

Micro Lesson #1

I. Rationale:

The micro lesson provides students with strategies on rounding and its importance to real-world applications. From previous experiences, I have observed students struggling with place value, affecting students' understanding of rounding as they are closely related. Throughout the lesson, students use manipulatives and collaborative opportunities to evaluate rounding to the nearest 10s and 100s place. It is essential to provide opportunities that align with the different learning styles in the classroom, along with exploration learning, for students to develop a deeper understanding. The lesson plan aligns with the Arizona Mathematics Standards and grade level curriculum as it provides hands-on learning experiences and higher-order levels of thinking that allow students to build on prior knowledge of place value and use the strategies to concepts such as fractions and decimals.

II. Overview

Grade Level: 3rd

Subject(s): Mathematics

Topic of Study: Rounding whole numbers to the nearest 10 or 100

Time Allotment: 30 minutes (Small group lesson with two students)

Standards:

- 3.NBT.A.1: Use place value understanding to round whole numbers to the nearest 10 or 100.

Objectives:

- The student will be able to identify the place value of whole numbers to round to the nearest 10 or 100.

Reflection: Assessing Prior Knowledge and Planning Instruction

- What do the students need to know prior to the lesson?

Students need to know the ones (1), tens (10), and hundreds (100) of place values and how to show their understanding on a number line and with base ten blocks.

- How will prior knowledge and experience be assessed?

This lesson is effective after the teacher assesses the student by identifying place values ones (1), tens (10), and hundreds (100).

- How will you use this information in the planning process?

If the student is not able to identify the ones (1), tens (10), and hundreds (100) place values before this lesson then the micro lesson would need to be longer to review background knowledge and how to represent the place values with a number line and base ten blocks.

- When will the lesson be taught in the course of the school year? Why?

This lesson is taught at the beginning of the school year because third graders apply place value to the four operations (addition, subtraction, multiplication, and division) to solve problems such as word problems, algorithms and build foundational skills before learning fractions.

III. Implementation

Procedure:

- I do: I will start the lesson by presenting a base ten block website (<https://www.didax.com/apps/base-ten-blocks/>) with two problems (56 and 113). Students will work with a partner on a laptop to represent the two numbers. After two to three minutes, I will introduce the concept of rounding to students by asking, “What is rounding? How do we use it in our lives?” Possible responses can be with money/taxes, getting an estimate, or when doing mental calculations. I will then present the PowerPoint that discusses the rule of rounding and use the two examples from the warm-up to model rounding. I will present an open number line (<https://www.didax.com/apps/number-line/>) and a place value method to provide a variety of options for students to understand. Then ask students, “Which ten is 56 closer to, 50 or 60? How do you know?” The next example will be, “Which 100 is closer to 113 (100 or 200)? How do you know?”
- We do: I will present four examples students have not seen yet. The students will work silently for two minutes on their whiteboards and turn to their partners to discuss their solutions for one to two minutes. After students have discussed, they will show their work using one of the methods and reasoning on the computer.
 - If this was taught in a whole class, I would choose four different students to come to the smartboard to show their work, but for this lesson, each student will show their work for two problems.
- You do: I will pass out an exit ticket consisting of asking students to self-assess how they feel about this concept and six rounds to the nearest 10 and 100’s problems. Each problem will have a number line or place value method to show their work. Students will turn in their exit tickets to me when completed (in a whole class setting, students would turn in their exit tickets to the basket).

Technology Integration:

The teacher will ask students to show their work for the warm-up on <https://www.didax.com/apps/base-ten-blocks/> to review place value before introducing rounding. The teacher will also present the computer screen to the two students (if this was in a whole-class setting, the teacher would show the PowerPoint on the projector and have students interact with the activities) and ask the students to use the open number line (<https://www.didax.com/apps/number-line/>) or place value method to show their work. Students will also be a scratch piece of paper for guided practice, using one of the methods, to explain their reasoning for the four examples presented in the lesson.

Differentiated Instruction: Describe how you will differentiate the instruction for each of the following:

- Cognitive delay: Students have opportunities during “I do and We do” instruction to discuss their ideas with a peer. Students will also have a printed-off number line and base

ten block manipulatives to have a hands-on learning experience if needed. During the exit ticket, students can sit at the bean table and orally explain their work rather than writing it.

- Gifted: Students can work on a worksheet that rounds to the 10's, 100s, and 1000's place.
- ELL: Students can use the hands-on manipulatives during the lesson. Throughout the lesson, the teacher provides visuals and has students collaborate with their peers. If the student is having difficulty during independent work, they can sit at the bean table with the teacher and explain their solution instead of writing, if needed.

