

# Division

# Unit

# 4<sup>th</sup> Grade

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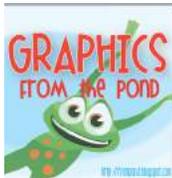
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# TO The Teacher

Thank you for purchasing this resource! Within it you will find a complete unit for teaching the fourth grade standards for division including pre-assessment, content vocabulary, daily warm-ups and exit tickets, daily lessons with student activities, and a post assessment.

While this unit is laid out over a eleven day time span do not feel that you must rigidly stick to the timeline. As a teacher you know what is best for your students, and should follow your gut, as some classes may require more time to reach understanding of a concept.

To save on ink and decrease prep time, every page of this unit is created in black and white. To create a more colorful unit print or copy on color paper.

# Standards

## TEKS

- 4.4E** represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations
- 4.4F** use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor
- 4.4G** round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers
- 4.4H** solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders

## CCSS

- 4.NBT.B.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.OA.A.2** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

# ALL ABOUT This Unit

This unit is made up of unique elements that can be used independently or together to provide a complete unit of math instruction.

## **Content Vocabulary**

Vocabulary for this division unit is included in a few forms.

- Word wall cards make it easy to add your content vocabulary to your word wall
- The word and definition list make a great reference for student math notebooks and teachers alike
  - This list is included completed as well as with blank areas for definitions and examples
- Double-sided word and definition cards are great for review and small group remediation

## **Pre-Assessment and Student Standard Checklist**

To be used as an informal assessment to check students' prior knowledge as well as determine any misconceptions. The data that you gather from this pre-assessment can be recorded on the Student Standards Checklists and used to set student learning goals, form small groups, or partner students based on ability. Checklists fit 11 students per page.

# ALL ABOUT This Unit

## DAILY WARM-UPS

Ten days of half-page daily warm-ups are provided along with answer keys. Each day has four standards-based questions for students to think through their learning. A student tracking sheet is also included for students to record their own grow and glow areas. To save paper you may choose to project the warm up each day and have students complete their work in math notebooks.

## EXIT TICKETS

Ten days worth of exit tickets and answer keys, with one question each, are included two to a page for easy copying. Each of the questions is based on how that standard is tested, providing a test bridge and exposing students to test style language. This serves to build familiarity with standardized testing without overwhelming students.

Exit tickets can be checked as a class, or by the teacher. A checklist of questions is included to track how students are doing on their exit tickets.

## ASSESSMENT

An end of unit assessment is included to check for student mastery on the division standards included. This assessment is meant to be used informally. While students should do their best work, it is best to not place too much importance on the test.

# Daily Lessons

Eleven daily lessons are included in this unit.

Each lesson includes:

- Guiding question(s)
- Objectives
- List of necessary materials
- Overview of the lesson
- Student activity sheets when applicable
- Suggestions for small group activity

**Day 1** Pre-assessment & KWL Chart

**Day 2** What is a remainder?

**Day 3** Dividing by 10 and 100

**Day 4** Repeated Subtraction

**Day 5** Regrouping

**Day 6** Partial Quotients

**Day 7** Area Models

**Day 8** Standard Algorithm

**Day 9** Selecting a Strategy

**Day 10** Division Problem Solving

**Day 11** Assessment

# Content Vocabulary

Vocabulary for this division unit is included in a few forms.

- Word wall cards make it easy to add your content vocabulary to your word wall
- The word and definition list make a great reference for student math notebooks and teachers alike
  - This list is included completed as well as with blank areas for definitions and examples
  - TIP: print/copy definition list at 80% to fit perfectly in math notebooks
- Double-sided word and definition cards are great for review and small group remediation
  - To complete these cards print, fold along the dotted line with the word and definition on the outside, then tape or glue to secure the card.

