Unlock the Problem

Students in the third, fourth, and fifth grades made 525 origami animals to display in the library. Each grade made the same number of animals. How many animals did each grade make?

Example 1 Divide. $525 \div 3$

STEP 1 Use place value to place the first digit. Look at the hundreds in 525. 5 hundreds can be shared among 3 groups without regrouping. The first digit of the quotient will be in the ________ place.

STEP 2 Divide the hundreds.

$$\begin{array}{c|c}
3 & 525 \\
\hline
& 175 \\
\hline
& 3 \times 175 \\
\hline & \quad 15 \\
\end{array}$$

Divide. Share ____ hundreds equally among ____ groups.

Multiply. ____ × ________

Subtract. ________ – ________.

Check. _____ hundreds cannot be shared among 3 groups without regrouping.

STEP 3 Divide the tens.

$$\begin{array}{c|c}
3 & 525 \\
\hline
& 22 \\
\hline
& 3 \times 22 \\
\hline & \quad 15 \\
\end{array}$$

Divide. Share _________ equally among _____ groups.

Multiply. ________________

Subtract. _________ – _________

Check. ________________

STEP 4 Divide the ones.

$$\begin{array}{c|c}
3 & 525 \\
\hline
& 15 \\
\hline
& 3 \times 15 \\
\hline & \quad 15 \\
\end{array}$$

Divide. Share _________ equally among _____ groups.

Multiply. ________________

Subtract. _________ – _________

Check. ___________ are left.

So, each class made ________ origami animals.
There are 8,523 sheets of origami paper to be divided equally among 8 schools. How many sheets of origami paper will each school get?

**Example 2** Divide. \(8,523 \div 8\)

**STEP 1** Use place value to place the first digit.

Look at the thousands in 8,523. 8 thousands can be shared among 8 groups without regrouping.

The first digit of the quotient will be in the ______ place.

**STEP 2** Divide the thousands.

**STEP 3** Divide the hundreds.

**STEP 4** Divide the tens.

**STEP 5** Divide the ones.

So, each school will get _____ sheets of origami paper.

There will be _____ sheets left.

**ERROR Alert**

Place a zero in the quotient when a place in the dividend cannot be divided by the divisor.

**CONNECT** Division and multiplication are inverse operations. You can use multiplication to check your answer to a division problem.

Multiply the quotient by the divisor. If there is a remainder, add it to the product. The result should equal the dividend.

\[
\begin{array}{c}
\text{quotient} \quad \rightarrow \quad 1,065 \, \text{r}3 \\
\text{divisor} \quad \rightarrow \quad 8 \big) 8,523 \\
\text{remainder} \quad \rightarrow \quad \text{dividend}
\end{array}
\]

\[
\begin{array}{c}
1,065 \quad \leftarrow \quad \text{quotient} \\
\times \quad 8 \\
\hline
8,520 \\
\quad + \quad 3 \\
\hline
8,523 \quad \leftarrow \quad \text{dividend}
\end{array}
\]

The check shows that the division is correct.
1. Ollie used 852 beads to make 4 bracelets. He put the same number of beads on each bracelet. How many beads does each bracelet have? Check your answer.

Divide.  

\[
\begin{array}{c|cc|c}
& 2 & \downarrow & 852 \\
4 & \underline{8} & 5 & 2 \\
\end{array}
\]

Check.

So, each bracelet has ____ beads.

Divide and check.

2. \(2 \div 394\)  

3. \(2 \div 803\)

4. \(4 \div 3,448\)

Math Talk

Identify Relationships
How could you check to see if your quotient is correct?

On Your Own

Divide and check.

5. \(2 \div 816\)  

6. \(4 \div 709\)  

7. \(3 \div 267\)

8. Go Deeper The flower shop received a shipment of 248 pink roses and 256 red roses. The shop owner uses 6 roses to make one arrangement. How many arrangements can the shop owner make if he uses all the roses?
Use the table for 9–11.

9. **THINK SMARTER** Four teachers bought 10 origami books and 100 packs of origami paper for their classrooms. They will share the cost of the items equally. How much should each teacher pay?

10. **Mathematical Practice 5** Communicate Six students shared equally the cost of 18 of one of the items in the chart. Each student paid $24. What item did they buy? Explain how you found your answer.

11. Ms. Alvarez has $1,482 to spend on origami paper. How many packs can she buy?

12. **Go Deeper** Evan made origami cranes with red, blue, and yellow paper. The number of cranes in each color is the same. If there are 342 cranes, how many of them are blue or yellow?

13. **THINK SMARTER** On Monday 336 fourth graders went on a field trip to a local park. The teachers divided the students into 8 groups.

   Use a basic fact. Estimate the number of students in each group. Show your work.
Divide by 1-Digit Numbers

Divide and check.

1. \[ 318 \div 2 \]
   
   \[
   \begin{array}{c|c|c}
   2 & 636 \\
   \hline
   & -6 \\
   -6 & 63 \\
   \hline
   & -2 \\
   -2 & 0 \\
   \hline
   & 0
   \end{array}
   \]

2. \[ 318 \times 2 \]
   
   \[
   \begin{array}{c|c|c}
   318 & 2 \\
   \hline
   0 & 636 \\
   \hline
   2 & 318 \\
   \hline
   318 & 0
   \end{array}
   \]

3. \[ 906 \div 8 \]

Use the table for 4 and 5.

4. The Briggs rented a car for 5 weeks. What was the cost of their rental car per week?

5. The Lees rented a car for 4 weeks. The Santos rented a car for 2 weeks. Whose weekly rental cost was lower? Explain.

<table>
<thead>
<tr>
<th>Rental Car Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Lee</td>
</tr>
<tr>
<td>Briggs</td>
</tr>
<tr>
<td>Santo</td>
</tr>
</tbody>
</table>

6. WRITE Math Josey got an answer of 167 \( r4 \) for \( 3 \div 505 \). Explain and correct Josey’s error.
Lesson Check (4.NBT.B.6)

1. Write an expression that can be used to check the quotient of $646 \div 3$.

2. There are 8 volunteers at the telethon. The goal for the evening is to raise $952. If each volunteer raises the same amount, what is the minimum amount each needs to raise to meet the goal?

Spiral Review (4.OA.A.3, 4.NBT.B.5, 4.NBT.B.6)

3. What product is shown by the model?

4. The computer lab at a high school ordered 26 packages of CDs. There were 50 CDs in each package. How many CDs did the computer lab order?

5. Write a division problem whose quotient has its first digit in the hundreds place.

6. Sharon has 64 fluid ounces of juice. She is going to use the juice to fill as many 6-ounce glasses as possible. She will drink the leftover juice. How much juice will Sharon drink?