decimals

Session 1: Guided Practice (We Do – Visual Support)

Materials:

➢ Base-Ten Blocks (1 hundred, 20 tens and 20 ones)

➢ Place-value Cards (2 sets)

➢ Division Mat

➢ Essential Questions for Division

We Do Together: (Teacher Actions)

➢ Say the division problem.

➢ Use base-ten blocks and place-value cards to help you divide the numbers and write the answer.

1.

$$1 \mid 6$$

$$3 \overline{\smash{)}48}$$

2.

$$1 \mid 3$$

$$6 \overline{\smash{)}78}$$

3.

$$2 \mid 6$$

$$5 \overline{\smash{)}130}$$

4.

$$2 \mid 8$$

$$4 \overline{\smash{)}152}$$

➢ How many equal groups are there?

➢ How many total objects are in each group?

➢ How many objects are in each group?

Session 1: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

> ➢ What did I learn today about dividing four-digit whole numbers?

> ➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form A

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

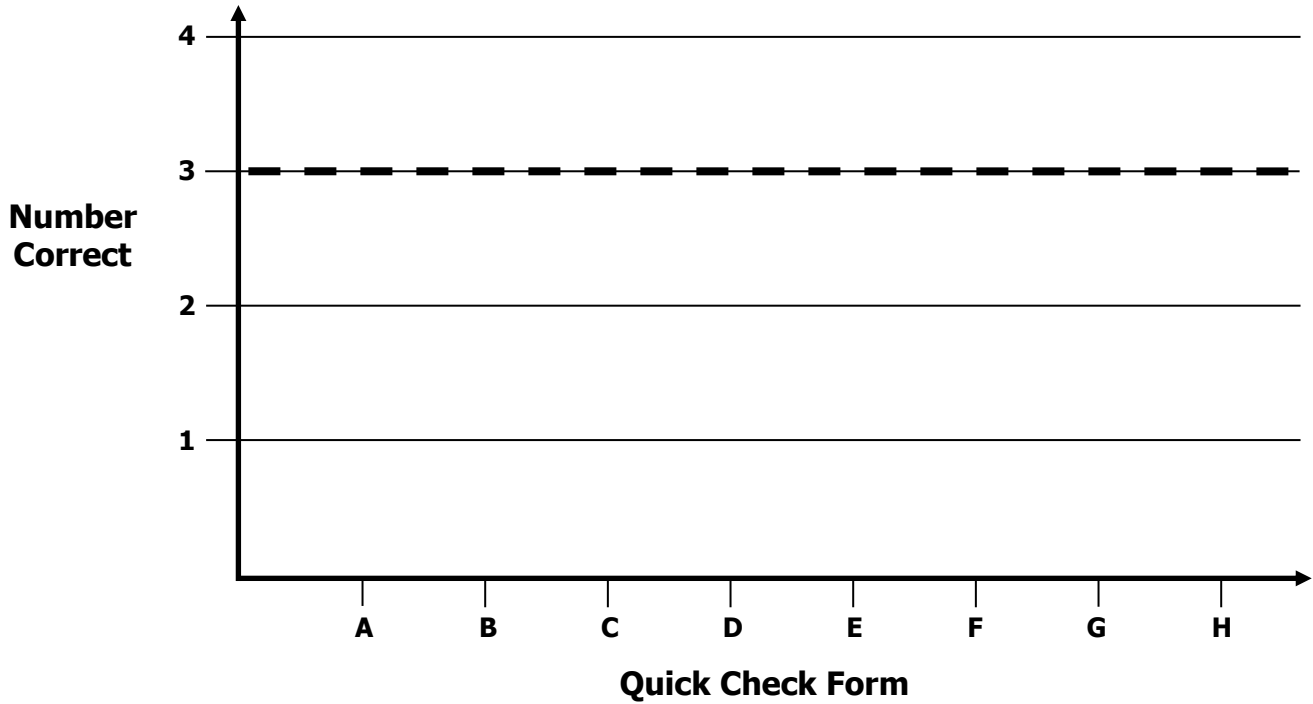|	
1. $5\overline{)3420}$	**2.** $3\overline{)2442}$
3. $10\overline{)3940}$	**4.** $12\overline{)5124}$

Growth Chart

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Goal: 3 out of 4 correct

Intervention	Date	Score
Session 1:		
Session 2:		
Session 3:		
Session 4:		
Session 5:		
Session 6:		
Session 7:		
Session 8:		

Learning Target: I will divide four-digit whole numbers

Readiness for dividing multi-digit decimals

Session 2: Guided Practice (We Do)

Materials:

- ➢ Base-Ten Blocks (1 hundred, 20 tens and 20 ones)
- ➢ Place-value Cards (2 sets – See Session 1)
- ➢ Multiplication Mat
- ➢ Essential Questions for Division (See Session 1)

We Do Together: (Teacher Actions)

- ➢ Say the division problem.
- ➢ Use base-ten blocks and place-value cards to help you divide the numbers and write the answer.