Reflection: Designing Instruction (InTASC Standards 7 and 8)


- How do the instructional methods align with what you know about best practices (think about your methods class)?

The instructional methods align with best practices because, while planning the lesson, I went through levels one through five out of six levels of Bloom's Taxonomy to assess student learning (remember, understand, apply, analyze, and evaluate). I also added two different methods (open number line and boxing place value) for students to use that aligned with their learning style. The online manipulatives (base-ten block, number line, and PowerPoint) allow students to interact with the materials and collaborate with their peers to explain their reasoning throughout the lesson. The mico lesson builds on students' prior knowledge and having hands-on learning experiences to develop a deeper understanding of rounding to the nearest 10s and 100s place value.

- How are you engaging students in creative and higher-order thinking?

As stated prior, when planning the lesson, I went through the first five stages of Bloom's Taxonomy to help students apply their understanding through exploration learning. For example, during "I do" instruction, I ask students to relate the base-ten blocks to introduce rounding and explain how rounding plays a role in our everyday lives. Then, doing "We do" instruction, students interact with the number line or the box place value method to solve the four examples after learning the rules of rounding. Students also identify and collaborate with their peers during "We do" instruction to assess their understanding. Lastly, students complete an exit ticket as a formative assessment to evaluate the six problems using a method of their choice and guide the teacher's instruction on whether it needs to be reviewed or expanded on.

IV. Assessment



Procedure: The formative assessment the teacher created,  Micro Lesson #1 Exit Ticket , is an exit ticket for students to self-assess and use one of the methods to demonstrate their understanding. Students will complete the exit ticket at the end of the lesson independently to guide the teacher in addressing misconceptions or if students need additional practice before moving on to the next concept. In a whole group classroom lesson, the summative assessment would be given after teaching the entirety such as rounding the 10s, 100s, and 1000s places.

Instruments: There is only one correct answer for each question, as this is a formative assessment, the teacher will be checking to see how students self-assessed themselves and if the content needs to be reviewed again.

Reflection: Planning Assessment (InTASC Standard 6)
<ul style="list-style-type: none"> How does the assessment demonstrate that the students have been successful in learning the content? <p>The assessment demonstrates that the students are successful in learning the content by using one of the methods that work best for their learning style and assessing their understanding of the exit ticket.</p> <ul style="list-style-type: none"> How does the assessment demonstrate the individual needs were met? <p>The exit ticket demonstrates individual student needs were met by applying one of the methods learned in the lesson to round to the nearest 10s and 100s place. Students observed the teacher modeling the two methods and collaborated with their peers through guided practice. The teacher monitored student discussions and used the exit ticket for students to self-evaluate their understanding with the thumbs up, middle, and down at the top of the paper and how they applied understanding to the six questions.</p>

V. Materials and Resources

In this section include any examples you have created for the students, resources (software, web links, books, crafting items, etc.), and other necessary items.

- Computer
-  Micro Lesson #1 Exit Ticket
 - Pencil
-  Micro Lesson #1 Rounding
 - Whiteboard
 - Whiteboard marker
- [Base Ten Blocks](#)
- [Number Line](#)

Reflection
<ul style="list-style-type: none"> How does your lesson meet ISTE Standards? <ul style="list-style-type: none"> ISTE Standards for Educators (The technology standards you should meet as a teacher): The technology standards were met, as the teacher, in this lesson is a designer (2.5) because the teacher uses prior knowledge of base-ten blocks to introduce the concept of rounding and the PowerPoint for students to collaborate in discussions with peers. Standard 2.6, facilitator, was met as the teacher provided online manipulatives throughout the lesson for students to interact or explore their learning and apply before independent practice. Lastly, standard 2.7, analyst, was used to guide the teacher's instruction during formal

assessments (teacher monitoring, example questions, and class discussions) during guided practice to ensure students grasp the concept of rounding or addressing misconceptions before having students work on the exit ticket.

- [ISTE Standards for Students](#) (The technology standards you should help your future students meet): The first ISTE standard for students presented in this lesson is 1.1, an empowered learner because students use manipulatives to demonstrate their learning in "I do" and "We do" instruction. Standards 1.5 (computational thinker) and 1.7 (global collaborator) are integrated into the lesson as students collaborate with peers to explain their steps and check their understanding. Additionally, specifically in this lesson, the two students I worked with showed their work on the laptop during guided instruction and broke down the steps to explain the strategy used.