TAKE IT TO THE MAT

A NEWSLETTER ADDRESSING THE FINER POINTS OF MATHEMATICS INSTRUCTION

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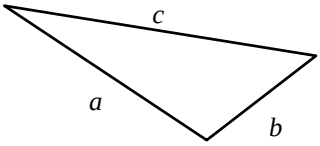
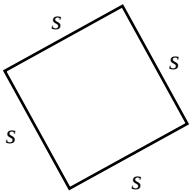
In this issue of *Take It to the MAT*, we will continue our examination of the roots of geometric terms that began in the last issue and apply it to measurement.

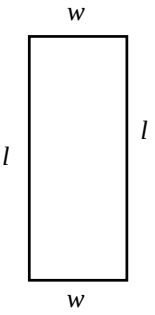
Let's begin this time with the word **meter**. Meter comes from the Greek *metron*, which means "measure." That makes sense because we use many things in our lives for measurement: a speed*ometer*, a thermo*meter*, a baro*meter*. (Actually, the unit of length, meter or metre, is a French word that is borrowed from the Greek. Even the word *metric*, as in *metric system*, contains the Greek root word for measurement. But, I digress.)



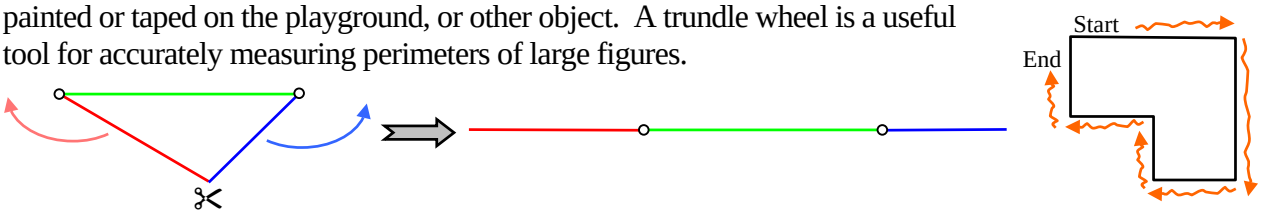
Now one may ask the question, "Why do kids have such a time remembering what **perimeter** is?" Perhaps they need to connect it to other words that use the prefix *peri-* and the root *meter*. We've already covered meter, so let's focus on the prefix. *Peri-* comes from the Greek "around" and thus, perimeter means "measure around." Other words with which students may be familiar are peripheral or periodontal.



Another issue that comes up is when students can't remember the various formulas for the perimeters of various figures. They confuse or fail to recall the formula for perimeter of a triangle, $P = a + b + c$, for a square, $P = 4 \times s$, and a rectangle, $P = 2 \times l + 2 \times w$ or $P = 2 \times (l + w)$. What our kids do not take into account is what the word perimeter means—"measure around." If they have the *concept* of perimeter, then they should be able to measure it regardless of the shape and whether or not they forget a *procedural* formula. (Kids should memorize and know formulas, but conceptual understanding will give them a place to start when they forget.)



Perimeter is a *linear* measure, a length. That's a tough thing for kids to see when faced with a two-dimensional figure. Several ways to get across this notion of measuring "around" would be to use flexible tape measures or strings, but never yarn (too stretchy), and wrap them around objects. One could also have students "unwrap" a figure—take a polygon and unfold it into a line as if the vertices were hinges. Kids could walk "around" the perimeter of a room, a figure painted or taped on the playground, or other object. A trundle wheel is a useful tool for accurately measuring perimeters of large figures.



One last word—**circumference**. *Circum* is the Latin word for "around," as *peri-* is the Greek word. *Circum* is a derivative of *circus* or "circle." Circumference literally means "carry around," the second part of the word coming from *ferre*—think "ferry." Anyway, it appears that circumference and perimeter mean the same thing, their roots just come from different languages. Simply, circumference is the perimeter of a circle or closed curve.