1. $4\overline{)6\,8}$	2. $3\overline{)4\,7}$
3. $5\overline{)1\,3\,0}$	4. $4\overline{)1\,5\,2}$

You Do Together: (As a class, or in small groups)

- ➢ Students take turns leading and repeat the steps to divide the numbers.

5. $5\overline{)6\,7}$	6. $3\overline{)4\,2}$
7. $4\overline{)1\,0\,4}$	8. $3\overline{)1\,1\,4}$

Session 2: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

➢ What did I learn today about dividing four-digit whole numbers?

➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form B

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $4 \overline{)3428}$	**2.** $6 \overline{)5478}$
3. $10 \overline{)4150}$	**4.** $13 \overline{)4576}$

Learning Target: I will divide four-digit whole numbers

Readiness for dividing multi-digit decimals

A local restaurant ordered mints to offer their customers after each meal. The order included for 12 cases for a total of 2832 of mints. How many mints are included in each case?

Session 3: Modeling *(I Do – Visual Support)*

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

A local restaurant ordered mints to offer their customers after each meal. The order included for 12 cases for a total of 2832 of mints. How many mints are included in each case?

Prepare to Divide	*Write and understand the division problem.* *Draw and label the rectangle.* *List the multiples of 12.*	12 x 1 = 12 12 x 2 = 24 12 x 3 = 36 12 x 4 = 48 12 x 5 = 60 12 x 6 = 72 12 x 7 = 84 12 x 8 = 96 12 x 9 = 108 12 x 10 = 120	**How many mints are in each case?** 12 | 2832 rectangle $12\overline{)2832}$
Find the Sub-Totals in each case	*Find how many **thousands** are in each case. (0)* *Find how many **hundreds** are in each case. (2)* *Find how many mints remain to divide. (432)*	12 x 1 = 12 12 x 2 = 24 12 x 3 = 36 12 x 4 = 48 12 x 5 = 60 12 x 6 = 72 12 x 7 = 84 12 x 8 = 96 12 x 9 = 108 12 x 10 = 120	**How many mints are in each case?** 200 box: 2832 / 2400 / 12 200 $12\overline{)2832}$ $-\ 2400$ 432

	*Find how many **tens** are in each case. (3)*
	
	Find how many mints remain to divide. (72)
		12 x 1 = 12
		12 x 2 = 24
		12 x 3 = 36
		12 x 4 = 48
		12 x 5 = 60
		12 x 6 = 72
		12 x 7 = 84
		12 x 8 = 96
		12 x 9 = 108
		12 x 10 = 120
			How many mints are in each case?
			200 / 30 box: 2832 / 2400 / 360 / 12
			
			30
			200
			$12\overline{)2832}$
			$-\ 2400$
			  432
			$-\ \ 360$
			   72

	*Find how many **ones** are in each case. (6)*
	
	Find how many mints remain to divide. (0)
		12 x 1 = 12
		12 x 2 = 24
		12 x 3 = 36
		12 x 4 = 48
		12 x 5 = 60
		12 x 6 = 72
		12 x 7 = 84
		12 x 8 = 96
		12 x 9 = 108
		12 x 10 = 120
			How many mints are in each case?
			200 / 30 / 6 box: 2832 / 2400 / 360 / 72 / 12
			
			6
			30
			200
			$12\overline{)2832}$
			$-\ 2400$
			  432
			$-\ \ 360$
			   72
			$-\ \ \ 72$
			    0

Find the total in each case	*Find how many total mints are in each case. (236)*	12 x 1 = 12
		12 x 2 = 24
		12 x 3 = 36
		12 x 4 = 48
		12 x 5 = 60
		12 x 6 = 72
		12 x 7 = 84
		12 x 8 = 96
		12 x 9 = 108
		12 x 10 = 120
			How many mints are in each case?
			200 / 30 / 6 box: 2832 / 432 / 60 / 2400 / 360 / 72 / 12
			
			6 ⌉
			30 ⎸ **236**
			200 ⌋
			$12\overline{)2832}$
			$-\ 2400$
			  432
			$-\ \ 360$
			   72
			$-\ \ \ 72$
			    0

Session 3: Modeling *(I Do - Teacher Notes)*

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

A local restaurant ordered mints to offer their customers after each meal. The order included for 12 cases for a total of 2832 of mints. How many mints are included in each case?

