

Interactive Notebooks

Grade
3

MATH



Understanding Multiplication
multiplication is repeated



$$\begin{array}{r} 4 \\ 4 \text{ or} \\ 4 \\ + \\ \hline 12 \end{array}$$

Write the multiplication sentence. Then, solve.

$$6 \times 5 = 30$$

$$2 \times 2 = 4$$

- Ideal for organizing information and applying learning
- Perfect for addressing the needs of individual learners
- Includes step-by-step instructions for each page
- Great for introducing new math topics



Place Value

Introduction

Review simple place value. Write three digits on the board such as 4, 8, and 2. Challenge students to use the digits to write the smallest number they can. Then, have students use the same digits to write the greatest number they can. Have students explain how they knew the best order to arrange the digits to form the smallest and greatest numbers.

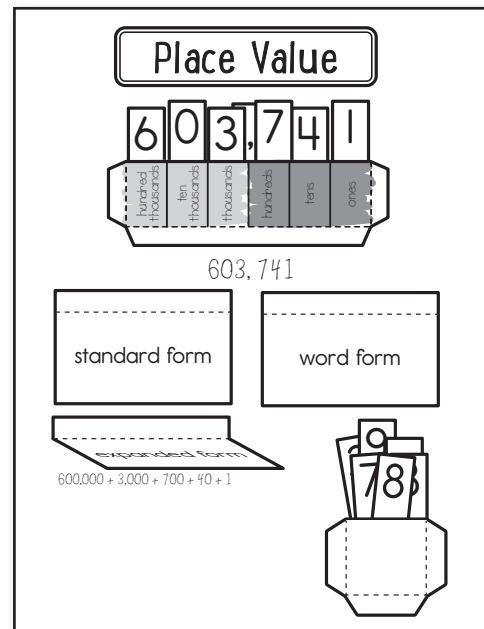
Creating the Notebook Page

Guide students through the following steps to complete the right-hand page in their notebooks.

1. Add a Table of Contents entry for the Place Value pages.
2. Cut out the title and glue it to the top of the page.
3. Cut out the piece with six boxes. Apply glue to the back of the tabs and attach it below the title, leaving space above it.
4. Label each box with the place values from *ones* to *hundred thousands*. Color the hundreds period one color and the thousands period a different color.
5. Cut out the pocket. Apply glue to the back of the tabs and attach it to the bottom of the page.
6. Cut out the number and comma pieces. Store them in the pocket created in step 5.
7. Say values such as *7 hundreds*, *3 thousands*, etc. Place the number cards in the place value pocket to create a six-digit number with the matching values. Record the number on the page below the pocket.
8. Cut out the three *form* flaps. Apply glue to the back of the top sections and attach them to the bottom of the page.
9. Under each flap, write the correct form of the number written above.

Reflect on Learning

To complete the left-hand page, have students explain how many total hundreds are in the following numbers: 3,400; 45,000; 1,200; and 67,550. For example, *there are 15 hundreds in 1,500*.



Place Value

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|--|--|--|--|--|--|

| |
|--|
| |
|--|

| | | |
|---|---|---|
| 9 | , | 9 |
| 6 | 9 | 7 |
| 3 | 4 | 5 |
| 0 | 1 | 2 |

| | | |
|---------------|-----------|---------------|
| standard form | word form | expanded form |
|---------------|-----------|---------------|

