COMMON MISCONCEPTIONS

- **Students confuse area and perimeter.**
  Students often experience area and perimeter at the same time. Many times, incorrect verbiage makes it confusing for students to distinguish between finding the area of something and the perimeter of something. When using the activities in this lesson and when discussing the video, be careful to explain perimeter as the DISTANCE around a shape or object, and area as the space inside an object.

- **You can multiply to get the perimeter of all shapes, not just squares.**
  When students discover that the length of one side can be multiplied by 4 to find the perimeter of a square (since all 4 sides are the same length), many believe that they can multiply the lengths of the sides to find the perimeter of any shape. Throughout the lesson, emphasize that all 4 sides should be added; do not place high emphasis on multiplying to find the perimeter of a square. Always show adding and then multiplying to find the perimeter of a square.

- **When the lengths of only 2 sides are given, only those sides must be added to get perimeter.**
  Many times, perimeter problems only show the lengths of 2 sides of a rectangle or parallelogram. Students may look at this information and feel it is all they need to add, since only 2 numbers are given. Encourage students to always write the measurements on the missing sides (opposites) so they remember to add ALL side lengths, not just the ones given. At the beginning stages of developing this skill, give students all side lengths to help them gain a deeper understanding of perimeter.

REVIEWING AND UNDERSTANDING MEASUREMENT

In grade 2, students developed a strong understanding of measurement and choosing appropriate tools needed to measure. This knowledge develops from their understanding of the unit being used to measure and the object being measured. This spatial understanding is transferred into measuring perimeter, by giving students a deeper understanding that the distance around the outside of an object is greater than the length of one side.
PERIMETER VERSUS AREA

Perimeter is the distance around the outside and area is the space filling the inside.

When teaching students about area and perimeter, be sure to use proper verbiage and labels with every example given. Getting students to have a solid understanding of each concept separately can help to alleviate this confusion. As students have more and more practice finding perimeter of objects with given lengths, or measuring real world objects, the concept of perimeter being the “rim” will develop. Always stress that perimeter is the outside, or the distance around, a certain object. Be careful with using an example such as the classroom, because while the walls are the “rim” of the classroom, the walls also have area in another dimension, which can cause confusion. The perimeter of the room would measure the edge where the floor meets the walls, which is a measure of length.

ADDING MORE THAN TWO NUMBERS

One skill that is needed to find perimeter is the ability to add more than two numbers. When finding the perimeter of rectangles or parallelograms, students should see that some sides have the same length, which can be added more easily than adding two different numbers. When the numbers are all different (or a majority are), then students can use any addition strategies that they are comfortable with to find the sum of all the side lengths.

TEACHER TIPS

As stated previously, the main concept students need to understand is that perimeter is the distance around an object or around the outside of the object. Reiterate this as much as possible to keep the concept constantly repeated through all opportunities for learning. Giving students a solid understanding of the meaning and labeling of perimeter will help to eliminate the confusion that often arises between perimeter and area. Providing students with many hands-on opportunities to measure and “see and feel” what perimeter is will also help to solidify that perimeter is the “rim.”