

Multiplication & Division

TEKS Notebook

A Helpful Strategy for Division

38

Learning the process of long division is difficult, especially when you are trying to remember all your division facts. Here is a helpful strategy if you can't remember your facts.

1

A waffle house has 738 bottles of syrup to place on 6 shelves. How many bottles of syrup will be placed on each shelf if they are sorted equally?



Don't know the multiples of 6? Draw six dots and use them to count on to find the next multiple.



You are dividing by 6

List multiples of 6	Which multiple is it?
6	1
12	2
18	3
24	4
30	5
36	6
42	7
48	8
54	9

$$\begin{array}{r} 123 \\ 6 \overline{) 738} \\ \underline{6} \\ 13 \\ \underline{12} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

123 bottles

2

There are 992 juggling balls being shipped. The same number of juggling will be placed into each of 8 boxes. How many juggling balls will be placed in each box?



Draw dots if you need them.



You are dividing by 8

List multiples of 8	Which multiple is it?
8	1
16	2
24	3
32	4
40	5
48	6
56	7
64	8
72	9

$$\begin{array}{r} 124 \\ 8 \overline{) 992} \\ \underline{8} \\ 19 \\ \underline{16} \\ 32 \\ \underline{32} \\ 0 \end{array}$$

124 juggling Balls

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Represent 3 x 1 Multiplication

Multiplication problems can be solved in many ways

Traditional Multiplication

$$\begin{array}{r} 12 \\ 235 \\ \times 4 \\ \hline 940 \end{array}$$



Partial Products

$$\begin{array}{r} 235 \Rightarrow 200 + 30 + 5 \\ \times 4 \quad \times \quad \times \\ \hline 800 \leftarrow 4 \times 200 \\ 120 \leftarrow 4 \times 30 \\ 20 \leftarrow 4 \times 5 \\ \hline 940 \end{array}$$

