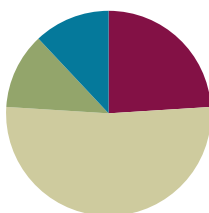


## Lesson 7

**Objective:** Compare weight using *heavier than*, *lighter than*, and *about the same as*.

### Suggested Lesson Structure

■ Fluency Practice	(6 minutes)
■ Application Problem	(3 minutes)
■ Concept Development	(13 minutes)
■ Student Debrief	(3 minutes)
<b>Total Time</b>	<b>(25 minutes)</b>



### Fluency Practice (6 minutes)

- Super Straight Lines **PK.MD.1** (4 minutes)
- Farmer Brown **PK.OA.2** (2 minutes)

### Super Straight Lines (4 minutes)

Materials: (S) Rectangular block

Note: The practice of using a straight edge to make a line develops the mathematical practice of using tools for precision.

1. Tell students that they will use a tool to make straight short and long lines.
2. Demonstrate how to use a rectangular block as a straight edge while drawing a line. Model having difficulty, holding the block while tracing. Let it slide around a little, and solicit suggestions from the class.
3. Have a student volunteer to hold the block while the teacher makes a straight line. Stop short of the end of the block.
4. Using the block, say, “I am going to make another line longer than this one. Tell me to stop drawing my line when it is longer than the first line.”
5. Repeat step 4 using *shorter than*.

Distribute blocks. Have students practice at their seats with help from a buddy to hold the block.

## Farmer Brown (2 minutes)

Materials: (T) CD *Growing Up with Ella* by Ella Jenkins (optional), picture of a tree, 5 green paper apples

Note: The familiar context and the repetition in the lyrics develop fluency in counting down. Note that students include the number zero.

Similar to M1 Lesson 34, place 5 apples on the tree, and remove one at a time. To begin, ask students how many apples Farmer Brown will have at the end. Sing the last verse, replacing the words *no more apples* with *zero apples*.

Farmer Brown had 5 green apples hanging on the tree. (Twice.)

Then, he took 1 apple, and he ate it greedily, leaving 4 green apples hanging on the tree.

(Continue each verse, counting down.)

## Application Problem (3 minutes)

Materials: (T) Large empty gift box, small gift box filled with toys

Show students the box and say, “Look at this enormous gift! What do you think is inside?” After a few guesses, ask students if they think the gift is heavy (most will). Pass the box around, and ask if it is heavy or light. Then, ask students to talk about how such a big gift could be so light. (It’s empty!) Say, “Hmm...I wonder if the gift will get heavier if we add more things to it?” Add some small toys and discuss. Then say, “What will happen if I remove some toys?” (The gift will be lighter!)



Repeat the process with a small gift that is quite heavy, first asking students to think about whether it is heavy or light, and then passing it around. Guide students to the realization that size does not determine weight.

Note: Today’s activity helps students discover through hands-on experience that small objects aren’t always light, and large objects aren’t always heavy, reinforcing learning from Lesson 6. This discovery broadens their understanding as they develop concepts about weight and make comparisons (heavier, lighter).

## Concept Development (13 minutes)

### Part 1: Concept Introduction

Materials: (T) Stack of paper cups, a set of keys on a ring, two objects that feel about the same weight as each other

1. Hold a stack of paper cups in one hand: “This stack of cups feels light to me. I wonder how it will feel if I remove some cups from the stack?” (**Lighter!**) Ask, “Now, what if I add some more cups? Is my stack lighter or **heavier?**”



### NOTES ON MULTIPLE MEANS OF REPRESENTATION:

English language learners may benefit from holding the objects in order to compare the weight of the two objects. Provide students with an opportunity to hold each object, thus connecting the concrete object to the new comparison vocabulary (heavier and lighter).

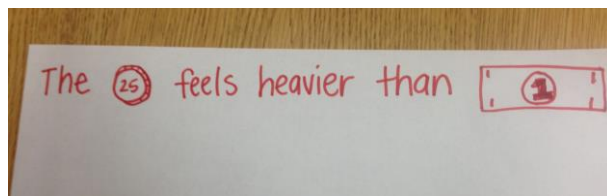
- Repeat Step 1 with a set of keys, adding and removing some to the key ring to discuss lighter and heavier.
- Now, hold a paper cup in one hand and the set of keys in the other hand. Say, “This cup feels **lighter than** the keys.” Raise the hand holding the cup. Students turn to a partner and take turns repeating the *lighter than* statement.
- Repeat Step 3 using **heavier than** with the paper cup and keys: “These keys feel heavier than the cup.” Lower the hand holding the keys. Students turn to a partner and take turns repeating the *heavier than* statement.
- Choose two objects that are about the same weight. Say, “These feel **about the same weight as** each other. I’m going to hold my hands at the same level like this to show that they feel about the same weight.”

### Part 2: Practice

Materials: (T) Chart paper to record weight comparison (*see below*) (S) Per pair: pair of objects to compare weight (quarter and dollar bill, crayon and marker, block and white board eraser, paper cup and keys, a counter and canned food)

Note: The objects gathered for today’s lesson are also used for Lesson 8. The objects must be small enough to be held in students’ hands (Lesson 7) and to fit on a balance scale (Lesson 8). Intentionally choose items that are nearly the same weight (quarter and eraser) but different enough for a balance scale to detect the difference. Also, choose items such that the smaller item is heavier (quarter and dollar bill). This provides the opportunity to clarify misconceptions about weight in Lesson 8.

- Give each pair of students two objects to compare. Say, “With your partner, decide which object is heavier. As I walk around, show me which object feels heavier by lowering the hand with the heavier object.”
- Give students time to confer, and then walk around as students show with their hands which object is heavier.
- Say, “Now, when I walk around, I want the other partner to show me which object feels lighter by raising the hand with the lighter object.”
- Call each pair to the front of the room, and encourage all students to listen carefully as each student makes a *heavier than*, *lighter than*, or *about the same weight as* statement about their two objects.
- Chart their informal weight comparisons by writing rebus sentences on the chart paper, such as, “The quarter feels heavier than the dollar bill. The dollar bill feels lighter than the quarter.” Students check these comparisons using a balance in the next lesson.



**Student Debrief (3 minutes)**

**Lesson Objective:** Compare weight using *heavier than*, *lighter than*, and *about the same as*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**heavier/heavier than**, **lighter/lighter than**, **about the same weight as**).

- Did anything surprise you when you were guessing which objects were heavy and which were light? Why?
- Explain to a partner how a gigantic box could be **lighter than** a small box.
- Can you use **heavier than** and lighter than to tell your partner about the ant and the elephant on the seesaw from yesterday?
- Can you think of other objects that feel **about the same weight as** a \_\_\_\_\_ (e.g., marshmallow, grape, brick, desk)?

**CENTER CONNECTION:**

Place a bin of heavy and light objects used during the lesson on the rug area. Allow students to explore the items, comparing different objects than were paired during the lesson. This gives students an opportunity to feel and compare all of the objects using their new vocabulary.