K.MD Longer and Shorter

Alignments to Content Standards:  K.MD.A.2

Task

#### Materials
* One of the student's shoes to use to compare to other items.  
* A bin of seven to ten commonly used classroom items, such as a glue bottle, a pair of scissors and a crayon, that are similar in size but distinctly longer or shorter than a students' shoe.  
* Sheets of paper, folded in half with the words ‘longer’ and ‘shorter’ written, in 2 different colors, at the top of each side.

| Longer | Shorter |

#### Setup
All students have the prepared sheet of paper and a pencil.  

#### Action
The students begin by removing their shoe; this is their ‘measuring item’.  
Then they select an item from the bin to measure against their ‘measuring item’.  
They directly compare it by holding it against their item and decide if it is longer or shorter than their shoe.  
The students then draw a picture of it on the correct side of the longer/shorter sheet depending on how it measured up.  
They continue to compare items to measure against their shoe until they have 2-3 drawings on each side of their sheet.

IM Commentary

The purpose of this task is for students to compare the height of two objects.  
This task would be good independent practice for students after they have been introduced to
the idea of taller and shorter in a whole group setting; see K.MD Size Shuffle for an example of how that might work. Suggestions for this task:

* The students should be told just to make a quick drawing instead of trying to trace the item on their sheet.

* The students should be encouraged to explain their findings to a partner so as to be given an opportunity to use the math vocabulary of ‘longer than/shorter than’.

* Some students may need to work in pairs to help support those that are struggling or slow in completing tasks.

Color coding the words helps the students to remember which word is which.

The Standards for Mathematical Practice focus on the nature of the learning experiences by attending to the thinking processes and habits of mind that students need to develop in order to attain a deep and flexible understanding of mathematics. Certain tasks lend themselves to the demonstration of specific practices by students. The practices that are observable during exploration of a task depend on how instruction unfolds in the classroom. While it is possible that tasks may be connected to several practices, only one practice connection will be discussed in depth. Possible secondary practice connections may be discussed but not in the same degree of detail.

This particular task helps illustrate Mathematical Practice Standard 5, Use appropriate tools strategically. During this exploration, young learners investigate the attribute of length by directly comparing two objects and deciding which object is shorter and which is longer (one of the objects is the student's shoe). Kindergartners will easily directly compare lengths in simple situations. In this case, the shoe becomes the measuring tool because it is consistently used for all comparisons the child makes. As students become proficient in this practice, they will be able to consider a tool’s usefulness and consider its strengths and limitations, as well as know how to use it appropriately. Since this may be a new experience for kindergartners, there will be learning involved as to how to position the two objects to accurately compare their lengths. The necessity of aligning endpoints can be explicitly addressed and reinforced throughout this task (MP.6). The opportunity for conversation often occurs in comparison situations (“The teacher’s pointer stick is longer than my shoe!) and provides an opportunity for students to explain which objects are longer or shorter than their shoes. (MP.3).
The students explain their findings to the teacher using the terms, 'longer than/shorter than' when comparing size.