

School-Home Letter

Dear Family,

During the next few weeks, our math class will be learning about dividing three- and four-digit whole numbers. We will also learn how to interpret remainders.

You can expect to see homework that provides practice with division of three- and four-digit dividends by one- and two-digit divisors.

Here is a sample of how your child will be taught to divide a three-digit number by a one-digit divisor.

Vocabulary

compatible numbers Numbers that are easy to compute with mentally

dividend The number that is to be divided in a division problem

divisor The number that divides the dividend

quotient The number, not including the remainder, that results from dividing

remainder The amount left over when a number cannot be divided equally



MODEL Divide Three-Digit Numbers

This is how we will divide three-digit numbers.

Solve. $268 \div 5$

STEP 1

Estimate to place the first digit in the quotient.

$$250 \div 5 = 50$$

So, place the first digit in the tens place.

$$\begin{array}{r} 5 \\ 5 \overline{)268} \end{array}$$

STEP 2

Divide the tens.

$$\begin{array}{r} 5 \\ 5 \overline{)268} \\ \underline{-25} \\ 18 \end{array}$$

STEP 3

Divide the ones.

$$\begin{array}{r} 53 \text{ r}3 \\ 5 \overline{)268} \\ \underline{-25} \\ 18 \\ \underline{-15} \\ 3 \end{array}$$

Tips

Identifying Patterns in Division

When estimating to place the first digit, it is important to recognize patterns with multiples of 10, 100, and 1,000. Complete the division with basic facts, then attach the same number of zeros to the dividend and the quotient.

$$\begin{aligned} 36 \div 4 &= 9 \\ \text{so, } 36,000 \div 4 &= 9,000. \end{aligned}$$

Activity

Plan a vacation for the summer. Research the distance to the destination from your home. You can spend no more than one week traveling to the destination, and you must travel the same number of miles each day. Decide how many days you will spend traveling. Then find how many miles you need to travel each day.

Carta para la casa

Querida familia,

Durante las próximas semanas en la clase de matemáticas aprenderemos a dividir números enteros de tres y cuatro dígitos. También aprenderemos a interpretar los residuos.

Llevaré a la casa tareas con actividades para practicar la división de dividendos de tres y cuatro dígitos entre divisores de uno y dos dígitos.

Este es un ejemplo de la manera como aprenderemos a dividir un número de tres dígitos entre un número de un dígito.

Vocabulario

números compatibles Números con los que se pueden hacer cálculos mentales fácilmente

dividendo El número que se va a dividir en un problema de división

divisor El número entre el que se divide el dividendo

cociente El número, sin incluir al residuo, que resulta de la división

residuo La cantidad que sobra cuando un número no se puede dividir en partes iguales



MODELO Dividir números de tres dígitos

Este es un ejemplo de cómo dividir números de tres dígitos.

Resuelve $268 \div 5$

PASO 1

Estima para colocar el primer dígito del cociente.

$$250 \div 5 = 50$$

Por lo tanto, coloca el primer dígito en el lugar de las decenas.

$$\begin{array}{r} 5 \\ 5 \overline{)268} \end{array}$$

PASO 2

Divide las decenas.

$$\begin{array}{r} 5 \\ 5 \overline{)268} \\ \underline{-25} \\ 18 \end{array}$$

PASO 3

Divide las unidades.

$$\begin{array}{r} 53 \text{ r}3 \\ 5 \overline{)268} \\ \underline{-25} \\ 18 \\ \underline{-15} \\ 3 \end{array}$$

Pistas

Identificar patrones en la división

Al estimar para colocar el primer dígito, es importante identificar patrones con múltiplos de 10, 100 y 1000. Completa la división con operaciones básicas, luego agrega el mismo número de ceros al dividendo y al cociente.

$$36 \div 4 = 9$$

Por lo tanto,

$$36,000 \div 4 = 9,000$$

Actividad

Planeen unas vacaciones de verano. Investiguen cuál es la distancia desde su casa hasta el destino. Sólo tienen una semana para hacer el viaje y deben recorrer el mismo número de millas cada día. Decidan cuántas millas deben recorrer cada día.