$$235 \times 4 =$$

Area Model

	200	30	5	
4	$4 \times 200 = 800$	$4 \times 30 = 120$	$4 \times 5 = 20$	

$$\begin{array}{r} 800 \\ + 120 \\ + 20 \\ \hline 940 \end{array}$$

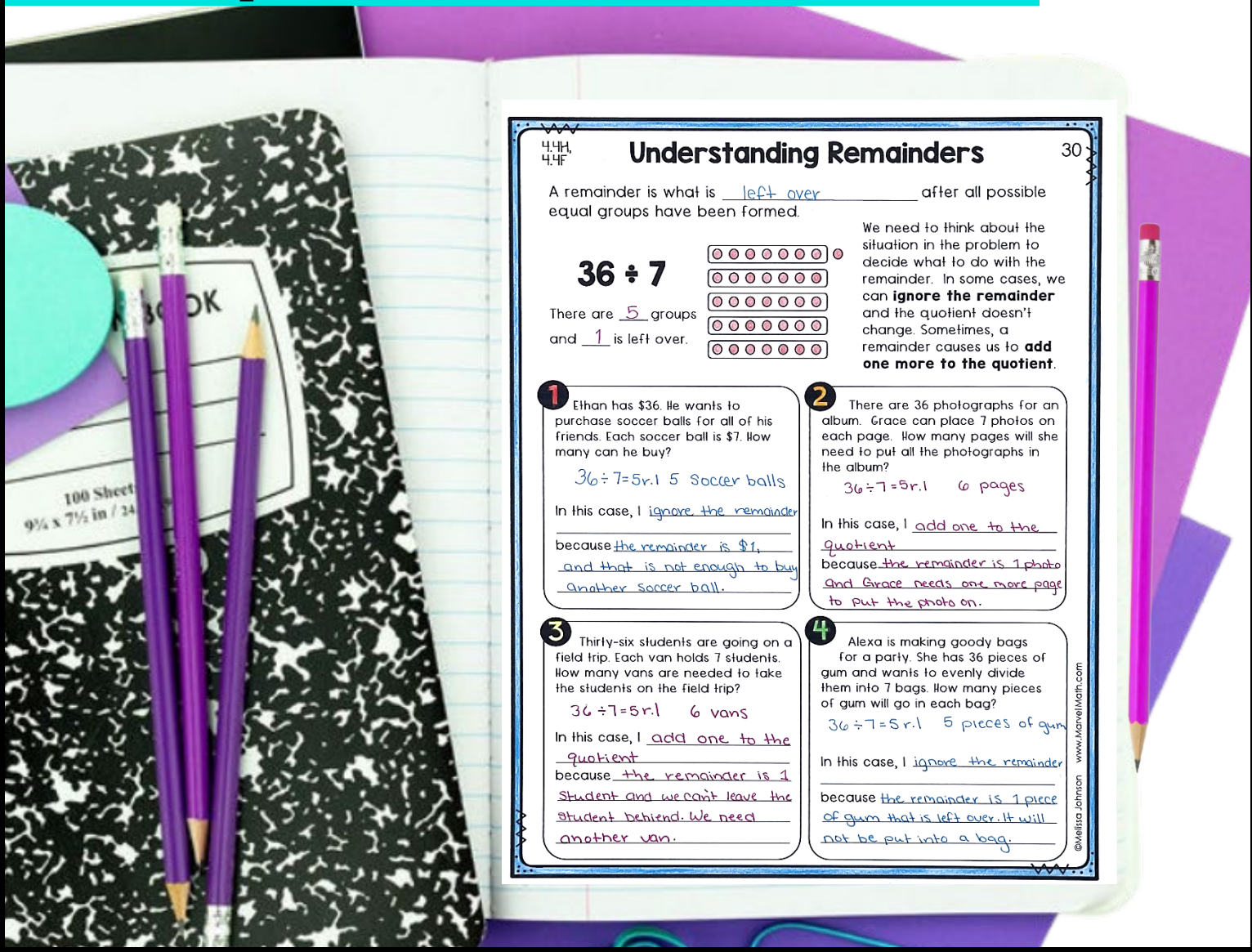
$$235 \times 4 =$$

Distributive Property

$$4 \times (200 + 30 + 5) = (4 \times 200) + (4 \times 30) + (4 \times 5) = 800 + 120 + 20 = 940$$

4th
GRADE

40 Notebook Pages to Introduce each of the Multiplication & Division TEKS



4.4H,
4.4F

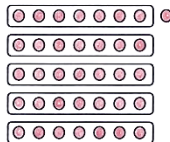
Understanding Remainders

30

A remainder is what is left over after all possible equal groups have been formed.

$$36 \div 7$$

There are 5 groups
and 1 is left over.



We need to think about the situation in the problem to decide what to do with the remainder. In some cases, we can **ignore the remainder** and the quotient doesn't change. Sometimes, a remainder causes us to **add one more to the quotient**.

- 1** Ethan has \$36. He wants to purchase soccer balls for all of his friends. Each soccer ball is \$7. How many can he buy?

$$36 \div 7 = 5 \text{ r. } 1 \quad 5 \text{ Soccer balls}$$

In this case, I ignore the remainder

because the remainder is \$1,
and that is not enough to buy
another soccer ball.

- 2** There are 36 photographs for an album. Grace can place 7 photos on each page. How many pages will she need to put all the photographs in the album?

$$36 \div 7 = 5 \text{ r. } 1 \quad 6 \text{ pages}$$

In this case, I add one to the
quotient
because the remainder is 1 photo
and Grace needs one more page
to put the photo on.

- 3** Thirty-six students are going on a field trip. Each van holds 7 students. How many vans are needed to take the students on the field trip?

$$36 \div 7 = 5 \text{ r. } 1 \quad 6 \text{ vans}$$

In this case, I add one to the
quotient
because the remainder is 1
student and we can't leave the
student behind. We need
another van.

- 4** Alexa is making goody bags for a party. She has 36 pieces of gum and wants to evenly divide them into 7 bags. How many pieces of gum will go in each bag?

$$36 \div 7 = 5 \text{ r. } 1 \quad 5 \text{ pieces of gum}$$

In this case, I ignore the remainder
because the remainder is 1 piece
of gum that is left over. It will
not be put into a bag.

Essential Vocabulary

Section Included

ESSENTIAL MULTIPLICATION & DIVISION VOCABULARY		
Term	Picture or Example	Definition
Multiplication	8×45 8 groups of 45	Making equal groups to find the total
Factors & Product	$6 \times 7 = 42$ ↑ ↑ ↑ factor factor product	Factors are the numbers being multiplied and the product is the answer to a multiplication problem
Partial Products	$\begin{array}{r} 25 \rightarrow (20+5) \\ \times 3 \\ \hline 15 \quad (3 \times 5) \\ + 60 \quad (3 \times 20) \\ \hline 75 \end{array}$	Parts of the product that are found when you multiply by the expanded form of a number
Array	 4×4 4 rows of 4	A rectangular model of a multiplication problem
Area Model	$\begin{array}{ c c } \hline 30 & + 5 \\ \hline 4 \times 30 = 120 & 4 \times 5 = 20 \\ \hline \end{array}$	Models multiplication by showing the two factors as the length and width of a

ESSENTIAL MULTIPLICATION & DIVISION VOCABULARY		
Term	Picture or Example	
Multiplication		
Factors & Product		
Partial Products		
Array		
Area Model		

Easy-to-Use Student Pages

Do I Multiply or Divide?

27

If you know the _____ and you are making equal groups, then you divide.

If you are making equal groups and looking for the total, you need to _____.

- 1** Tamra has \$50 and wants to buy books. Each book is \$10. How many books can she buy?

Do you multiply or divide?

Why?

Solution:



- 2** Tamra wants to buy 50 books. Each book costs \$10. How much will she spend to buy all the books?

Do you multiply or divide?

Why?

Solution:



Do I Multiply or Divide?

28

- 3** Evan wants to buy 40 video games. Each video game is \$20. How much will the video games cost?

Do you multiply or divide?

Why?

