K.MD Longer and Heavier? 
Shorter and Heavier?

Task

Materials

- Several pairs of objects (see below for how to choose the pairs)
- balance scale

Action

The teacher finds several pairs of objects that are much longer in one dimension than the other two for the class to compare. The class will compare the length and weight of each pair of objects. Some pairs should be set up so that object A is both longer and heavier than object B and some pairs should be set up so that object A is heavier but shorter than object B. In other pairs object A should be lighter but longer than object B, and for at least one pair, objects A and B should appear about the same, but differ in weight. This will show students that weight and length are separate measurements, and not always related.

The teacher will select the first pair and ask the students which is longer. The teacher can hold them side by side for comparison. The students should explain why they know one is longer.

Once students have established which object is longer the teacher will ask them to predict which object will be heavier. Ask students to explain why they predict this. Students can use the sentence frame “I predict ___ will be heavier because____.” Any prediction which is explained with reasoning is an excellent prediction!

The teacher will then place each item in one side of the balance scale and the class will watch to see which is heavier. Students can discuss if their predictions were correct.
The teacher will then repeat the activity with a new pair of objects. The teacher will take care to vary the sets so that there is a mix of heavier/shorter, lighter/longer, heavier/longer and lighter/shorter.

Prerequisite skill: understanding how a balance scale works.

This activity should be repeated on several occasions throughout the study of measurement. If a class does Boardmath this activity would be a good one for inclusion in the Measurement and Geometry section.