Name _____

Place the First Digit**COMMON CORE STANDARD—5.NBT.6***Perform operations with multi-digit whole numbers and with decimals to hundredths.***Divide.**

1. $4\overline{)388}$

$$\begin{array}{r}
 97 \\
 4\overline{)388} \\
 \underline{-36} \\
 28 \\
 \underline{-28} \\
 0
 \end{array}$$

2. $4\overline{)457}$

3. $8\overline{)712}$

4. $9\overline{)204}$

5. $2,117 \div 3$

6. $520 \div 8$

7. $1,812 \div 4$

8. $3,476 \div 6$

Problem Solving

9. The school theater department made \$2,142 on ticket sales for the three nights of their play. The department sold the same number of tickets each night and each ticket cost \$7. How many tickets did the theater department sell each night?
10. Andreus made \$625 mowing yards. He worked for 5 consecutive days and earned the same amount of money each day. How much money did Andreus earn per day?

Lesson Check (5.NBT.6)

1. Kenny is packing cans into bags at the food bank. He can pack 8 cans into each bag. How many bags will Kenny need for 1,056 cans?
2. Liz polishes rings for a jeweler. She can polish 9 rings per hour. How many hours will it take her to polish 315 rings?

Spiral Review (5.NBT.2, 5.NBT.5, 5.NBT.6)

3. Fiona uses 256 fluid ounces of juice to make 1 bowl of punch. How many fluid ounces of juice will she use to make 3 bowls of punch?
4. Len wants to write the number 100,000 using a base of 10 and an exponent. What number should he use as the exponent?

5. A family pass to the amusement park costs \$54. Using the Distributive Property, write an expression that can be used to find the cost in dollars of 8 family passes.
6. Gary is catering a picnic. There will be 118 guests at the picnic, and he wants each guest to have a 12-ounce serving of salad. How much salad should he make?

Name _____

Divide by 1-Digit Divisors**COMMON CORE STANDARD—5.NBT.6**
*Perform operations with multi-digit whole numbers and with decimals to hundredths.***Divide.**

1. $4 \overline{)724}$

2. $5 \overline{)312}$

3. $278 \div 2$

4. $336 \div 7$

$$\begin{array}{r}
 181 \\
 4 \overline{)724} \\
 \underline{-4} \\
 32 \\
 \underline{-32} \\
 04 \\
 \underline{-4} \\
 0
 \end{array}$$

181**Find the value of n in each equation. Write what n represents in the related division problem.**

5. $n = 3 \times 45$

6. $643 = 4 \times 160 + n$

7. $n = 6 \times 35 + 4$

Problem Solving

8. Randy has 128 ounces of dog food. He feeds his dog 8 ounces of food each day. How many days will the dog food last?

9. Angelina bought a 64-ounce can of lemonade mix. She uses 4 ounces of mix for each pitcher of lemonade. How many pitchers of lemonade can Angelina make from the can of mix?

Lesson Check (5.NBT.6)

1. A color printer will print 8 pages per minute. How many minutes will it take to print a report that has 136 pages?
2. A postcard collector has 1,230 postcards. If she displays them on pages that hold 6 cards each, how many pages does she need?

Spiral Review (5.NBT.1, 5.NBT.5, 5.NBT.6)

3. Francis is buying a stereo system for \$196. She wants to pay for it in four equal monthly installments. What is the amount she will pay each month?
4. A bakery bakes 184 loaves of bread in 4 hours. How many loaves does the bakery bake in 1 hour?

5. Marvin collects trading cards. He stores them in boxes that hold 235 cards each. If Marvin has 4 boxes full of cards, how many cards does he have in his collection?
6. What is the value of the digit 7 in 870,541?

Name _____

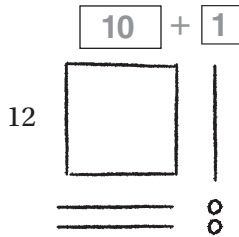
Division with 2-Digit Divisors



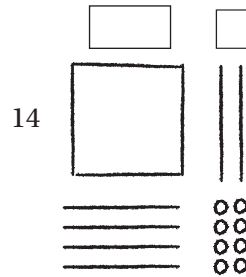
COMMON CORE STANDARD—5.NBT.6
Perform operations with multi-digit whole numbers and with decimals to hundredths.

Use the quick picture to divide.

1. $132 \div 12 = \underline{11}$



2. $168 \div 14 = \underline{\quad}$



Divide. Use base-ten blocks.

3. $195 \div 13 = \underline{\quad}$

4. $143 \div 11 = \underline{\quad}$

5. $165 \div 15 = \underline{\quad}$

Divide. Draw a quick picture.

6. $192 \div 16 = \underline{\quad}$

7. $169 \div 13 = \underline{\quad}$

Problem Solving



8. There are 182 seats in a theater. The seats are evenly divided into 13 rows. How many seats are in each row?

9. There are 156 students at summer camp. The camp has 13 cabins. An equal number of students sleep in each cabin. How many students sleep in each cabin?

