

# 6<sup>th</sup> Grade Tier 2 Intervention Lessons

Readiness Standard 3 - 5.NBT.6

Learning Target: I will divide four-digit numbers

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

# **Table of Contents**

Session 1: Planning Guide	p. 4
Session 1: Re-engagement Lesson Resources	p. 5-13
Sessions 2 through 8: Planning Guide	p.14
Sessions 2 through 8: Lesson Resources	p. 15-65
Independent Practice Game: "Build the Greater Product"	p. 66-68
Classroom Poster: Questions for Solving Word Problems	p. 69
Tier 1 Support Classroom Poster: Steps for Solving Word Problems	p. 70

### IES Recommendations for Tier 2 and 3 intervention lessons:

<ol> <li>Instructional materials for students receiving interventions should focus intensely on in-depth treatment of whole numbers in kindergar- ten through grade 5 and on rational numbers in grades 4 through 8.</li> <li>These materials should be selected by committee.</li> </ol>	Low
<ol> <li>Instruction during the intervention should be explicit and systematic.         This includes providing models of proficient problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review.     </li> </ol>	Strong
4. Interventions should include instruction on solving word problems that is based on common underlying structures.	Strong
<ol> <li>Intervention materials should include opportunities for students to work with visual representations of mathematical ideas and interven- tionists should be proficient in the use of visual representations of mathematical ideas.</li> </ol>	Moderate
6. Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts.	Moderate
7. Monitor the progress of students receiving supplemental instruction and other students who are at risk.	Low
8. Include motivational strategies in tier 2 and tier 3 interventions.	Low

(Institute of Educational Sciences, Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools, 2009, p. 6)

### Gradual release of responsibility model

# Focus Lesson "I do it" Guided Instruction Collaborative "You do it together" Independent "You do it alone"

Figure 1

(Dr. Douglas Fisher, Effective Use of the Gradual Release of Responsibility Model)



# Planning Guide: Session 1

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**Learning Target:** I will divide four-digit whole numbers

**Readiness** for dividing multi-digit decimals

Recommended Actions		
Beginning (15 min.)	<ul> <li>Review the readiness standard with the intervention group using the Guided Review</li> <li>Introduce the learning target and why it is important for future learning</li> <li>Read each question on the Guided Review and ask students to share what they remember from the previous school year.</li> </ul>	
Middle (5 min.)	<ul> <li>Ask students to <u>reflect</u> on their progress towards the learning target</li> <li>What did I remember about the learning target?</li> <li>What did I learn today about the learning target?</li> <li>How confident do I feel about doing the learning target on my own?</li> </ul>	
<b>End</b> (10 min.)	<ul> <li>Assess each student's progress using Quick Check – Form A</li> <li>Guide students to self-correct their Quick Check – Form A</li> <li>Guide students to chart their progress by recording the date and Quick Check score in their Growth Chart</li> <li>Collect each student's Quick Check and Growth Chart</li> </ul>	
After	<ul> <li>Create sub-groups to differentiate the middle of sessions 2 through 8</li> <li>Group 1 – Include students who did not meet the learning goal</li> <li>Group 2 – Include students who met or exceeded the learning goal</li> </ul>	



# 6<sup>th</sup> Grade Fall Guided Review

Readiness Standard 3 - 5.NBT.6

Date



# 6<sup>th</sup> Grade Fall Guided Review

Readiness Standard 3 - 5.NBT.6 (continued)

3.	
	14 )2, 4 9 2



# 6<sup>th</sup> Grade Winter Guided Review

Readiness Standard 3 - 5.NBT.6

Name	Date
Learning Target: I will divide four-digit numbers.	
1.	
4) 2,372	
2.	
5) 7,045	



# 6<sup>th</sup> Grade Winter Guided Review

Readiness Standard 3 - 5.NBT.6 (continued)

3.				
	12 ) 1, 9 4 4			
1				
1				
1				



# **6<sup>th</sup> Grade Spring Guided Review**

Readiness Standard 3 - 5.NBT.6

Name	Date
<b>Learning Target:</b> I will divide four-digit numbers.	
1.	
5) 2,285	
2	
4) 9,652	

Readiness Standard 3 - 5.NBT.6 (continued)

3	
J	•



# **Session 1: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**Learning Target:** I will divide four-digit whole numbers