Rounding Numbers

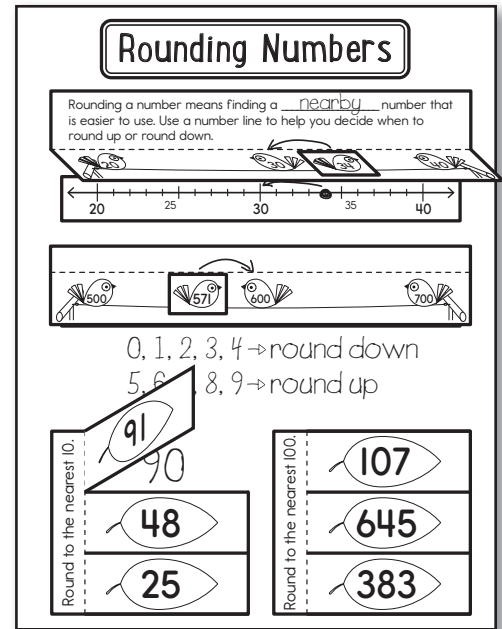
Introduction

Have students pretend they are planning a festival. Last year, 689 people attended the festival. Ask students how many T-shirts they think need to be ordered. How many hot dogs do they need to buy? How many drinks? Write the answers on the board and discuss the numbers. Were they specific numbers like 689 or more rounded numbers like 700? Why?

Creating the Notebook Page

Guide students through the following steps to complete the right-hand page in their notebooks.

1. Add a Table of Contents entry for the Rounding Numbers pages.
2. Cut out the title and glue it to the top of the page.
3. Cut out the *Rounding a number* flap. Apply glue to the back of the top section and attach it below the title.
4. Discuss what it means to round a number. Complete the sentence. (Rounding a number means finding a **nearby** number that is easier to use.) Discuss scenarios when it would be helpful to round numbers.
5. Cut out the 20, 30, 40 number line and glue it under the flap.
6. Cut out the 34 bird. Glue it in the correct place on top of the flap. Lift the flap and draw a dot where 34 is on the number line. Decide which ten 34 is closest to, 30 or 40. Draw arrows on the flap and the number line to show which number 34 should round to.
7. Repeat step 3 with the 500, 600, 700 flap and repeat steps 5 and 6 with the 500, 600, 700 number line and the 571 bird.
8. Discuss the rules for rounding numbers. Write the rules on the page below the 500, 600, 700 flap.
9. Cut out the flap books. Cut on the solid lines to create three flaps on each book. Apply glue to the back of the left sections and attach them to the bottom of the page.
10. Follow the directions on each flap book. Write the rounded number under each flap.



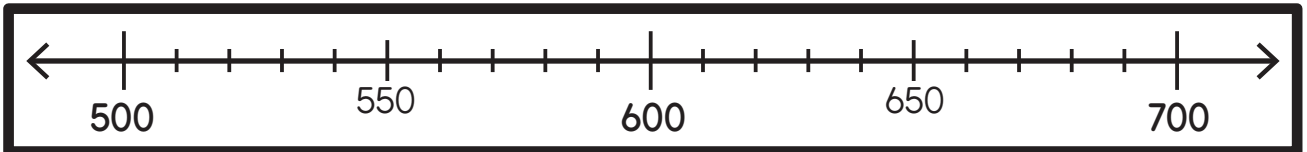
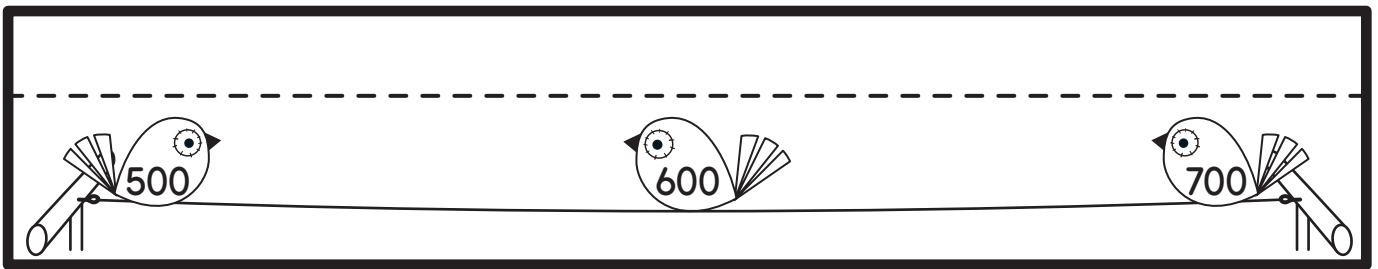
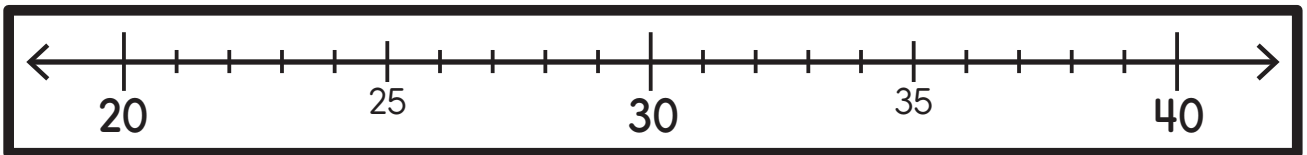
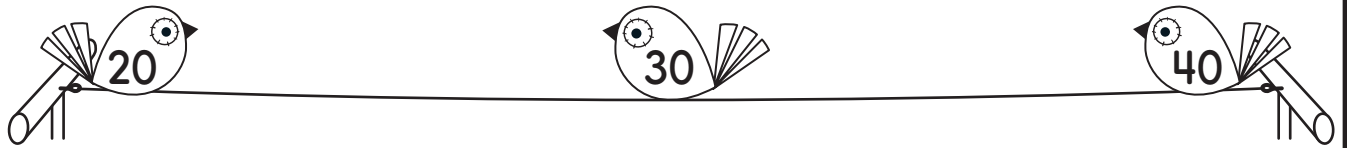
Reflect on Learning