Lesson Check (5.NBT.6)

1. There are 198 students in the soccer league. There are 11 players on each soccer team. How many soccer teams are there?
2. Jason earned \$187 for 17 hours of work. How much did Jason earn per hour?

Spiral Review (5.OA.2, 5.NBT.1, 5.NBT.5, 5.NBT.6)

3. What is the number written in standard form: six million, seven hundred thousand, twenty?
4. What is the following sentence written as an expression? "Add the product of 3 and 6 to 4."

5. To transport 228 people to an island, the island ferry makes 6 different trips. On each trip, the ferry carries the same number of people. How many people does the ferry transport on each trip?
6. Isabella sells 36 tickets to the school talent show. Each ticket costs \$14. How much money does Isabella collect for the tickets she sells?

Name _____

Partial Quotients**COMMON CORE STANDARD—5.NBT.6**

Perform operations with multi-digit whole numbers and with decimals to hundredths.

Divide. Use partial quotients.

1. $18\overline{)236}$

$$\begin{array}{r}
 18\overline{)236} \\
 \underline{-180} \leftarrow 10 \times 18 \quad | \quad 10 \\
 \quad \underline{56} \\
 \quad \underline{-36} \leftarrow 2 \times 18 \quad | \quad 2 \\
 \quad \quad \underline{20} \\
 \quad \quad \underline{-18} \leftarrow 1 \times 18 \quad | \quad + 1 \\
 \quad \quad \quad \underline{2} \qquad \qquad \qquad | \quad \underline{13}
 \end{array}$$

2. $36\overline{)540}$

3. $27\overline{)624}$

 $236 \div 18$ is 13 r2.

4. $478 \div 16$

5. $418 \div 22$

6. $625 \div 25$

7. $514 \div 28$

8. $322 \div 14$

9. $715 \div 25$

Problem Solving

10. A factory processes 1,560 ounces of olive oil per hour. The oil is packaged into 24-ounce bottles. How many bottles does the factory fill in one hour?

11. A pond at a hotel holds 4,290 gallons of water. The groundskeeper drains the pond at a rate of 78 gallons of water per hour. How long will it take to drain the pond?

Lesson Check (5.NBT.6)

1. Yvette has 336 eggs to put into cartons. She puts one dozen eggs into each carton. How many cartons does she fill?
2. Ned mows a 450 square-foot garden in 15 minutes. How many square feet of the garden does he mow in one minute?

Spiral Review (5.NBT.1, 5.NBT.5, 5.NBT.6)

3. Raul has 56 bouncy balls. He puts three times as many balls into red gift bags as he puts into green gift bags. If he puts the same number of balls into each bag, how many balls does he put into each green bag?
4. Marcia uses 5 ounces of chicken stock to make one batch of soup. She has a total of 400 ounces of chicken stock. How many batches of soup can Marcia make?

5. Michelle buys 13 bags of gravel for her fish aquarium. If each bag weighs 12 pounds, how many pounds of gravel did she buy?
6. What is the number 4,305,012 written in expanded notation?

Name _____

Estimate with 2-Digit Divisors**COMMON CORE STANDARD—5.NBT.6***Perform operations with multi-digit whole numbers and with decimals to hundredths.***Use compatible numbers to find two estimates.**

1. $18 \overline{)1,322}$

2. $17 \overline{)1,569}$

3. $27 \overline{)735}$

4. $12 \overline{)478}$

$1,200 \div 20$

$= 60$

$1,400 \div 20$

$= 70$

5. $336 \div 12$

6. $1,418 \div 22$

7. $16 \overline{)2,028}$

8. $2,242 \div 33$

Use compatible numbers to estimate the quotient.

9. $82 \overline{)5,514}$

10. $61 \overline{)5,320}$

11. $28 \overline{)776}$

12. $23 \overline{)1,624}$

Problem Solving

13. A cubic yard of topsoil weighs 4,128 pounds. About how many 50-pound bags of topsoil can you fill with one cubic yard of topsoil?

14. An electronics store places an order for 2,665 USB flash drives. One shipping box holds 36 flash drives. About how many boxes will it take to hold all the flash drives?

Lesson Check (5.NBT.6)

1. Marcy has 567 earmuffs in stock. If she can put 18 earmuffs on each shelf, about how many shelves does she need for all the earmuffs?
2. Howard pays \$327 for one dozen collector's edition baseball cards. About how much does he pay for each baseball card?

Spiral Review (5.NBT.1, 5.NBT.5, 5.NBT.6)

3. Andrew can frame 9 pictures each day. He has an order for 108 pictures. How many days will it take him to complete the order?
4. Madeleine can type 3 pages in one hour. How many hours will it take her to type a 123-page report?