I am going to think aloud to model solving this problem.

Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.

The problem is about a local restaurant ordering after dinner mints.

Second, I need to determine what I need to find.

I need to find how many mints are included in each case.

Third, I need to determine what I know.

I know the restaurant ordered 12 cases of mints for a total of 2832 mints.

Fourth, I need to figure out what I can try.

Since this problem is looking for the number of mints in each case, I can use the division problem 2832 ÷ 12 to find the answer.

I will also draw a picture to help me find the answer since the numbers are large and using base-ten blocks would be more difficult.

I will begin drawing a rectangle and labeling it with information I know…the total number of mints is 2832…there are 12 cases of mints…and the amount in each case is unknown.
(Draw and label a rectangle with "2832", "12", and "How many mints are in each case?".)

To make finding each sub-total easier, I will list the multiples of 12…12 x 1 = 12…12 x 2 = 24…12 x 3 = 36…
(Continue listing each multiple up to 12 x 10 = 120).

Now I'm ready to find how many thousands of mints are in each of the 12 cases.

There are only 2 thousands to be shared among 12 cases.
(Point to the 12 and underline the digit "2" in the thousands place of 2832.)

I cannot share a thousand with each of the cases, so I will need to combine the thousands with the hundreds to find my first sub-total.

To find how many <u>hundreds</u> are in each of the 12 cases, I need to find…"12 times how many <u>hundreds</u> gets me close to…but not greater than 28 hundreds?"
(Point to the 12 and underline the digits "28" within 2832 in the math drawing.)

I see that 12 x 2 = 24…so 12 times 2 hundreds are 24 hundreds…which is equal to 2400.
(Write "200" at the top, draw a vertical line and write "2400" inside the first section of the math drawing.)

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

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I need to find how many remain from the original 2832 mints before I can find the number of tens in each case.

I shared 2400 mints in the 12 cases so far.
(Write "200" above the 2832 and "– 2400" below the 2832 to the right of the math drawing.)

Therefore, I need to subtract 2400 from 2832…this equals 432.
(Write "432" below the 2400 to the right of the math drawing.)

To find how many <u>tens</u> are in each of the 12 cases, I need to find…"12 times how many <u>tens</u> gets me close to…but not greater than 432?"
(Point to the 12 and 432 to the right of the math drawing.)

I see that 12 x 3 is 36…so 12 times 3 ten is 36 tens…which is equal to 360.
(Write "30" at the top, draw another vertical line and "360" inside the second section of the math drawing.)

I need to find how many remain from the 432 mints before I can find the number of ones in each case.

I shared another 360 mints in the 12 cases.
(Write "30" above the 200 and "– 360" below the 432 to the right of the math drawing.)

Therefore, I need to subtract these 360 from 432…this equals 72.
(Write "72" below the 360 to the right of the math drawing.)

To find how many <u>ones</u> are in each of the 12 cases, I need to find…"12 times how many <u>ones</u> gets me close to, but not greater than 72?"

I see that 12 times 6 is 72…so there are 5 ones in each of the 12 cases.
(Write "6" at the top of the third section and "72" inside the third section of the math drawing.)

I need to verify there are no mints remaining of the original 2832.

I shared another 72 mints among the 12 cases.
(Write "6" above the 30 and "– 72" below the 72 to the right of the math drawing.)

72 – 72 = 0, so there are no more mints remaining to divide.
(Write "0" below the "– 72" to the right of the math drawing.)

Now I will add the sub-totals to find the total number of mints in each case….2 hundred…3 tens…and 6 ones combine to equal 236.
(Write a "]" and "236" as the total to the right of the math drawing)

Last, I need to make sure that my answer makes sense.

I found that 236 mints would be in each case. It makes sense because I represented this "equal groups" situation as division problem and a drawing. Then, I used unknown multiplication to help me find each sub-total of mints that was shared equally in each case.

Learning Target: I will divide four-digit whole numbers

Session 3: Guided Practice (We Do)

We Do Together: (Teacher Actions)

➢ Say the problem and use an area model drawing to help you divide the numbers.

1.