Briefly discuss student responses

- ➤ What did I remember about dividing four-digit whole numbers?
- ➤ 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**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date
Learning Target: I will divide four-digit numb	pers.
<b>Directions:</b> Write the answer to each proble	m. (Work time: 5 minutes)
1.	2.
5\2420	2\2112
5) 3420	3) 2442
3.	4.
10) 3940	12) 5124



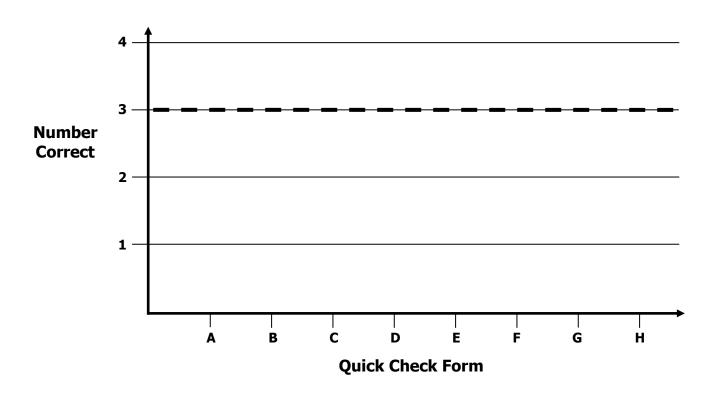
# **Growth Chart**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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:		



# Planning Guide: Sessions 2 Through 8

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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 and ask each student to set a goal.				
Middle (15 min.)	Group 1: Students who scored below the learning goal on the previous Quick Check.  Group 2: (Students who met the learning goal)				
	<ul> <li>Model solving a word problem – "I do"</li> <li>Guided Practice – "We do"</li> </ul>	➤ Independent practice — "You do alone"			
	Session 2: Divide multi-digit numbers using base-ten blocks and place-value cards.	Activity 1: "Build the Greater Quotient"			
	Session 3: Divide multi-digit numbers using area model drawings and sub-totals.	(Look for additional activities in 5 <sup>th</sup> grade core instruction resources.)			
	Session 4: Divide multi-digit numbers using place-value understanding.				
<b>End</b> (10 min.)	<ul> <li>Bring the students back together.</li> <li>Ask students to reflect on their progress towards the learning target         <ul> <li>What did I learn today about dividing four-digit whole numbers?</li> <li>How confident do you feel about dividing four-digit whole numbers on my own?</li></ul></li></ul>				
After	<ul> <li>Regroup students to differentiate the middle of sessions 3 through 8</li> <li>Promote students who met the learning goal to group 2</li> <li>Exit students who met the learning goal for a third time</li> <li>Problem solve with a team to plan additional support for students who did not exit</li> </ul>				



# Session 2: Modeling (I Do)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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?



# **Session 2: Modeling** (I Do – Visual Support)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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)	Division Mat  First was beautiful and if the second state of the s
cked	Find how many <b>tens</b> each person picked. (2)	2 O more that there is the the there is the the there is
Find the Sub-Totals the each person picked	Ungroup the ten into 10 ones.	2 O
Ē	Find how many <b>ones</b> each person picked. (6)	9 2
Find the total that each person picked	Find how many apples each person picked. (23)	Division N 2 3  Nation to Nation Origin  1



# Session 2: Modeling (I Do - Teacher Notes)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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.)



(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.)

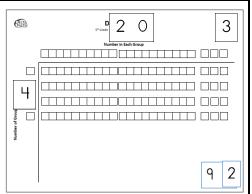
### It looks like each person picked another 3 apples.

(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.





# Place-Value Cards (1 → 100)

	6	2	0	6	O
2	7	3	0	7	0
3	8		0	8	O
L	9	5	O	9	O
5		O		O	O
<b>L</b> ess Than	Sreater Than	<b>E</b> qual to	+ -	- X	•



# Place-Value Cards (200 → 900)

**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	O	O
L	0	O	5	O	O
6	0	O	7	0	O
8	0	0	9	0	0



# **Modeling & Guided Practice Cards**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Han for Maria Para	
3 \ 9 2	
Use for Problem 1 $4\sqrt{56}$	$3 \overline{\smash{\big)} 4 7}^{\text{Use for Problem 2}}$
Use for Problem 3 $5)130$	Use for Problem 4 $4 \int 152$
Use for Problem 5 $5 ) 62$	Use for Problem 6 $3\sqrt{48}$
Use for Problem 7 $4                                  $	3)117

**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)
- 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.	2.
3)48	6)78
3.	4.
5)130	4) 152

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

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

5.		6.
	5)62	3)72
7.		8.
	4) 112	3) 117



Name \_\_\_\_\_ Date \_\_\_\_

**Learning Target:** I will divide four-digit whole numbers

Readiness for dividing multi-digit decimals

# Session 2: 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. 2. PLITA PLITA 4 8 4. **3.** PELTA 10 3 0 | 5 2



# **Essential Questions for Division**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

➤ How many total objects are in each group?