To complete the left-hand page, have students describe how they think they would round a number to the nearest thousand. Write the number 1,232 on the board. Have students use number lines or other methods to describe how to round it to the nearest thousand.

Rounding Numbers



Rounding a number means finding a _____ number that is easier to use. Use a number line to help you decide when to round up or round down.



Round to the nearest 10.

91

48

25

Round to the nearest 100.

107

645

383

Comparing and Ordering Numbers

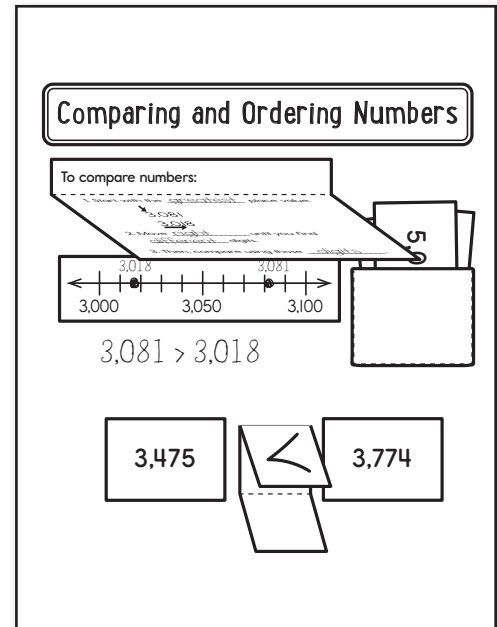
Introduction

Review place value. Say different values and have students build the numbers. For example, if you say *4 tens, 2 thousands, 7 ones, and 9 hundreds*, students should write 2,947. Repeat several times. Then, have students find the numbers in their lists with the greatest number of ones, the greatest number of tens, etc.

Creating the Notebook Page

Guide students through the following steps to complete the right-hand page in their notebooks.

1. Add a Table of Contents entry for the Comparing and Ordering Numbers pages.
2. Cut out the title and glue it to the top of the page.
3. Cut out the flap. Apply glue to the back of the top section and attach it to the top left of the page.
4. Complete the steps on the flap by filling in the blanks. (1. Start with the **greatest** place value. 2. Move **right** until you find **different** digits. 3. Then, compare using those **digits**.)
5. Cut out the number line and glue it under the flap.
6. Mark the example numbers from the flap on the number line. Write a true comparison sentence with the numbers ($3,081 > 3,018$).
7. Cut out the piece with the equal sign. Apply glue to the back of the middle section. Attach it to the center of the bottom half of the page so that the flaps open up and down.
8. Flip down the top flap and draw a less than symbol ($<$) on it. Flip up the bottom flap and draw a greater than symbol ($>$) on it.
9. Cut out the pocket. Apply glue to the back of the tabs and attach it to the page beside the *To compare numbers* piece.
10. Cut out the number cards. Place one card on each side of the symbols piece. Unfold the flaps to create a true number comparison. Or, choose three or more cards to place in order from least to greatest or greatest to least. For more practice, write additional numbers on the backs of the cards. Store the cards in the pocket when not in use.



