

# Social, Emotional, and Academic Development (SEAD) Lesson Plan for Mathematics

## GRADE LEVEL AND MATH STANDARD(S)

### Grade 5

**5.NBT.A.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and  $1/10$  of what it represents in the place to its left.

## INTRODUCTION

This task was adapted from [Illustrative Mathematics](#) and utilizes the lesson planning template from [Stride 3: A Pathway to Equitable Math Instruction: Creating Conditions to Thrive \(pages 13–14\)](#).

The lesson is intended to:

- Connect to the social, emotional, and academic development (SEAD) theme of discourse and belonging in mathematics in order to promote equitable instruction.
- Deepen student understanding of place value.
- Understand how to fluently solve 10 times as much as a quantity.
- Honor students' current knowledge as they enter into the task and allow multiple pathways to problem solving.
- Provide strategies to support students learning English.

## SEAD THEME

<input type="checkbox"/>	Identity
<input checked="" type="checkbox"/>	<b>Discourse</b>
<input type="checkbox"/>	Agency
<input checked="" type="checkbox"/>	<b>Belonging</b>

## SMP(S) TO SUPPORT THE SEAD THEME

<input checked="" type="checkbox"/>	<b>SMP 1: Make sense of problems and persevere in solving them.</b>
<input type="checkbox"/>	SMP 2: Reason abstractly and quantitatively.
<input type="checkbox"/>	SMP 3: Construct viable arguments and critique the reasoning of others.
<input type="checkbox"/>	SMP 4: Model with mathematics.
<input type="checkbox"/>	SMP 5: Use appropriate tools strategically.
<input type="checkbox"/>	SMP 6: Attend to precision.
<input checked="" type="checkbox"/>	<b>SMP 7: Look for and make use of structure.</b>
<input type="checkbox"/>	SMP 8: Look for and express regularity in repeated reasoning.

## LESSON OBJECTIVE/GOAL

Objective of lesson: Students will construct mathematical arguments and engage in the reasoning of others.

## STEPS

### Rich Task:



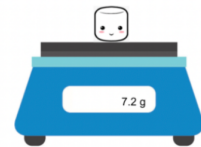
I can make sense of problems and persevere in solving them.

Srta. Calderón has a digital scale. She was curious, so she weighed a marshmallow.



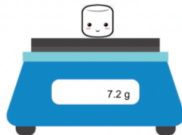
I can make sense of problems and persevere in solving them.

Srta. Calderón has a digital scale. She was curious, so she weighed a marshmallow. The marshmallow weighed 7.2 g.



I can make sense of problems and persevere in solving them.

Srta. Calderón has a digital scale. She was curious, so she weighed a marshmallow. The marshmallow weighed 7.2 g. How much would you expect 10 marshmallows to weigh?



### Task adopted from Illustrative Mathematics

- Kipton has a digital scale. He puts a marshmallow on the scale and it reads 7.2 grams. How much would you expect 10 marshmallows to weigh? Why?
- Kipton takes the marshmallows off the scale. He then puts on 10 jellybeans and then scale reads 12.0 grams. How much would you expect 1 jellybean to weigh? Why?
- Kipton then takes off the jellybeans and puts on 10 brand-new pink erasers. The scale reads 312.4 grams. How much would you expect 1,000 pink erasers to weigh? Why?

### Launch:

- Share SMP 1 in student-friendly language: *“Today we will focus on our ability to make sense of problems. We will focus on our perseverance and our ability to not give up.”* Read and/or write lesson objective: “I can make sense of problems and persevere in solving them.”
- Use step-by-step prompting with students to choral read and reflect on questions. Support students by drawing attention to key language and quantities in the problem, and provide sentence frames to students to support partner talk. (*EL Strategy, [Mathematical Language Routines](#)*)

Questions to pose to students:

- What is our important quantity?
  - What information would you like to know?
  - What new information did you learn?
  - What mathematical questions could you ask?
- Engage students in think-pair-shares to support engagement, understanding, and

making sense of the problem from the questions above. Provide sentence frames for students to respond. (*EL strategy*)

- An important quantity is \_\_\_\_\_.
- I would like to know \_\_\_\_\_.

