

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

GRADE LEVEL/COURSE AND MATH STANDARD(S)

Grade 2

2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.

INTRODUCTION

Accompanying slide deck for the lesson can be found [here](#).

The lesson is intended to:

- Connect to the SEAD theme of agency.
- Allow students to reflect on the different math tools they have at their disposal and determine which tool will be most useful to represent three-digit numbers.
- Promote student agency by establishing the teacher as a facilitator, posing the problem and supporting students to determine what tools can support them in their task.
- Engage students in the Standards for Mathematical Practice (SMP) 5: Use appropriate tools strategically.

SEAD THEME

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

SMP(S) TO SUPPORT THE SEAD THEME

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> | SMP 1: Make sense of problems and persevere in solving them. |
| <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 checked="" type="checkbox"/> | SMP 5: Use appropriate tools strategically. |
| <input type="checkbox"/> | SMP 6: Attend to precision. |
| <input type="checkbox"/> | SMP 7: Look for and make use of structure. |
| <input type="checkbox"/> | SMP 8: Look for and express regularity in repeated reasoning. |

LESSON OBJECTIVE/GOAL

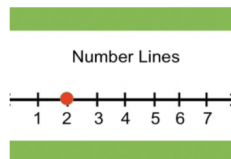
Objective of lesson:

I can pick the right tools to represent three-digit numbers in different ways.

STEPS

1. Brainstorm with students around the type of tools they use in mathematics. What tools do we use? Why do we use them? Do some tools work better than others for specific math tasks?

Math Tools



2. Teacher sets the stage for learning by introducing the learning target and success criteria.

Learning Target:

I can pick the right **tools** to **represent** 3 digit numbers in different ways.

Success Criteria:


I used **tools** (blocks, pictures, numbers, and more!) to **represent** 3 digit numbers.

- Discuss with students about what it means to use math tools, SMP 5.

Mathematicians use math practices!

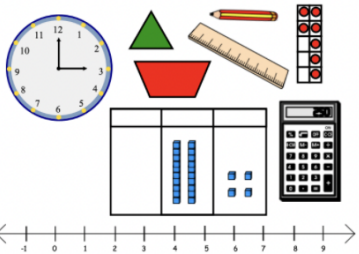
Use appropriate tools strategically.

Mathematical Practice 5



I can use certain tools to help me explore and deepen my math understanding.

I have a math toolbox.



- I know **HOW** and **WHEN** to use math tools.
- I can reason: “Did the tool I used give me an answer that makes sense?”

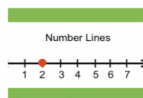
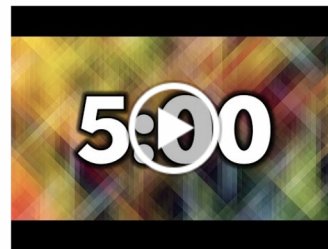
- Say the number “253” to students. Tell them that they are going to use their tools to represent this number in as many different ways as they can think of. It is up to them to choose the different tools they will use to represent the number.

Some possible representations will include writing the number with numerals, using base 10 blocks to model the number, drawing a picture of a base 20 model on a whiteboard or paper, etc.

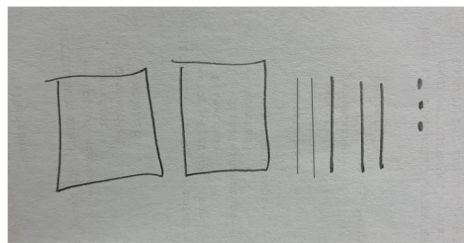
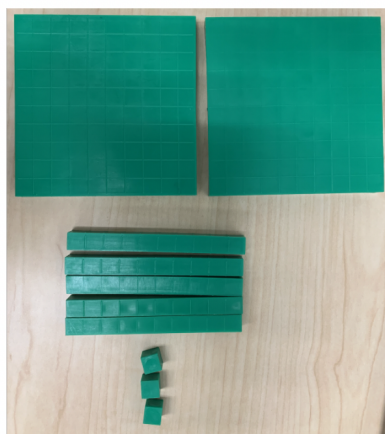
Some tools will be excellent for representing such a large number, and some tools will be inefficient. It is up to the students to determine which tools will be best.



What tools can I use to represent this number?



5. Give students time to work on their own to represent the given number in different ways. Be walking around the room checking in with students as they work. Some questions to pose to students:
 - Why did you choose this tool to help you represent the number?
 - What are some tools that you thought wouldn't be good for representing this number? Why?
6. While you are walking around the room, be looking for student samples of different ways to represent the number. Make note of which students you will be asking to share their work with the class.



253

7. Back in whole group, ask students to share their strategies. Ask them why they chose the tools they chose. Discuss with the class about which tools they thought were not good for representing the number and why.
8. Did we meet our success criteria? How do we know?

SUMMARY/REFLECTION OF LESSON

The focus of this lesson is for students to take the lead in their own learning. I tried to allow students the freedom of exploring different tools for representing three-digit numbers without interjecting my biases towards which tools will be best.

It was also important for me to be circulating and looking for specific tools; namely, base 10 models as well as visual representations. These are the tools I was hoping students would utilize.

The other important discussion we had was at the end of the lesson once we returned to whole-group structure. This is where we discussed which tools didn't work well to represent numbers. I posed this question to the class and allowed them to express their thinking. It turned into a pretty good discussion on which tools worked well for this task, which tools didn't work well, and why.

This lesson did seem to relate quite nicely to the SEAD theme of agency. Students had a lot of freedom during the exploration, and some weren't quite sure what to do with it! I made sure to ask guiding questions to help them get going without ever telling them what to do. That can often be a challenge to teachers as we want our students to be successful and it is so obvious to us what they should be doing, but since developing agency was one of the purposes of this task, I had to really make sure that I was only asking questions and never "giving directions" on what to do. Questions like, "What are some ways you could represent the 100s? 10s? 1s?" and "What are some tools you have available to you to represent the number?" and "How could you use the base 10 cubes to represent the number?" can help nudge your students along the right path.