# **multiply**

to find the product of two or more factors

---

# **divide**

to separate into parts or groups

---

# **remainder**

what is left over when finding the quotient

---

# **equation**

a mathematical statement, also known as a number sentence

---

# MULTIPLICATION & DIVISION VOCABULARY

|                              |   |
|------------------------------|---|
| <b>MULTIPLY</b>              | to find the product of two or more factors  |
| <b>divide</b>                | to separate into parts or groups  |
| <b>remainder</b>             | what is left over when finding the quotient   |
| <b>equation</b>              | a mathematical statement, also known as a number sentence   |
| <b>commutative property</b>  | if the order of the factors is changed, the product stays the same  |
| <b>distributive property</b> | if multiplying a number by the sum of numbers, the product will be the same as multiplying by each of the addends |
| <b>associative property</b>  | if three or more factors are multiplied, the order does not change the product                                    |
| <b>algorithm</b>             | process used to solve a mathematical problem  |
| <b>factor</b>                | a number multiplied by another number to find a product   |
| <b>product</b>               | the total when two or more factors are multiplied<br>the answer to a multiplication equation                      |
| <b>dividend</b>              | the number being divided  |
| <b>divisor</b>               | the number of groups being formed from the dividend   |
| <b>quotient</b>              | the size of each group formed from dividing a dividend by a divisor<br>the answer to a division problem           |

**MULTIPLY**

to find the product of two or more factors

**DIVIDE**

to separate into parts or groups

**REMAINDER**

what is left over when finding the quotient

# Answer Key

**1** A box of crayons comes with 178 crayons. The teacher splits the crayons evenly among her three tables. About how many crayons does each table get?

$$180 \div 3 = 60$$

**2** Estimate to solve:  $1,247 \div 5 =$

$$1,250 \div 5 = 250$$

**3**

$$69 \div 3 =$$

$$23$$

**4** Bruce has 56 pieces of candy to share. If he shares them evenly between himself and three friends, how many pieces will each person get?

**14 pieces**

**5**

$$342 \div 6 =$$

$$57$$

**6** Crystal bakes 128 cupcakes for a bake sale. She plans to package them in pairs. How many pairs will she have?

**64 pairs**

**7**  $1,329 \div 3 =$

$$443$$

**8** There are 1,203 students split evenly among 7 grade levels. How many students are in each grade level?

**203 students**

**9** There are 28 cookies to be split amongst 9 students. How many cookies will each student get? What will you do with the remainder?

**Each student will get 3 cookies, and the remainder will be left over.**

**10** There are 187 people waiting to get a golf cart. Each golf cart fits 4 people. How many golf carts are needed? What will you do with the remainder?

**47 golf carts are needed, because you can't leave the last three people behind. The remainder is rounded up.**



# DAILY WARM-UPS

Ten days of half-page daily warm-ups are provided along with answer keys.

Each day has three standards-based questions for students to think through their learning.

A student tracking sheet is also included for students to record their own grow and glow areas.

To save paper you may choose to project the warm up each day and have students complete their work in math notebooks.

Name \_\_\_\_\_

**Representing Division**

Brooke has 63 books to place on a book shelf. There are seven shelves. If she places the same number of books on each shelf, how many books will be on one shelf? Write an equation to represent the problem.

**Four-Digit Dividends**

$$3,987 \div 5 =$$

**Problem Solving**

Xavier counts 148 tires in a parking lot full of cars. If each car has 4 tires, how many cars are in the parking lot?

Name \_\_\_\_\_

**Representing Division**

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$$3,987 \div 5 =$$

**Problem Solving**

Xavier counts 148 tires in a parking lot full of cars. If each car has 4 tires, how many cars are in the parking lot?

# Daily Warm-Up Answer Key

Name \_\_\_\_\_

Division  
Day 1

## Representing Division

Brooke has 63 books to place on a bookshelf. There are seven shelves. If she places the same number of books on each shelf, how many books will be on one shelf? Write an equation to represent the problem.

## Four-Digit Dividends

$$3,987 \div 3 =$$

$$1,329$$

$$63 \div 7 = 9$$

## Problem Solving

Xavier counts 147 tires in a parking lot full of cars. If each car has 4 tires, how many cars are in the parking lot?

**37 cars**

Name \_\_\_\_\_

Division  
Day 2

## Representing Division

Raphael has learned a dance with 96 counts. He breaks it down into eight counts to more easily remember. How many eight counts are there? Draw an array to represent the solution.