How many are in each equal group?

$$10 \overline{)5620}$$

2.
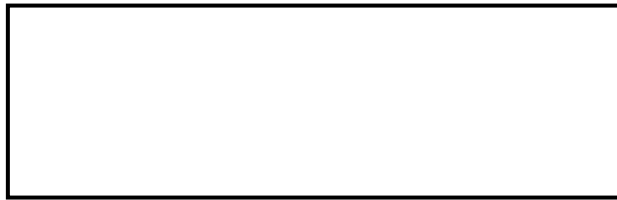
How many are in each equal group?

$$13 \overline{)3809}$$

Learning Target: I will divide four-digit whole numbers

Session 3: **Guided Practice** (We Do Together – Cont.)

3.

How many are in each equal group?

$$10\overline{)7352}$$

4.

How many are in each equal group?

$$14\overline{)3710}$$

Learning Target: I will divide four-digit whole numbers

Session 3: Guided Practice (You Do Together)

You Do Together: (As a class, or in small groups)

➤ Students take turns leading and repeat the steps to divide the numbers.

5.

How many are in each equal group?

$10\overline{)8160}$

6.

How many are in each equal group?

$12\overline{)2604}$

Learning Target: I will divide four-digit whole numbers

Session 3: Guided Practice (You Do Together – Cont.)

7.

How many are in each equal group?

$$10 \overline{) 2573}$$

8.

How many are in each equal group?

$$15 \overline{) 6345}$$

Learning Target: I will divide four-digit whole numbers

Session 3: Guided Practice (We Do – Visual Support)

We Do Together: (Teacher Actions)

➢ Say the problem and use an area model drawing to help you divide the numbers.

1.

How many are in each equal group?

10 groups of:

10 x 1 = 10
10 x 2 = 20
10 x 3 = 30
10 x 4 = 40
10 x 5 = 50
10 x 6 = 60
10 x 7 = 70
10 x 8 = 80
10 x 9 = 90
10 x 10 = 100

	500	*60*	*2*
10	5000	600	20

5620

$$\begin{array}{r} 2 \\ 60 \\ 500 \end{array} \bigg] \quad \textbf{562}$$

$$10\overline{)5620}$$
$$-\ 5000$$
$$\ 620$$
$$-\ 600$$
$$\ 20$$
$$-\ 20$$
$$\ 0$$

2.

How many are in each equal group?

13 groups of:

13 x 1 = 13
13 x 2 = 26
13 x 3 = 39
13 x 4 = 52
13 x 5 = 65
13 x 6 = 78
13 x 7 = 91
13 x 8 = 104
13 x 9 = 117
13 x 10 = 130

	200	*90*	*3*
13	2600	1170	39

3809

$$\begin{array}{r} 3 \\ 90 \\ 200 \end{array} \bigg] \quad \textbf{293}$$

$$13\overline{)3809}$$
$$-\ 2600$$
$$\ 1209$$
$$-\ 1170$$
$$\ 39$$
$$-\ 39$$
$$\ 0$$

Session 3: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

- ➢ What did I learn today about dividing four-digit whole numbers?

- ➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form C

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $3\overline{)2934}$	**2.** $8\overline{)7536}$
3. $10\overline{)3230}$	**4.** $14\overline{)4578}$

Learning Target: I will divide four-digit whole numbers

Session 4: Guided Practice (We Do)

We Do Together: (Teacher Actions)

➢ Say the problem and use an area model drawing to help you divide the numbers.

1.

How many are in each equal group?

$10\overline{)3920}$

2.

How many are in each equal group?

$14\overline{)2702}$

Learning Target: I will divide four-digit whole numbers

Session 4: **Guided Practice** (We Do Together – Cont.)

3.

How many are in each equal group?

$$10 \overline{) 8273}$$

4.

How many are in each equal group?

$$13 \overline{) 3471}$$

Learning Target: I will divide four-digit whole numbers

Session 4: **Guided Practice** (You Do Together)

You Do Together: (As a class, or in small groups)

➤ Students take turns leading and repeat the steps to divide the numbers.

5.

How many are in each equal group?

$$10 \overline{)6280}$$

6.

How many are in each equal group?

$$17 \overline{)2601}$$

Learning Target: I will divide four-digit whole numbers

Session 4: **Guided Practice** (You Do Together – Cont.)

7.

How many are in each equal group?

$$10\overline{)2753}$$

8.

How many are in each equal group?

$$15\overline{)5370}$$

Session 4: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

> ➢ What did I learn today about dividing four-digit whole numbers?

> ➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $4\overline{)2788}$	**2.** $7\overline{)3724}$
3. $10\overline{)5360}$	**4.** $13\overline{)3692}$

Learning Target: I will divide four-digit whole numbers
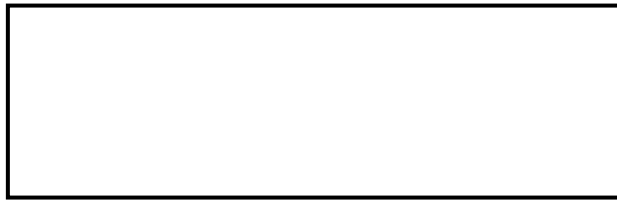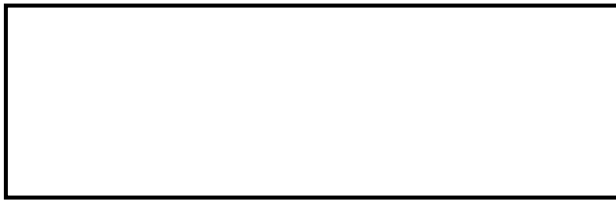
Session 5: **Guided Practice** (We Do)

We Do Together: (Teacher Actions)

  ➢ Say the problem and use an area model drawing to help you divide the numbers.

1.

How many are in each equal group?

$$10\overline{)5730}$$

2.

How many are in each equal group?

$$13\overline{)3705}$$

Learning Target: I will divide four-digit whole numbers

Session 5: **Guided Practice** (We Do Together – Cont.)

3.

How many are in each equal group?

$$10\overline{)6257}$$

4.

How many are in each equal group?

$$16\overline{)2880}$$

Learning Target: I will divide four-digit whole numbers

Session 5: Guided Practice (You Do Together)

You Do Together: (As a class, or in small groups)

➢ Students take turns leading and repeat the steps to divide the numbers.

5.

How many are in each equal group?

$$10\overline{)8750}$$

6.

How many are in each equal group?

$$12\overline{)2904}$$

Learning Target: I will divide four-digit whole numbers

Session 5: **Guided Practice** (You Do Together – Cont.)

7.

How many are in each equal group?

$$10 \overline{\smash{)}\ 5237}$$

8.

How many are in each equal group?

$$15 \overline{\smash{)}\ 6870}$$

Session 5: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

➢ What did I learn today about dividing four-digit whole numbers?

➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form E

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $5\overline{)3420}$	**2.** $3\overline{)2442}$
3. $10\overline{)3940}$	**4.** $12\overline{)5124}$

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

Josh ordered 3240 golf balls for his pro shop that will be shipped in 15 boxes of equal amounts. How many golf balls will be shipped in each box?

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

Josh ordered 3240 golf balls for his pro shop that will be shipped in 15 boxes of equal amounts. How many golf balls will be shipped in each box?

Prepare to Divide	*Write and understand the division problem.* *List the multiples of 15.*	*15 boxes of ___ is 3240 total golf balls?* 15 x 1 = 15 15 x 2 = 30 15 x 3 = 45 15 x 4 = 60 15 x 5 = 75 15 x 6 = 90 15 x 7 = 105 15 x 8 = 120 15 x 9 = 135 15 x 10 = 150 $15\overline{)3240}$
Find the Sub-Totals in each box	*Find how many **thousands** are in each box. (0)* *Find how many **hundreds** are in each box. (2)* *Find how many golf balls remain to divide. (240)*	*15 boxes of ___ is 3240 total golf balls?* 15 x 1 = 15 15 x 2 = 30 15 x 3 = 45 15 x 4 = 60 15 x 5 = 75 15 x 6 = 90 15 x 7 = 105 15 x 8 = 120 15 x 9 = 135 15 x 10 = 150 $\quad\quad\; 200$ $15\overline{)3240}$ $\;-3000$ $\quad\; 240$
	*Find how many **tens** are in each box. (1)* *Find how many golf balls remain to divide. (90)*	*15 boxes of ___ is 3240 total golf balls?* 15 x 1 = 15 15 x 2 = 30 15 x 3 = 45 15 x 4 = 60 15 x 5 = 75 15 x 6 = 90 15 x 7 = 105 15 x 8 = 120 15 x 9 = 135 15 x 10 = 150 $\quad\quad\; 10$ $\quad\quad 200$ $15\overline{)3240}$ $\;-3000$ $\quad\; 240$ $\;-\;150$ $\quad\quad 90$
	*Find how many **ones** are in each box. (6)* *Find how many golf balls remain to divide. (0)*	*15 boxes of ___ is 3240 total golf balls?* 15 x 1 = 15 15 x 2 = 30 15 x 3 = 45 15 x 4 = 60 15 x 5 = 75 15 x 6 = 90 15 x 7 = 105 15 x 8 = 120 15 x 9 = 135 15 x 10 = 150 $\quad\quad\; 6$ $\quad\quad 10$ $\quad\quad 200$ $15\overline{)3240}$ $\;-3000$ $\quad\; 240$ $\;-\;150$ $\quad\quad 90$ $\;-\;\;90$ $\quad\quad\;\; 0$
Find the total in each box	*Find how many total golf balls are in each box. (216)*	*15 boxes of ___ is 3240 total golf balls?* 15 x 1 = 15 15 x 2 = 30 15 x 3 = 45 15 x 4 = 60 15 x 5 = 75 15 x 6 = 90 15 x 7 = 105 15 x 8 = 120 15 x 9 = 135 15 x 10 = 150 $\quad\quad\; 6$ $\quad\quad 10\;\;\; \mathbf{216}$ $\quad\quad 200$ $15\overline{)3240}$ $\;-3000$ $\quad\; 240$ $\;-\;150$ $\quad\quad 90$ $\;-\;\;90$ $\quad\quad\;\; 0$