5. Suppose you round 43,257,529 to 43,300,000. To what place value did you round the number?
6. Grace's catering company received an order for 118 apple pies. Grace uses 8 apples to make one apple pie. How many apples does she need to make all 118 pies?

Name _____

Divide by 2-Digit Divisors**Divide. Check your answer.****COMMON CORE STANDARD—5.NBT.6***Perform operations with multi-digit whole numbers and with decimals to hundredths.*

1. $385 \div 12$

$$\begin{array}{r} 32 \text{ r}1 \\ 12 \overline{)385} \\ \underline{-36} \\ 25 \\ \underline{-24} \\ 1 \end{array}$$

2. $837 \div 36$

3. $1,650 \div 55$

4. $5,634 \div 18$

5. $7,231 \div 24$

6. $5,309 \div 43$

7. $37 \overline{)3,774}$

8. $54 \overline{)1,099}$

9. $28 \overline{)6,440}$

10. $52 \overline{)5,256}$

11. $85 \overline{)1,955}$

12. $46 \overline{)5,624}$

Problem Solving

13. The factory workers make 756 machine parts in 36 hours. Suppose the workers make the same number of machine parts each hour. How many machine parts do they make each hour?
- _____

14. One bag holds 12 bolts. Several bags filled with bolts are packed into a box and shipped to the factory. The box contains a total of 2,760 bolts. How many bags of bolts are in the box?
- _____

Lesson Check (5.NBT.6)

1. A bakery packages 868 muffins into 31 boxes. The same number of muffins are put into each box. How many muffins are in each box?
2. Maggie orders 19 identical gift boxes. The Ship-Shape Packaging Company packs and ships the boxes for \$1,292. How much does it cost to pack and ship each box?

Spiral Review (5.NBT.1, 5.NBT.6)

3. What is the standard form of the number four million, two hundred sixteen thousand, ninety?
4. Kelly and 23 friends go roller skating. They pay a total of \$186. About how much does it cost for one person to skate?

5. In two days, Gretchen drinks seven 16-ounce bottles of water. She drinks the water in 4 equal servings. How many ounces of water does Gretchen drink in each serving?
6. What is the value of the underlined digit in 5,436,788?

Name _____

Interpret the Remainder**COMMON CORE STANDARD—5.NF.3**
*Apply and extend previous understandings of multiplication and division to multiply and divide fractions.***Interpret the remainder to solve.**

- Warren spent 140 hours making 16 wooden toy trucks for a craft fair. If he spent the same amount of time making each truck, how many hours did he spend making each truck?
- Marcia has 412 bouquets of flowers for centerpieces. She uses 8 flowers for each centerpiece. How many centerpieces can she make?

$$\begin{array}{r}
 8 \\
 16 \overline{)140} \\
 \underline{-128} \\
 12
 \end{array}$$

$8\frac{3}{4}$ hours

- On the 5th grade class picnic, 50 students share 75 sandwiches equally. How many sandwiches does each student get?
 - One plant container holds 14 tomato seedlings. If you have 1,113 seedlings, how many containers do you need to hold all the seedlings?
-

Problem Solving

- Fiona bought 212 stickers to make a sticker book. If she places 18 stickers on each page, how many pages will her sticker book have?
 - Jenny has 220 ounces of cleaning solution that she wants to divide equally among 12 large containers. How much cleaning solution should she put in each container?
-

Lesson Check (5.NF.3)

1. Henry and 28 classmates go to the roller skating rink. Each van can hold 11 students. If all of the vans are full except one, how many students are in the van that is not full?

2. Candy buys 20 ounces of mixed nuts. She puts an equal number of ounces in each of 3 bags. How many ounces of mixed nuts will be in each bag? Write the answer as a whole number and a fraction.

Spiral Review (5.NBT.5, 5.NBT.6)

3. Jayson earns \$196 each week bagging groceries at the store. He saves half his earnings each week. How much money does Jayson save per week?

4. Desiree swims laps for 25 minutes each day. How many minutes does she spend swimming laps in 14 days?

5. Steve is participating in a bike-a-thon for charity. He will bike 144 miles per day for 5 days. How many miles will Steve bike in the five days?

6. Kasi is building a patio. He has 136 bricks. He wants the patio to have 8 rows, each with the same number of bricks. How many bricks will Kasi put in each row?