## Four-Digit Dividends

$$1,560 \div 5 =$$

$$312$$

## Problem Solving

A theater has rows of 9 seats. There are 84 people waiting to be seated in the theater. How many rows will have people in them?

**10 rows**

Name \_\_\_\_\_

## Personal Daily Warm-Up Tracking Sheet

|               | <b>Representing<br/>Division</b> | <b>Four-Digit<br/>Dividends</b> | <b>Problem<br/>Solving</b> |
|---------------|----------------------------------|---------------------------------|----------------------------|
| <b>Day 1</b>  |                                  |                                 |                            |
| <b>Day 2</b>  |                                  |                                 |                            |
| <b>Day 3</b>  |                                  |                                 |                            |
| <b>Day 4</b>  |                                  |                                 |                            |
| <b>Day 5</b>  |                                  |                                 |                            |
| <b>Day 6</b>  |                                  |                                 |                            |
| <b>Day 7</b>  |                                  |                                 |                            |
| <b>Day 8</b>  |                                  |                                 |                            |
| <b>Day 9</b>  |                                  |                                 |                            |
| <b>Day 10</b> |                                  |                                 |                            |

# Exit Tickets

Ten days worth of exit tickets and answer keys, with one question each, are included two to a page for easy copying.

Each of the questions is based on how that standard is tested, providing a test bridge and exposing students to test style language. This serves to build familiarity with standardized testing without overwhelming students.

Exit tickets can be checked as a class, or by the teacher. A checklist of questions is included to track how students are doing on their exit tickets.

**Exit Ticket**  
**Day 1****Name** \_\_\_\_\_

Ricardo is sharing a box of 25 cookies between himself and 3 friends. Each of the kids will receive the same number of cookies. How many cookies will be leftover after each kid takes their fair share?

- a. 2 cookies
- b. 1 cookie
- c. 21 cookies
- d. 3 cookies

Division

**Exit Ticket**  
**Day 1****Name** \_\_\_\_\_

Ricardo is sharing a box of 25 cookies between himself and 3 friends. Each of the kids will receive the same number of cookies. How many cookies will be leftover after each kid takes their fair share?

- a. 2 cookies
- b. 1 cookie
- c. 21 cookies
- d. 3 cookies

Division

# Exit Ticket Answer Key

|               |          |
|---------------|----------|
| <b>Day 1</b>  | <b>B</b> |
| <b>Day 2</b>  | <b>A</b> |
| <b>Day 3</b>  | <b>C</b> |
| <b>Day 4</b>  | <b>D</b> |
| <b>Day 5</b>  | <b>A</b> |
| <b>Day 6</b>  | <b>B</b> |
| <b>Day 7</b>  | <b>C</b> |
| <b>Day 8</b>  | <b>D</b> |
| <b>Day 9</b>  | <b>A</b> |
| <b>Day 10</b> | <b>B</b> |



# DAILY LESSONS

Eleven daily lessons are included in this unit.

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# Pre-Assessment & KWL Anchor Chart

## **Guiding Question**

How can I show my prior knowledge of division?

## **Materials**

- Pre-assessment
- Anchor chart paper

## **Learning Objective**

We will use our prior knowledge of multiplication and division to build on.

## **Lesson**

Begin by giving students the pre-assessment as a check for prior understanding.

As a class talk about what they already know about division. Together, complete the K part of the KWL chart (example on next page) being sure to prompt students about the strategies that they know as well as math language. Then ask students what they would like to know about division or what questions they may have.

\*\*Instead of completing the KWL chart as a class you may want to have students write their thoughts for each section on a sticky note to display or have teams complete their own charts.

## **Small Group Ideas**

Using student white boards or math journals, review fact families with students. This might be accomplished through rolling dice, pulling playing cards, or generating random numbers. This fact family practice will help students to develop number sense for division.

# KWL Chart Example

| Division KWL   |   |         |
|--|---|---------|
| Know   | Want to Know  | Learned |
| <ul style="list-style-type: none"><li>• related to multiplication</li><li>• separating</li><li>• making groups</li></ul> | <ul style="list-style-type: none"><li>• Is it hard?</li><li>• Are there more than one way?</li><li>• Can multiplication help me?</li><li>• What is a remainder?</li></ul> |         |

# What is a Remainder?

## Guiding Question

What is a remainder?  
Why are remainders important?