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

Josh ordered 3240 golf balls for his pro shop that will be shipped in 15 boxes of equal amounts. How many golf balls will be shipped in each box?

First, it is important to know what the problem is about.

This problem is about a Josh ordering golf balls for his pro shop.

Second, I need to determine what I need to find.

I need to find the number of golf balls shipped in each box.

Third, I need to determine what I know.

I know that Josh ordered 3240 golf balls that will be shipped in 15 boxes of equal amounts.

Fourth, I need to figure out what I can try.

This time, I am going to use my understanding of place-value to help me divide 3240 by 15.

I will begin by writing the problem...3240 divided by 15...and how I understand it. *(Write the division problem and "15 boxes of ___ is 3240 total golf balls?")*

To make finding the sub-totals easier, I will list the multiples of 15...
15 x 1 = 15...15 x 2 = 30...15 x 3 = 45...
(Continue listing each multiple up to 15 x 10 = 150).

15 boxes of ___ is 3240 total golf balls?
15 x 1 = 15
15 x 2 = 30
15 x 3 = 45
15 x 4 = 60
15 x 5 = 75
15 x 6 = 90
15 x 7 = 105
15 x 8 = 120
15 x 9 = 135
15 x 10 = 150

$$
\begin{array}{r}
6 \\
10 \\
200
\end{array} \Big] \; 216
$$

$$
15 \overline{) 3240}
$$
$$
\underline{-\,3000}
$$
$$
240
$$
$$
\underline{-\,150}
$$
$$
90
$$
$$
\underline{-\,90}
$$
$$
0
$$

Now I am ready to find how many thousands of golf balls will be in each of the 15 boxes.

There are only 3 thousands to be shared among 15 boxes.
(Point to the 15 and underline the digit "3" in the division problem.)

I cannot share a thousand with each of the boxes, so I will need to combine the thousands with the hundreds to find my first sub-total in each box.

Next, I will find how many hundreds of golf balls will be in each box.
(Underline the digit "2" in the division problem.)

To find how many <u>hundreds</u> **are in each of the 15 groups, I need to find..."15 times how many** <u>hundreds</u> **gets me close to, but not greater than 34 hundreds?"** *(Point to the 15 and underline the digits "32" within 3240.)*

I see that 15 times 2 is 30...so 15 times 2 hundreds is 30 hundreds...which is equal to 3000.
(Point to "15 x 2 = 30". Then, write "200" above the 3240.)

I need to find how many golf balls remain from the original 3240 before I can find the number of tens in each box.

I shared 3000 golf balls in the 15 boxes so far...so I need to subtract 3000 from 3240 to find how much remains.
(Write "– 3000" below the 3240.)

3240 minus 3000 is equal to 240.
(Write "240" below the "– 3000".)

Learning Target: I will divide four-digit whole numbers   **Readiness** for dividing multi-digit decimals

15 boxes of ____ is 3240 total golf balls?

15 x 1 = 15
15 x 2 = 30
15 x 3 = 45
15 x 4 = 60
15 x 5 = 75
15 x 6 = 90
15 x 7 = 105
15 x 8 = 120
15 x 9 = 135
15 x 10 = 150

$$
\begin{array}{r}
6 \\
1\,0 \\
2\,0\,0 \\
\end{array}
\bigg]\ \textbf{\textit{216}}
$$

$$
\begin{array}{r}
15\,\overline{)\,3240} \\
-\,3000 \\
\hline
240 \\
-\,\ \ 150 \\
\hline
90 \\
-\,\ \ \ \ 90 \\
\hline
0
\end{array}
$$

To find how many <u>tens</u> are in each of the 15 boxes, I need to find…"15 times how many <u>tens</u> gets me close to, but not greater than 24 tens?" *(Point to the 15 and underline the digits "24" under "– 3000".)*

I see that 15 times 1 is 15…so 15 times 1 ten is 15 tens…which is equal to 150.
(Point to "15 x 2 = 30" in the list. Then, write "10" above the 200.)