Reflect on Learning

To complete the left-hand page, have students write all six numbers from the right-hand page in order from least to greatest. Then, students should add a number that would belong between the two middle numbers.

Comparing and Ordering Numbers

| | | | |
|-------|-------|-------|---|
| 7,345 | 7,453 | 3,475 | = |
| 5,734 | 5,034 | 3,774 | |

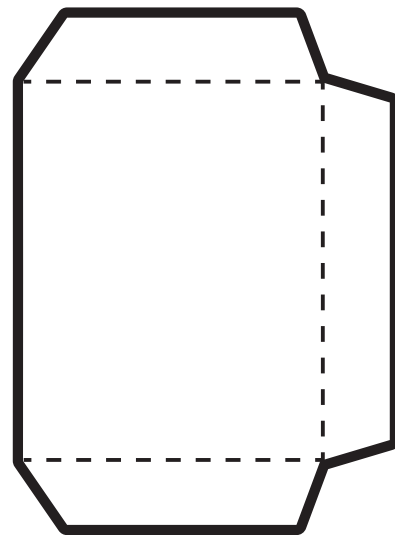
To compare numbers:

1. Start with the _____ place value.

↓ 3,081
3,018 →

2. Move _____ until you find _____ digits.

3. Then, compare using those _____.



Adding and Subtracting within 1,000

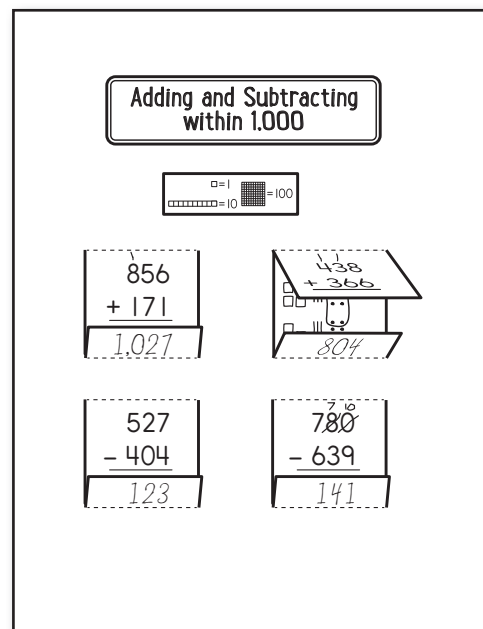
Introduction

Review regrouping and borrowing. Provide pairs of students with sets of base ten blocks. Have each pair start with a hundreds flat. Write the problem $100 - 78$ on the board and have students borrow from the hundreds flat to solve the problem. Next, have students start with four tens rods and six ones cubes. Write the problem $46 + 39$ on the board and have students regroup by exchanging their ones cubes for a tens rod to solve the problem.

Creating the Notebook Page

Guide students through the following steps to complete the right-hand page in their notebooks.

1. Add a Table of Contents entry for the Adding and Subtracting within 1,000 pages.
2. Cut out the title and glue it to the top of the page.
3. Cut out the base ten blocks key and glue it below the title.
4. Cut out the trifold pieces. With the blank sides faceup, fold the top and bottom sections on the dashed lines so that the small pieces overlap the large pieces. Apply glue to the gray glue sections and attach them to the page.
5. Solve each problem. Write the answer on the small flap. Inside each trifold piece, draw base ten blocks to show the borrowing or regrouping done in the problem.



Reflect on Learning

To complete the left-hand page, have students choose one of the addition problems and one of the subtraction problems from the right-hand side of the page. Students should explain or show the strategies they used to solve each problem.