➤ How many objects are in each group?



# **Session 2: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date
Learning Target: I will divide four-digit number	pers.
<b>Directions:</b> Write the answer to each probler	m. (Work time: 5 minutes)
1.	2.
4)3428	6) 5478
4) 3428	0) 3478
3.	4.
3.	<b>4.</b>
10) 4150	13) 4576



# Session 3: Modeling (I Do)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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.	How many mints are in each case?  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	2
	Find how many <b>thousands</b> are in each case. (0)  Find how many <b>hundreds</b> are in each case. (2)  Find how many mints remain to divide. (432)	How many mints are in each case?  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	2
Find the Sub-Totals in each case	Find how many <b>tens</b> are in each case. (3)  Find how many mints remain to divide. (72)	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	32 00 12
	Find how many <b>ones</b> are in each case. (6)  Find how many mints remain to divide. (0)	12 x 2 = 24     200     30     6     12) 283       12 x 4 = 48     2832     2400     360     72     43       12 x 7 = 84     360     72     73	2 0 0 2
Find the total in each case	Find how many total mints are in each case. (236)	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	00



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

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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  $12 \times 10 = 120$ ).

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.)

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

**Learning Target:** I will divide four-digit whole numbers **Readi** 

**Readiness** for dividing multi-digit decimals

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 subtotal of mints that was shared equally in each case.



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

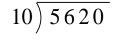
# Session 3: Guided Practice (We Do)

We Do Together: (Teacher Actions)

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

1	
1	•

How many are in each equal group?



2.

How many are in each equal group?

Name	Date

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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

3.	How many are in each equal group?	
		10) 7352
4.	How many are in each equal group?	
		14) 3710



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

# 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) 8160
6.	How many are in each equal group?	12) 2604

Name	Date

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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

7.	How many are in each equal group?	
		10) 2573
8.	How many are in each equal group?	
		15) 6345



Name Date

Learning Target: I will divide four-digit whole numbers

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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

We Do Together: (Teacher Actions)

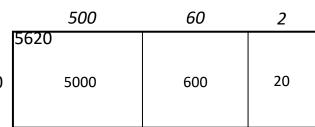
> Say the problem and use an area model drawing to help you divide the numbers.

1.

### How many are in each equal group?

10 groups of:  $10 \times 1 = 10$  $10 \times 2 = 20$  $10 \times 3 = 30$  $10 \times 4 = 40$  $10 \times 5 = 50$  $10 \times 6 = 60$ 

 $10 \times 7 = 70$  $10 \times 8 = 80$  $10 \times 9 = 90$  $10 \times 10 = 100$  10



2

562

293

34

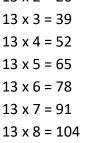
60

20

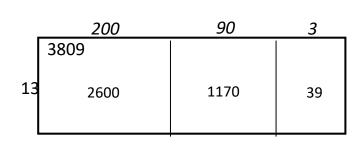
2.

## How many are in each equal group?

13 groups of: 13 x 1 = 13  $13 \times 2 = 26$  $13 \times 3 = 39$ 13 x 4 = 52  $13 \times 5 = 65$  $13 \times 6 = 78$ 



 $13 \times 9 = 117$ 13 x 10 = 130



	90
	200-
13)	3809
<u> </u>	2600
	1209
_	1170
	3 9
_	3 9
	0



# **Session 3: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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

# **Quick Check - Form C**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Date

1.		2.	
	3) 2934	8) 7536	
3.		4.	
	10) 3230	14) 4578	



### Session 4: Modeling (I Do)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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?



