4 Module 3

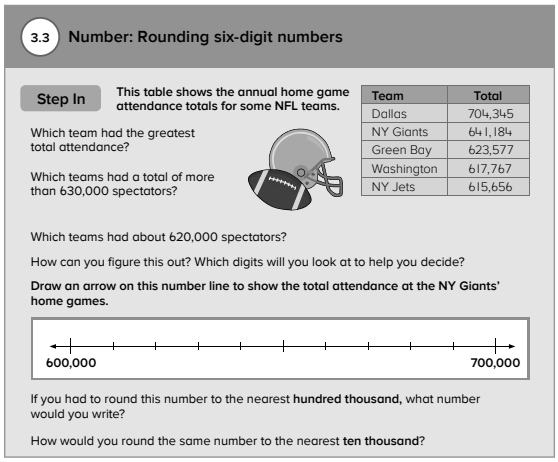
ORIGO STEPPING STONES 2.0

Core Focus

- Number: Comparing, ordering, and rounding six-digit numbers
- Multiplication: Multiples, factors, prime and composite numbers
- Area and Perimeter: Calculating for rectangles and word problems

Number

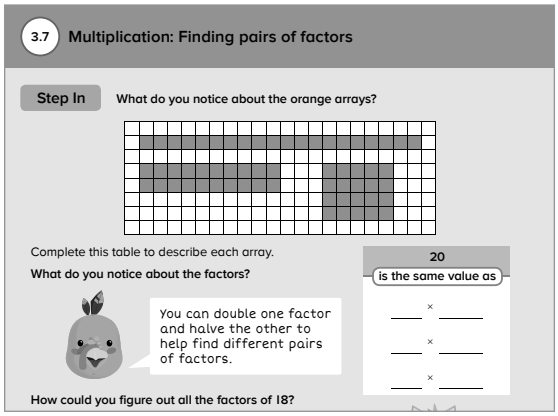
- Students use skills developed in earlier grades to compare and order six-digit numbers.
- By placing numbers on a **number line**, students can visualize their positions relative to each other, and relative to benchmark numbers like tens, hundreds, and thousands. This visualization helps students understand the concept of rounding, instead of relying on rounding rules.



In this lesson, students use a number line to round six-digit numbers.

Multiplication

- **Doubling and halving** is a strategy to simplify multiplication. Students double one factor while halving the other.
- Students also practice finding factors to extend the doubling and halving strategy in other ways.



In this lesson students find pairs of factors.

Ideas for Home

- Look up city populations or areas and find some that are six digits long. Ask your child which numbers are greater or less. For further practice, create a number line and place the populations or areas on it for comparison.

Glossary

- When compared on a **number line**, greater numbers are farther from 0 on the number line, and lesser numbers are closer to zero.

  Students can also see where numbers sit relative to rounding benchmarks like the nearest ten, hundred, thousand, or more.

- **Doubling and halving** is a mental strategy that helps simplify complex multiplication. For example, if a student sees 12 × 15, they can double the 15 and halve the 12 to get 6 × 30, which is a more straightforward multiplication problem. For factors that do not easily fit the doubling and halving strategy, students can break down the greater factor into lesser factors, then add the resulting prducts.

Helpful videos

View these short one-minute videos to see these ideas in action.

www.bit.ly/O1_24
www.bit.ly/O1_28

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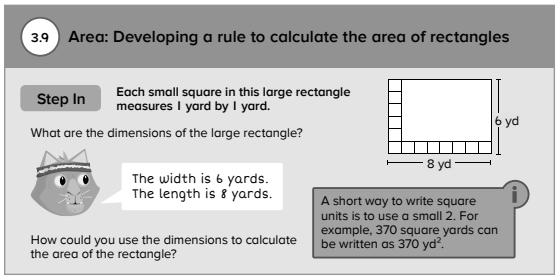
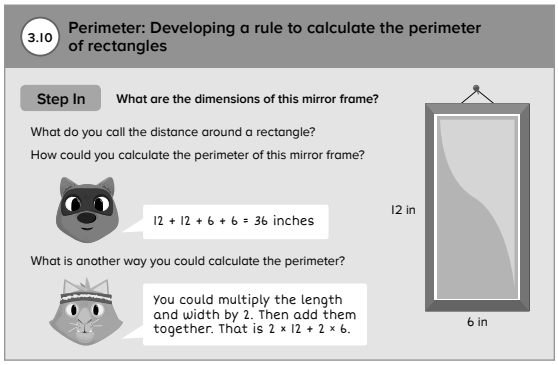
Area and Perimeter

- Students extend what they learned about **area and perimeter** in Grade 3 to investigate and then develop rules for finding the area and perimeter of rectangles. By applying the concept of arrays, students see that rectangles can be viewed as rows and columns of squares. This helps illustrate the meaning behind the familiar formula for the area of a rectangle: A = L × W.



In this lesson, students calculate the area and develop rules to be used for finding the area of any rectangle.

- By finding the perimeter of rectangles, students derive a formula from their observations. Because a rectangle has two identical lengths and two identical widths, they arrive at the following formula: P = (2 × L) + (2 × W), or P = 2 × (L + W).



In this lesson, students measure perimeter and develop rules to be used for finding the perimeter of any rectangle.

Ideas for Home

- Using a measuring device, work together to find the area and perimeter of smaller rectangular shapes and spaces in your home: e.g. a cupboard, a table top, a book, picture frames, or rugs. Use the L × W formula to find the area. Use the (2 × L) + (2 × W) formula to find perimeter.

Glossary

- **Area and perimeter** are two concepts that students may confuse for one another. One way to remember that *perimeter* is the linear distance around the edge of a rectangle, and not the flat space that it covers, is to think of the word *rim* that appears in the middle of the word. Another approach is to remember that *area* and *array* look and sound similar to each other.