Answer Key

$856 + 171 = 1,027$; $438 + 366 = 804$; $527 - 404 = 123$; $780 - 639 = 141$

Adding and Subtracting within 1,000

glue

$$\begin{array}{r} 856 \\ + 171 \\ \hline \end{array}$$

glue

$$\begin{array}{r} 438 \\ + 366 \\ \hline \end{array}$$

glue


$$\begin{array}{r} 527 \\ - 404 \\ \hline \end{array}$$

glue

$$\begin{array}{r} 780 \\ - 639 \\ \hline \end{array}$$

□ = 1

□ = 10

 = 100

Understanding Multiplication

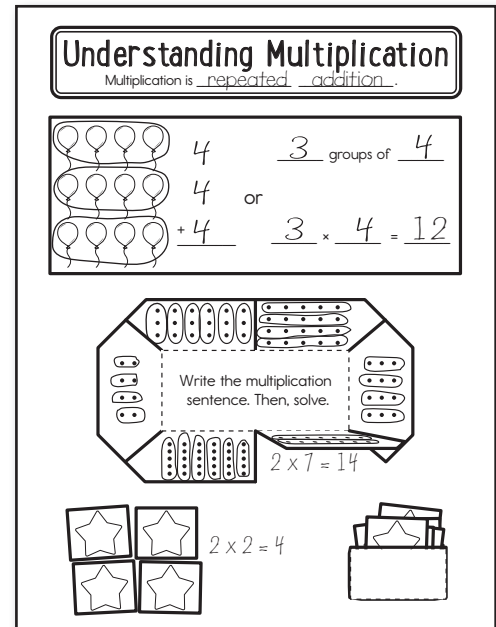
Introduction

Review arrays. Provide students with manipulatives such as counters or tiles. Write a repeated addition sentence on the board and have students model and solve it with an array. Then, have students create arrays and share the related addition sentences.

Creating the Notebook Page

Guide students through the following steps to complete the right-hand page in their notebooks.

1. Add a Table of Contents entry for the Understanding Multiplication pages.
2. Cut out the title and glue it to the top of the page.
3. Complete the definition of *multiplication*. (Multiplication is **repeated addition**.)
4. Cut out the balloon piece and glue it below the title.
5. Look at the balloons and discuss different ways to group them evenly. Draw circles around the rows to create three groups of four. To the right of each row, write the total number of balloons. Then, write the sum for the addition sentence. Discuss how the grouping and repeated addition translate into a multiplication sentence. Complete the number sentences (3 groups of 4, $3 \times 4 = 12$).
6. Cut out the array flap book. Cut on the solid lines to create six flaps. Apply glue to the back of the center section and place it below the balloon piece.
7. On each flap, draw circles to show equal groups. Under each flap, write the related multiplication sentence and solve it.
8. Cut out the pocket. Apply glue to the back of the tabs and attach it to the bottom right of the page.
9. Cut out the stars. Use the stars to create different arrays. Write a multiplication sentence for each array on the page and solve it. Store the stars in the pocket when not in use.

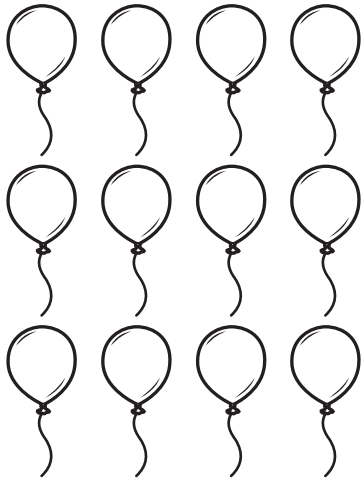


Reflect on Learning

To complete the left-hand page, display a non-square array (such as a 4 by 7 array or a 3 by 8 array) on the board. Have students explain two different ways to solve the array and write the related multiplication sentence for each way. Students should describe why the two multiplication sentences are related.

Understanding Multiplication

Multiplication is _____.



_____ groups of _____

or

+ _____ × _____ = _____