## Materials

- Anchor chart paper
- Interpreting Remainders Sort

## Learning Objective

We will interpret remainders in problem solving situations.

**Lesson**

Begin by asking students if they have heard the word remainder before. After student input define a remainder as what is left over when finding the quotient.

Ask students what you do with dinner leftovers. Some ideas may be that they; save them for later, throw them out, add them to the plates and eat them with dinner.

Explain to students know that remainders in division are treated much the same way because they can be rounded, dropped, or used as the solution.

As a class read through the three problem situations provided and determine whether the remainder would be used, rounded, or dropped.

Create an anchor chart of possible situations for each.

For practice, students will sort problem situations based on whether the remainder would be used, rounded, or dropped. These cards will be reused later in the unit for solving.

## Small Group Ideas

Using student white boards or math journals begin the conversation with students on the process of dividing. Give students a simple division problem (example,  $63 \div 3$  or  $46 \div 2$ ) and have them explore how to find the solution. This should serve as a pre-teaching opportunity prepping students for the conversation and lessons to come. Encourage students to find as many ways as possible to check their work by using multiple strategies. When students use a strategy such as repeated subtraction, grouping, the standard algorithm, or partial quotients be sure to name the strategy they are using.

# Anchor Chart Example

## Interpreting Remainders

USE IT

DROP IT

ROUND IT

- How many are left?

- When splitting or sharing items

- When needing to know total to be used i.e. when making trips with people

1

The Tobias Elementary School student council has 30 members who are attending the annual conference. They are taking vans that fit 6 people each. How many vans will they need?

2

Robert and Sue are splitting a box of 23 cookies. How many cookies will each of them get?

3

There are 22 students on a bus. They are sitting 3 to a seat. How many seats will be completely filled?

4

A serving of rice is two cups. If a bag makes 27 cups of rice, how many of the cups would not be part of a serving?

5

There are 76 books waiting to be placed on a shelf. If five books fit on each shelf, how many shelves will be needed to house all the books?

6

A case of water comes with 32 bottles in it. If 6 friends are splitting the case evenly, how many bottles will be left over?

**ROUND IT**

**USE IT**

**DROP IT**

# Interpreting Remainders Sort Answer Key

|             |              |
|-------------|--------------|
| 1. round it | 2. drop it   |
| 3. drop it  | 4. use it    |
| 5. round it | 6. use it    |
| 7. drop it  | 8. round it  |
| 9. drop it  | 10. use it   |
| 11. use it  | 12. drop it  |
| 13. drop it | 14. use it   |
| 15. use it  | 16. round it |
| 17. drop it | 18. use it   |
| 19. drop it | 20. use it   |
| 21. drop it | 22. round it |
| 23. drop it | 24. use it   |

# Answer Key

**1** The fourth grade at Ridgeline Elementary has 120 students split between 6 classes. About how many students are in each class?

$$120 \div 6 = 20$$

**2** Estimate to solve:  $3,597 \div 6 =$

$$3,600 \div 6 = 600$$

**3**

$$72 \div 4 =$$

$$18$$

**4** A bag of dog food has 56 pounds of feed in it. If a dog eats 7 pounds of food a week, how long will the bag last?

**8 WEEKS**

**5**

$$490 \div 5 =$$

$$98$$

**6** A grandma won \$438 in a raffle and decides to split the money evenly among her three grandchildren. How much money will each grandchild receive?

$$\$146$$

**7**  $1,432 \div 8 =$

$$179$$

**8** A concert venue has seats for 2,340 patrons separated evenly into nine sections. How many people can sit in each section?

$$260 \text{ PEOPLE}$$

**9** A box of markers has 12 markers and is being shared by 5 students. How many markers will each student get? What will you do with the remainder?

**Each student will get 2 markers, and the remainder will be left over.**

**10** A talent show is 95 minutes long and has 9 acts. Each act is allowed the same amount of time. How long does each act get?

What will you do with the remainder?  
**Each act will get 10 minutes, and the remainder will be dropped or left over.**