### **Student Exploration:**

4. Students solve the problem showing their thinking with words, pictures, and/or equations. This can be done individually, in pairs, or in small groups based on student need. You may also differentiate by inviting students to find the expected weight for 100 marshmallows, the expected weight for 1000 marshmallows. This will extend students' thinking beyond the problem posed to the class. You can also provide a new item and weight such as the original task in [Illustrative Mathematics](#).
5. Move around the groups to monitor student work, ask clarifying questions, support students as needed, and select students with different strategies/representations to share with the whole class (for example, a student who drew a picture and used repeated addition to add 7.2g or one who used multiplication).

### **Lesson Summary:**

6. Ask the 2–3 previously selected students with different strategies/representations to share their work with the whole class. Support this share-out time with sentence frames. Pause at times to involve other classmates to reflect on their work and the presented work (i.e., rephrasing, building on thinking, restating).

Questions to involve classmates:

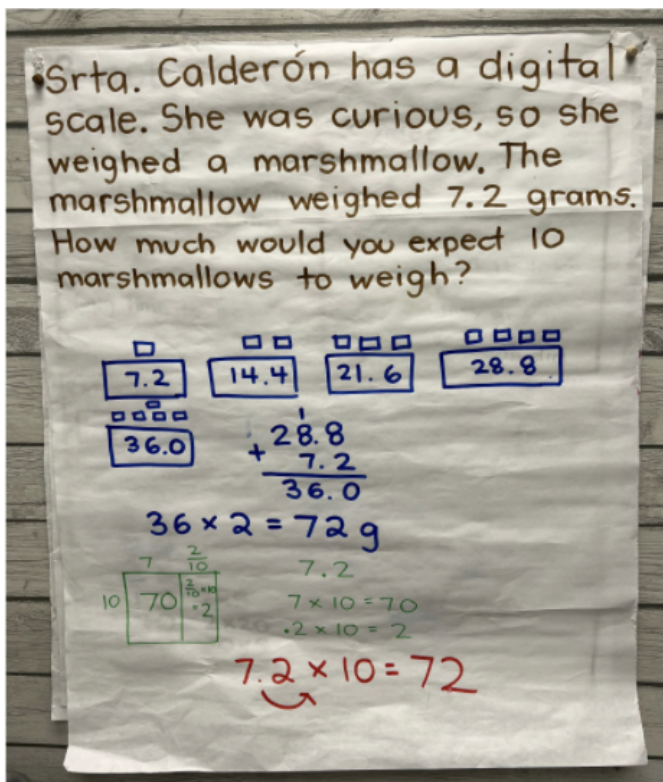
- Did anyone else start their work in the same way?
  - Who can repeat what \_\_\_\_\_ said?
  - Take a look at your own work. What is something that is the same or different from this strategy?
7. Draw attention to place value connecting the conversation to a student's model that used multiplication. If students did not use a place value chart, this is a moment where you can introduce it. Draw students' attention to recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right.
  8. Invite groups of students to find a small object that they are curious about how much it weighs. Have students weigh the object with a digital scale. After weighing the object, have them find the expected weight of 10 of those objects, 100 of those objects, or even 1000 of those objects. This is an extension to the task, but it elevates students' sense of belonging. They are encouraged to explore their curiosity within math.

### **SUMMARY/REFLECTION OF LESSON**

It was evident that students were engaged in discussing their strategies as well as the strategies of others throughout this lesson. The task resulted in different representations, including some students who approached the task with multiplication and their understanding of place value.

This led to the second part of the task: the exploration of items they were curious about, where the focus was the SEAD theme of belonging. When I pulled out my digital scale and asked table groups to find one item they were curious about, the excitement was elevated in the classroom. Some of the items my students were curious about included a writing implement, dice, and a Salvadorian necklace. Although this part of the task was intended as an extension, it was the highlight of the lesson and allowed all students to practice the math content standard as a class, focusing on how place value can help us determine 10, 100, or even 1000 times a quantity. This task was also extended when we focused on SMP 7, with students noticing repeated structures and patterns within place value.

Charted strategies of student work shared during whole group.



Objects of curiosity from table groups.

