

Core Focus

- Decimal fractions: Using the standard algorithm to add and subtract
- 2D shapes: Introducing parallelograms and exploring quadrilaterals and triangles

Decimal Fractions

- Students extend their skills to adding **decimal fractions** building on what they already know about adding like quantities to like quantities, regardless of the numbers themselves.
- Students are encouraged to use mental strategies to add decimal fractions without, and then with, regrouping.
- Students are encouraged to use a number line to show how they might add decimal fractions.

5.4 Decimal fractions: Using the standard algorithm to add more than two addends

Step In Estimate the perimeter of this triangle.

Each side is just over one meter, so the perimeter is between 3 and 4 meters.

How would you calculate the exact perimeter?
Hiro and Beth used different written methods.

Hiro added the hundredths first.

$$\begin{array}{r} 1.18 \\ 1.27 \\ +1.05 \\ \hline 3.50 \end{array}$$

Beth used partial sums. She added the ones first.

$$\begin{array}{r} 1.18 \\ 1.27 \\ +1.05 \\ \hline 3.00 \\ 0.30 \\ \hline 0.20 \\ \hline 3.50 \end{array}$$

Describe the steps they followed.
Does it matter in what order the side lengths are recorded?

In this lesson, students use the standard algorithm to add more than two addends.

- Students also extend their skills to subtracting decimal fractions. The different types of examples are considered: tenths from tenths, hundredths from hundredths, tenths from hundredths, or vice versa, finally extending to thousandths.
- The **standard algorithm** is introduced as an extension of the procedure as used with whole numbers. The lessons progress from decomposing ones to decomposing tenths before regrouping is required in multiple places.
- The written procedure for subtracting decimal fractions, sometimes understood as *lining up the decimal places*, ensures students are subtracting like quantities (tenths from tenths, hundredths from hundredths) instead of treating a tenth as a hundredth through misalignment.

Dallas uses the standard algorithm for subtraction.

What steps does she follow?

The height of Diplodocus is 7.3 meters. Why did Dallas write 7.30 meters? Did she need to record the zero? Why did she cross out the 6 ones?

$$\begin{array}{r} \text{T} \quad \text{O} \quad \text{t} \quad \text{h} \\ 7 \quad 3 \quad 0 \\ - 1 \quad 6 \quad 2 \quad 7 \\ \hline 5 \quad 12 \\ - 7 \quad 3 \quad 0 \\ \hline 8 \quad 9 \quad 7 \end{array}$$

In this lesson, students use standard algorithm to subtract decimal fractions.

Ideas for Home

- Create a set of cards, numbering each one from 0 to 9. Take five cards and create a decimal fraction addition equation that is as close to 10 as possible (over or under). For example, with the digits 1, 2, 5, 6, and 9, an equation could be $9.6 + 0.521 = 11.21$. Take turns with your child to see who can get the closest.

Glossary

- ▶ The term **decimal fraction** emphasizes how decimal numbers are part of a whole number, and that the part is a multiple of ten: tenths, hundredths, thousandths. The decimal point is used to indicate decimal fractions.
- ▶ **Algorithms** are groups of rules used for completing tasks for solving problems.

Helpful videos

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

www.bit.ly/OI_18

www.bit.ly/OI_17


2D shapes

- Students explore relationships among different types of **quadrilaterals**, such as parallelograms (two pairs of parallel sides), rhombuses (parallelograms with all sides the same length), rectangles (parallelograms with right angles), and squares (a special type of rectangle with all sides the same length).
- A tree diagram is used to illustrate how the various quadrilaterals are related to each other because many of the categories overlap. For example, a rectangle is both a quadrilateral and a parallelogram.
- Students extend their skills identifying and naming triangles and quadrilaterals according to a shape's angles, length of sides, and other important properties (such as parallel sides).
- Triangles are used to construct other shapes where the known angles can be used to determine the angles in the composite shape, such as a quadrilateral.
- Students build a classification system for triangles.


5.12 2D shapes: Identifying categories of triangles

Step In Measure the sides of these triangles.

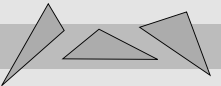
Why do you think these are called equilateral triangles?



These shapes are called isosceles triangles. How are they all the same?



These shapes are called scalene triangles. How are these different from the other triangles?



In this lesson, students examine defining features of triangles.

Ideas for Home

- Help your child identify parallelograms in your home, neighborhood, or town. Some examples might include floor tiles, business logos, stripes in a parking lot, or patterns of windows on a building.

Glossary

- ▶ A four-sided polygon is called a **quadrilateral**.