Solution:

- 4** Evan has \$200 and wants to buy video games. Each video game is \$20. How many can he purchase?

Do you multiply or divide?

Why?

Solution:



- 5** Matt has 20 boxes. Each box contains 5 baseballs. How many baseballs does he have?

Do you multiply or divide?

Why?

Solution:



- 6** Matt has 20 baseballs and some boxes. He wants to put 5 baseballs in each box. How many boxes will he fill?

Do you multiply or divide?

Why?

Solution:

Resource **Includes**

-  **40 Student Pages**
-  **Pages to introduce all the Multiplication & Division TEKS**
-  **Teacher KEY**
-  **Essential Vocabulary Section**



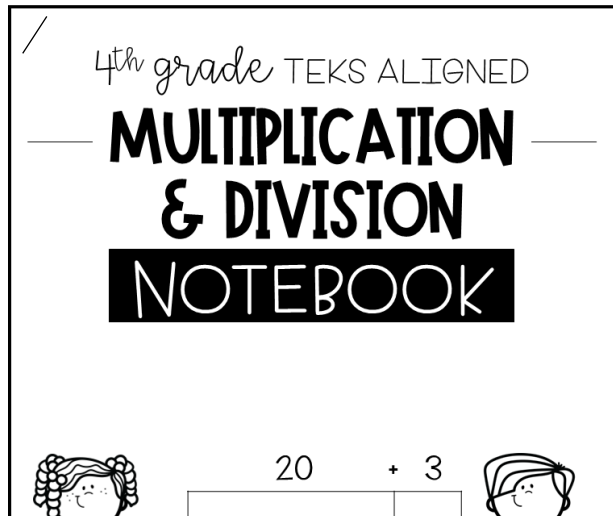
Built for the TEKS

MULTIPLICATION & DIVISION *table of contents*

TOPIC	TEKS	Page(s)
Multiplication & Division Vocabulary		1-4
X 10, x 100, x 1,000 Multiplication with Meaning	4.4B	5
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No Cutting or Gluing Required

- Make stapled packets
- 3-hole punch to use in a binder
- Make the most of class time



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Long Division

Now we will work out the same problem using long division.

Three friends earned \$51 doing yardwork. If they split the money evenly, how much will each person get?

Money for each 

Money left over
r. 

Number of 

Money to share 

Division Steps

Divide ☐ ☐

Multiply ☐ ☐

Subtract ☐ ☐

Compare ☐ ☐

Bring Down ☐

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Or Glue Entire Page in Notebook

4.4D

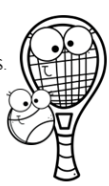
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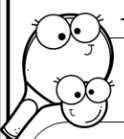
2 x 1 & 3 x 1 Partial Products

Multiplication problems that have a factor with more than 1 digit can be broken apart into smaller multiplication problems.

Write 35 in expanded form.

$$\begin{array}{r} 35 \Rightarrow 30 + 5 \\ \times 4 \quad \times 4 \\ \hline 20 \leftarrow 4 \times 5 \\ + 120 \leftarrow 4 \times 30 \\ \hline 140 \end{array}$$

$$\begin{array}{r} 27 \Rightarrow \quad + \\ \times 3 \quad \times \quad \quad \quad \leftarrow \times \\ \hline \quad + \quad \quad \quad \leftarrow \times \end{array}$$


$$\begin{array}{r} 43 \Rightarrow \quad + \\ \times 4 \quad \times \quad \quad \quad \leftarrow \times \\ \hline \quad + \quad \quad \quad \leftarrow \times \end{array}$$


$$\begin{array}{r} 284 \Rightarrow \quad + \quad + \\ \times 3 \quad \times \quad \quad \quad \leftarrow \times \\ \hline \quad + \quad \quad \quad \leftarrow \times \end{array}$$

$$\begin{array}{r} 65 \Rightarrow \quad + \\ \times 2 \quad \times \quad \quad \quad \leftarrow \times \\ \hline \quad + \quad \quad \quad \leftarrow \times \end{array}$$

$$\begin{array}{r} 325 \Rightarrow \quad + \quad + \\ \times 4 \quad \times \quad \quad \quad \leftarrow \times \\ \hline \quad + \quad \quad \quad \leftarrow \times \end{array}$$

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Raving Reviews



This is perfect for multiplication and division and even the relationship between the two! We are huge fans of Marvel Math so I had no doubts this would be what we needed. It clearly identifies the TEK being taught on each W/S and gives great visuals for students who may need that. Highly recommend!

-Tara A.



AMAZING product! Covers all the bases and some I didn't think to cover. Thank you!!

-Annah C.



I like how structured the pages are for practicing the steps of the problem. Thank you!

-Teresa V.



This resource is included in these

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Notebook BUNDLE

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4th Grade TEKS
Multiplication &
Division BUNDLE



About the Author

This resource was created by Melissa Johnson, who has 16 years of k-10 teaching experience and a masters degree in Mathematics Education. Her resources build conceptual understanding, make connections between math topics and engage students in the mathematics they are learning.



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