Name _____

Adjust Quotients**COMMON CORE STANDARD—5.NBT.6***Perform operations with multi-digit whole numbers and with decimals to hundredths.***Adjust the estimated digit in the quotient, if needed. Then divide.**

$$\begin{array}{r} 1. \quad \begin{array}{r} 5 \\ 16 \overline{)976} \\ -80 \\ \hline 17 \end{array} \end{array}$$

$$2. \quad \begin{array}{r} 3 \\ 24 \overline{)689} \end{array}$$

$$3. \quad \begin{array}{r} 3 \\ 65 \overline{)2,210} \end{array}$$

$$4. \quad \begin{array}{r} 2 \\ 38 \overline{)7,035} \end{array}$$

$$\begin{array}{r} 61 \\ 16 \overline{)976} \\ -96 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

Divide.

5. $2,961 \div 47$

6. $2,072 \div 86$

7. $1,280 \div 25$

8. $31 \overline{)1,496}$

9. $86 \overline{)6,290}$

10. $95 \overline{)4,000}$

11. $44 \overline{)2,910}$

12. $82 \overline{)4,018}$

Problem Solving

13. A copier prints 89 copies in one minute. How long does it take the copier to print 1,958 copies?

14. Erica is saving her money to buy a dining room set that costs \$580. If she saves \$29 each month, how many months will she need to save to have enough money to buy the set?

Lesson Check (5.NBT.6)

1. Gail ordered 5,675 pounds of flour for the bakery. The flour comes in 25-pound bags. How many bags of flour will the bakery receive?
2. Simone is in a bike-a-thon for a fundraiser. She receives \$15 in pledges for every mile she bikes. If she wants to raise \$510, how many miles does she need to bike?

Spiral Review (5.OA.2, 5.NBT.1, 5.NBT.6)

3. Lina makes beaded bracelets. She uses 9 beads to make each bracelet. How many bracelets can she make with 156 beads?
4. A total of 1,056 students from different schools enter the county science fair. Each school enters exactly 32 students. How many schools participate in the science fair?

5. Compare. Write $>$, $<$, or $=$ to make the statement true.
6. Christy buys 48 barrettes. She shares the barrettes equally between herself and her 3 sisters. Write an expression to represent the number of barrettes each girl gets.

6,789,398 6,789,405

Name _____

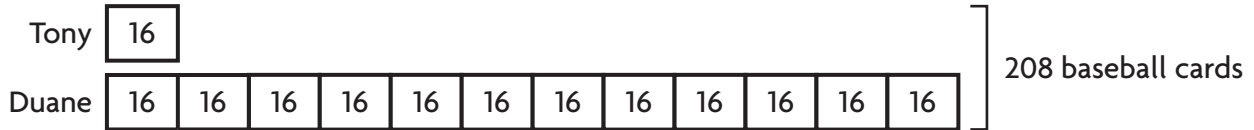
Problem Solving • Division



COMMON CORE STANDARD—5.NBT.6
 Perform operations with multi-digit whole numbers and with decimals to hundredths.

Show your work. Solve each problem.

- Duane has 12 times as many baseball cards as Tony. Between them, they have 208 baseball cards. How many baseball cards does each boy have?



$$208 \div 13 = 16$$

Tony: 16 cards; Duane: 192 cards

- Hallie has 10 times as many pages to read for her homework assignment as Janet. Altogether, they have to read 264 pages. How many pages does each girl have to read?

- Hank has 48 fish in his aquarium. He has 11 times as many tetras as guppies. How many of each type of fish does Hank have?

- Kelly has 4 times as many songs on her music player as Lou. Tiffany has 6 times as many songs on her music player as Lou. Altogether, they have 682 songs on their music players. How many songs does Kelly have?

Lesson Check (5.NBT.6)

1. Chelsea has 11 times as many art brushes as Monique. If they have 60 art brushes altogether, how many brushes does Chelsea have?
2. Jo has a gerbil and a German shepherd. The shepherd eats 14 times as much food as the gerbil. Altogether, they eat 225 ounces of dry food per week. How many ounces of food does the German shepherd eat per week?

Spiral Review (5.NBT.5, 5.NBT.6, 5.NF.3)

3. Jeanine is twice as old as her brother Marc. If the sum of their ages is 24, how old is Jeanine?
4. Larry is shipping nails that weigh a total of 53 pounds. He divides the nails equally among 4 shipping boxes. How many pounds of nails does he put in each box?
5. Annie plants 6 rows of small flower bulbs in a garden. She plants 132 bulbs in each row. How many bulbs does Annie plant?
6. Next year, four elementary schools will each send 126 students to Bedford Middle School. What is the total number of students the elementary schools will send to the middle school?