3.OA The Class Trip

Task

Mrs. Moore's third grade class wants to go on a field trip to the science museum. * The cost of the trip is $245. * The class can earn money by running the school store for 6 weeks. * The students can earn $15 each week if they run the store. 1. How much more money does the third grade class still need to earn to pay for their trip? 2. Write an equation to represent this situation.

IM Commentary

The purpose of this instructional task is for students to solve a two-step word problem and represent the unknown quantity with a variable. This task also addresses the concept of *scarcity*. The students in the 3rd grade class are faced with a scarcity of time – only 6 weeks to earn enough money for the trip. They are also faced with a scarcity of money at the end of the 6 weeks. The teacher can discuss with students the definition of scarcity – not having enough resources to satisfy your wants and possible solutions to this scarcity situation. This task is part of a set collaboratively developed with *Money as You Learn,* an initiative of the President's Advisory Council on Financial Capability. Integrating essential financial literacy concepts into the teaching of the Common Core State Standards can strengthen teaching of the Common Core and expose students to knowledge and skills they need to become financially capable young adults. A mapping of essential personal finance concepts and skills against the Common Core State Standards as well as additional tasks and texts will be available at http://www.moneyasyoulearn.org.

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 2, Reason abstractly and quantitatively. Students make sense of quantities and how they are related in a problem situation. In the task at hand, students first have to determine how much money they still need to earn to pay for their trip. They may represent what they have earned so far in several ways (creating an area model of multiplication or by breaking apart the multiplication problem into partial products). Then, they write an equation representing the problem situation. During this problem-solving process, students periodically contextualize the problem by connecting the mathematical symbols back to the context. Thus, students build meaning for the mathematical symbols by reasoning about the problem rather than memorizing an abstract set of rules or procedures. Problems that begin with a context and are represented with mathematical objects or symbols are also examples of modeling with mathematics (MP.4).

Solution

a. We can start by finding out how much money the students can make at the store:
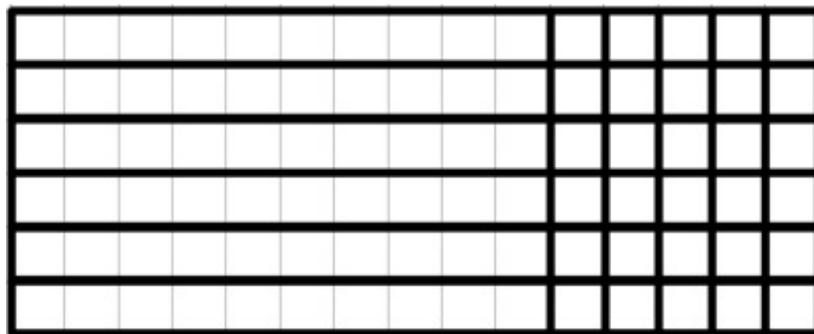
$$6 \times 15 = 6 \times 10 + 6 \times 5 = 60 + 30 = 90$$

Since

$$245 - 90 = 155$$

the students still need $155 dollars for the field trip.

b. We can let n stand for the amount of money they still need. We know that the amount they can make at the store is 6×15 and the amount they need to raise is 245, so one equation is

$$245 - 6 \times 15 = n$$

Another possible equation is

$$6 \times 15 + n = 245$$