I need to find how many golf balls remain from the 240 before I can find the number of ones in each box.

I shared 150 additional golf balls among the 15 boxes…so I need to subtract 150 from 240 to find how many remain. *(Write "– 150" below the 240.)*

240 minus 150 is equal to 90.
(Write "90" below the "– 150".)

To find how many <u>ones</u> are in each of the 15 boxes, I need to find…"15 times how many <u>ones</u> get me close to, but not greater than 90?" *(Point to the 90 under "– 150".)*

I see that 15 times 6 is 90.
(Point to "15 x 6 = 90" in the list. Then, write "6" above the 10.)

I need to verify that no more golf balls remain to be divided.

I just shared 90 more golf balls among the 15 boxes…so I need to subtract 90 from the 90 that remained.
(Write "– 90" below the 90.)

90 minus 90 equals 0.
(Write "0" below the – 90.)

To find the total number of golf balls in each of the 15 boxes I will add the number of hundreds, tens and ones in each box…200 plus 10 plus 6 is equal to 216.
(Write a "]" and "216".)

Last, I need to make sure that my answer makes sense.

I found that 216 golf balls would be in each box. It makes sense because I represented this "equal groups" situation as division problem. Then, I used unknown multiplication to help me find the total number of golf balls shared in each box.

Learning Target: I will divide four-digit whole numbers

Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)

➢ Say the problem and use place-value understanding to divide the multi-digit numbers.

1. $10 \overline{)3427}$	**2.** $15 \overline{)5280}$
3. $10 \overline{)8653}$	**4.** $12 \overline{)6456}$

Learning Target: I will divide four-digit whole numbers

Session 6: Guided Practice (We Do)

You Do Together: (As a class, or in small groups)

➢ Students take turns leading and repeat the steps to divide the numbers.

5. $10 \overline{)6195}$	**6.** $14 \overline{)2296}$
7. $10 \overline{)9287}$	**8.** $13 \overline{)4745}$

Name _____ Date _____

Learning Target: I will divide four-digit whole numbers

Session 6: Guided Practice (We Do – Visual Support)

We Do Together: (Teacher Actions)

➢ Say the problem and use place-value understanding to divide the multi-digit numbers.

---

1. *10 groups of ____ is equal to 3427?*

$$
\begin{array}{c}
2 \\
40 \\
300
\end{array}\Big] \textbf{\textit{342 R 7}}
$$

$10) \overline{3427}$

10 x 1 = 10   − 3000
10 x 2 = 20   427
10 x 3 = 30   − 400
10 x 4 = 40   27
10 x 5 = 50   − 20
10 x 6 = 60   7
10 x 7 = 70
10 x 8 = 80
10 x 9 = 90
10 x 10 = 100

---

2. *15 groups of ____ is equal to 5280?*

$$
\begin{array}{c}
4 \\
50 \\
300
\end{array}\Big] \textbf{\textit{354}}
$$

$15) \overline{5310}$

15 x 1 = 15   − 4500
15 x 2 = 30   810
15 x 3 = 45   − 750
15 x 4 = 60   60
15 x 5 = 75   − 60
15 x 6 = 90   0
15 x 7 = 105
15 x 8 = 120
15 x 9 = 135
15 x 10 = 150

---

3. *10 groups of ____ is equal to 3427?*

$$
\begin{array}{c}
5 \\
60 \\
800
\end{array}\Big] \textbf{\textit{865 R 3}}
$$

$10) \overline{8653}$

15 x 1 = 15   − 8000
15 x 2 = 30   653
15 x 3 = 45   − 600
15 x 4 = 60   53
15 x 5 = 75   − 50
15 x 6 = 90   3
15 x 7 = 105
15 x 8 = 120
15 x 9 = 135
15 x 10 = 150

---

4. *10 groups of ____ is equal to 3427?*

$$
\begin{array}{c}
8 \\
30 \\
500
\end{array}\Big] \textbf{\textit{538}}
$$

$12) \overline{6456}$

12 x 1 = 12   − 6000
12 x 2 = 24   456
12 x 3 = 36   − 360
12 x 4 = 48   96
12 x 5 = 60   − 96
12 x 6 = 72   0
12 x 7 = 84
12 x 8 = 96
12 x 9 = 108
12 x 10 = 120

Session 6: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

➢ What did I learn today about dividing four-digit whole numbers?

➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form F

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $4\overline{)3428}$	**2.** $6\overline{)5478}$
3. $10\overline{)4150}$	**4.** $13\overline{)4576}$

Learning Target: I will divide four-digit whole numbers

Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- ➢ Say the problem and use place-value understanding to divide the multi-digit numbers.

1. $10\overline{)3920}$	**2.** $17\overline{)5372}$
3. $14\overline{)2002}$	**4.** $13\overline{)4511}$

Learning Target: I will divide four-digit whole numbers

Session 7: Guided Practice (We Do)

You Do Together: (As a class, or in small groups)

> ➤ Students take turns leading and repeat the steps to divide the numbers.

5. $10 \overline{) 4280}$	**6.** $15 \overline{) 2430}$
7. $10 \overline{) 9306}$	**8.** $12 \overline{) 4752}$

Session 7: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

➢ What did I learn today about dividing four-digit whole numbers?

➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $3\overline{)2934}$	**2.** $8\overline{)7536}$
3. $10\overline{)3230}$	**4.** $14\overline{)4578}$

Learning Target: I will divide four-digit whole numbers

Session 8: Guided Practice (We Do)

We Do Together: (Teacher Actions)

➢ Say the problem and use place-value understanding to divide the multi-digit numbers.

1. $10 \overline{\smash{)}4372}$	**2.** $15 \overline{\smash{)}5280}$
3. $12 \overline{\smash{)}6816}$	**4.** $17 \overline{\smash{)}6562}$

Learning Target: I will divide four-digit whole numbers

Session 8: Guided Practice (We Do)

You Do Together: (As a class, or in small groups)

➢ Students take turns leading and repeat the steps to divide the numbers.

5. $10\overline{)1680}$	**6.** $14\overline{)2506}$
7. $15\overline{)7935}$	**8.** $13\overline{)5694}$

Session 8: Self-Reflection

Learning Target: I will divide four-digit whole numbers

Briefly discuss student responses

➢ What did I learn today about dividing four-digit whole numbers?

➢ How confident do I feel about dividing four-digit whole numbers on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form H

Name_____ Date_____

Learning Target: I will divide four-digit numbers.

Directions: Write the answer to each problem. (Work time: 5 minutes)

1. $4\overline{)2788}$	**2.** $7\overline{)3724}$
3. $10\overline{)5360}$	**4.** $13\overline{)3692}$

Independent Practice

Learning Target: I will divide four-digit whole numbers

Title of Game: Build the Greater Quotient

Number of Players: 2

Objective: To build the greatest quotient.

Materials: 1 set of 1-digit number cards <u>and</u> 1 recording sheet per player.

Directions:

➢ Each player…

- o Find the "1" and set it aside to be part of each divisor.

- o Shuffle a set of Digit-cards and set in a pile face down on the table.

- o Choose the top 5 cards.

- o Create and find the quotient of a 4-digit by 2-digit division problem on their recording sheet.
  - ▪ Always use the "1" digit-card to create a divisor between 10 and 19.

- o Verify each answer by checking it with a calculator.
  - ▪ For each incorrect answer, use a drawing to find the error and correct the recording sheet.

- o Assign points for the round. (0, 1, or 2 points are possible.)
  - ▪ Each player can earn 1 point for having a correct quotient.
  - ▪ The player with the greatest quotient receives 1 point.

- o Shuffle all of the cards together and repeat to see who wins 2 out of 3 points for each game.

Learning Target: I will divide four-digit whole numbers

Independent Practice: Build the Greater Quotient
(Recording Sheet)

Game 1	Game 2
Round 1	**Round 1**
$1\underline{}\overline{)}$	$1\underline{}\overline{)}$
Round 2	**Round 2**
$1\underline{}\overline{)}$	$1\underline{}\overline{)}$

0	1	2	3	4
5	6	7	8	9
0	1	2	3	4
5	6	7	8	9
0	1	2	3	4
5	6	7	8	9

Questions for Solving Word Problems

Q₁
What is the problem about?

Q₂
What do I need to find?

Q₃
What do I know?

Q₄
What can I try?

Q₅
Does my answer make sense?

Q₁. What is the problem about?

Q₂. What do I need to find?

Q₃. What do I know?

Q₄. What can I try?

Q₅. Does my answer make sense?