### **Session 4: Modeling** (I Do – Visual Support)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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
	Find how many <b>thousands</b> are in each box. (0)  Find how many <b>hundreds</b> 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
Find the Sub-Totals in each box	Find how many <b>tens</b> 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
	Find how many <b>ones</b> are in each box. (6)  Find how many golf balls remain to divide. (0)	15 boxes of is 3240 total golf balls? 6  15 x 1 = 15
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  216  217  218  219  219  216  200  217  218  219  219  219  219  219  210  210  2110



### **Session 4: Modeling** (I Do - Teacher Notes)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**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.	15 boxes of is 3240 total golf balls?	· 67
This time, I am going to use my understanding of place-value	15 x 1 = 15 15 x 2 = 30	10 <b>216</b>
to help me divide 3240 by 15.	15 x 3 = 45	15\3240
I will begin by writing the problem3240 divided by 15and	15 x 4 = 60 15 x 5 = 75	<u>- 3000</u>
how I understand it. (Write the division problem and	15 x 6 = 90	<u>24</u> 0 - 150
"15 boxes of is 3240 total golf balls?")	15 x 7 = 105 15 x 8 = 120	9 0
To make finding the sub-totals easier, I will list the multiples of 15	15 x 9 = 135 15 x 10 = 150	<u>- 90</u> 0

**15 x 1 = 15...15 x 2 = 30...15 x 3 = 45...** (Continue listing each multiple up to 15 x 10 = 150).

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 "<u>- 3000</u>".)

© OAISD, November 2018



# Session 4: Modeling (I Do - Teacher Notes Cont.)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**Learning Target:** I will divide four-digit whole numbers

**Readiness** for dividing multi-digit decimals

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 "<u>- 3000</u>".)

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 "<u>- 150</u>".)

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 "<u>- 90</u>" 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.

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

### Session 4: Guided Practice (We Do)

We Do Together: (Teacher Actions)

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

1.

2.

10) 3427

15)5280

**3.** 

4.

10)8653

12)6456



Name Date
-----------

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

## Session 4: 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) 6195

6.

8.

14) 2296

7.

10) 9287

13) 4745



Name \_\_\_\_\_ Date \_\_\_\_

**Learning Target:** I will divide four-digit whole numbers

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

### **Session 4: 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 g	groups of is equal to 3427?
	2 7
	40   <b>342 R 7</b>
	300
10 x 1 = 10	10)3427
10 x 2 = 20	<u> - 3000</u>
10 x 3 = 30	427
10 x 4 = 40	- 400
10 x 5 = 50	2 7
10 x 6 = 60	- 20
10 x 7 = 70	7
10 x 8 = 80	
10 x 9 = 90	
10 x 10 = 100	

3.	10 groups of is equal to 3427?
	60 <b>865 R 3</b>
	800
15 x 1 = 15	10) 8653
15 x 2 = 30	<u>–´ 8000</u>
15 x 3 = 45	653
15 x 4 = 60	- 600
15 x 5 = 75	53
15 x 6 = 90	- 50
15 x 7 = 10	
15 x 8 = 120	•
15 x 9 = 13	5
15 x 10 = 1	50

4. 10	0 groups of is equ 8	al to 3427? 1
	3 0	538
		330
	500_	J
12 x 1 = 12	12) 6456	
12 x 2 = 24	<u>- 6000</u>	
12 x 3 = 36	456	
12 x 4 = 48	- 360	
12 x 5 = 60	9 6	
12 x 6 = 72	- 96	
12 x 7 = 84	0	
12 x 8 = 96		
12 x 9 = 108		
12 x 10 = 12	0	



#### **Session 4: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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 D**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date
<b>Learning Target:</b> I will divide four-digit numbers.	
<b>Directions:</b> Write the answer to each problem. (V	Nork time: 5 minutes)
1.	2.
4) 2788	7) 3724
3.	4.
10) 5360	13) 3692
/	/



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

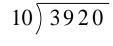
### Session 5: Guided Practice (We Do)

We Do Together: (Teacher Actions)

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

4	
1	_

How many are in each equal group?



2.

How many are in each equal group?



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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

3.	How many are in each equal group?	
		10) 8273
4.		
4.	How many are in each equal group?	
4.	How many are in each equal group?	13) 3471
4.	How many are in each equal group?	13) 3471
4.	How many are in each equal group?	13) 3471
4.	How many are in each equal group?	13) 3471
4.	How many are in each equal group?	13) 3471
4.	How many are in each equal group?	13) 3471



6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

# 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) 6280
6.	How many are in each equal group?	17) 2601



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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

7.	How many are in each equal group?	
		10) 2753
8.	How many are in each equal group?	
		15) 5370



#### **Session 5: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date
Learning Target: I will divide four-digit numb	pers.
<b>Directions:</b> Write the answer to each proble	m. (Work time: 5 minutes)
1.	2.
5) 3420	3) 2442
3) 3420	3) 2442
3.	4.
4.2 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
10) 3940	12) 5124



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

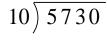
## Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)

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

1	
ı	_
_	•

How many are in each equal group?



**2.** 

How many are in each equal group?




Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

## **Session 6: Guided Practice** (We Do Together – Cont.)

3.	How many are in each equal group?	
		10) 6257
4.	How many are in each equal group?	
		16)2880



6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

# Session 6: 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) 8750
6.	How many are in each equal group?	12) 2904



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

## **Session 6: Guided Practice** (You Do Together – Cont.)

7.	How many are in each equal group?	
		10) 5237
8.		
<b>0.</b>	How many are in each equal group?	
		15) 6870



#### **Session 6: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date	
Learning Target: I will divide four-digit num	nbers.	
<b>Directions:</b> Write the answer to each probl	lem. (Work time: 5 minutes)	
1.	2.	
4) 3428	6) 5478	
3.	4.	
12 \		
10) 4150	13) 4576	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

# 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.

2.

10) 3920

17) 5372

**3.** 

4.

14)2002

13) 4511



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

## 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.

6.

10)4280

15) 2430

7.

8.

10) 9306

12)4752



#### **Session 7: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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 G**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date
Learning Target: I will divide four-digit number	ers.
<b>Directions:</b> Write the answer to each problem	1. (Work time: 5 minutes)
1.	2.
3) 2934	8) 7536
3.	4.
10) 3230	14) 4578



Name	Date	

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

## 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.

2.

10)4372

15) 5280

**3.** 

4.

12) 6816

17)6562



Name	Date

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

## 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.

6.

 $10)\overline{1680}$ 

14)2506

7.

8.

15) 7935

13) 5694



#### **Session 8: Self-Reflection**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

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**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Name	Date
<b>Learning Target:</b> I will divide four-digit numbers.	
<b>Directions:</b> Write the answer to each problem. (V	Nork time: 5 minutes)
1.	2.
4) 2788	7) 3724
3.	4.
10) 5360	13) 3692
/	/



### **Independent Practice**

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

**Learning Target:** I will divide four-digit whole numbers

Title of Game: Build the Greater Quotient

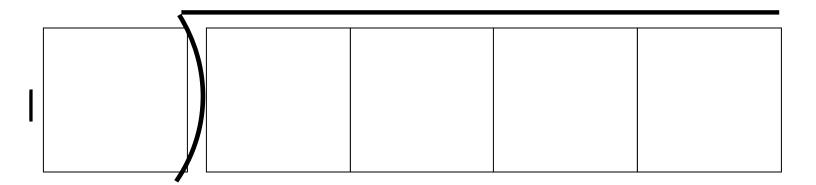
Number of Players: 2

**Objective:** To build the greatest quotient.

Materials: 1 set of 1-digit number cards and 1 recording sheet per player.

#### **Directions:**

- Each player...
  - Find the "1" and set it aside to be part of each divisor.
  - Shuffle a set of Digit-cards and set in a pile face down on the table.
  - 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.
  - 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.
  - 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.





Name	Date
------	------

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

# **Independent Practice: Build the Greater Quotient**

(Recording Sheet)

Game 1	Game 2
Round 1	Round 1
1)	1)
/	/
Round 2	Round 2
1)	1)



# **Digit-Cards** (3 sets)

6<sup>th</sup> Grade - Readiness Standard 3 - 5.NBT.6

Ο		2	3	4
5	6	7	8	9
0		2	3	4
5	6	7	8	<u>9</u>
0		2	3	4
5	6	7	8	9



# **Questions for Solving Word Problems**

$Q_1$	
	What is the problem about?
$Q_2$	
	What do I need to find?
$Q_3$	
	What do I know?
Q <sub>4</sub>	
	What can I try?
$Q_5$	
	Does my answer make sense?



# **Steps for Solving Word Problems**

Q <sub>1</sub> . What is the problem about?	
Q <sub>2</sub> . What do I need to find?	
Q <sub>3</sub> . What do I know?	
Q3. What do I know:	
Q <sub>4</sub> . What can I try?	
Qui vinac con i ci y i	
Q <sub>5</sub> . Does my answer make sense?	