**STAGE 1: PLANNING**

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| **YOUR TARGET: Standard, Goals & Outcomes**    **Teacher**: Michelle Stencil **Grade/Subject**: 3rd Grade Math  **TARGET: Unpack Your Standard**  Part 1: My Standards, Goals and Outcomes   |  | | --- | | ***Academic Standards:***: **STATE YOUR STANDARD** | | [CCSS.MATH.CONTENT.3.NBT.A.1](http://www.corestandards.org/Math/Content/3/NBT/A/1/) Use place value understanding to round whole numbers to the nearest 10 or 100.  *\*Highlight the main idea/knowledge (what) \*Underline the skills/verbs (how)* |  |  |  |  | | --- | --- | --- | | **Big Questions (Questions to frame student learning)**   * How can we determine when to round up versus when to round down? * How can we determine the tens place from the ones place from the hundreds place? * How do we round a number that has a 5 in the place we need to round? * How can we demonstrate our understanding of place value and rounding? | **Knowledge (Concepts to be understood and applied including academic language)**   * Determine which tens or hundreds a number falls between. * Demonstrate the ability to plot a number on a number line between the tens or hundreds the number falls between. * Determine which tens or hundreds the number is closer to and why. | **Skills (what you will explicitly teach)**   * The definition of place value (the value of a digit depending on its place in a number). * The definition of rounding (to change a number to a less exact number that is more convenient for computation). * How to plot a number on a number line in between the tens or hundreds it falls between. * Common rounding rules:  1. Rounding up to the nearest ten means the digit in the tens place will increase by one 2. Rounding down to the nearest ten means that the digit in the tens place remains the same. 3. When there is a 5 in the ones place, the number automatically rounds up | |  |  |  |  |  | | --- | | **Student Learning Goal**: **STATE YOUR GOAL FOR THE STUDENTS TO SHARE** | | Students will be able to use their knowledge of place value to round whole numbers to the nearest tens or hundreds place. Students will demonstrate this understanding through plotting a given number on a number line and discussing why a certain number rounds up or rounds down. | | ***Student Social-emotional Goal (LEARNER):*** | | Students will demonstrate appropriate listening skills (i.e. keeping their hands and feet to themselves, raising their hand to speak, having their eyes on the speaker and voices off unless asked to participate).  Students will demonstrate appropriate interpersonal skills when working with a partner or in groups (i.e. using respectful sentence stems, such as, ‘I agree or I disagree because…” “Can you explain more…?”, sharing materials with their partner, and encouraging their partner through kind and constructive language). | | **Barriers to learning (LEARNER): (level of literacy;language proficiency levels; funds of knowledge; attention span)** | | Out of the ten students in this class, two students (Fabiola and Mario) are English Language learners, scoring at the Intermediate level on the CELDT test. In addition, two students are said to have problems with attention and impulsive behaviors, with one being officially diagnosed on the autism spectrum (Bianca and Tate). There seems to be a mix of proficiency levels, with one student reading 3 grade levels above his current grade (Melvin) and other students needing extra support to learn new concepts. Lastly, there are at least with two students with known Adverse Childhood Experiences (ACEs), with Dwayne’s parents just recently separating and James showing signs of potentially being homeless (comes in dirty and unkempt, is hungry, and not forthcoming about where he lives). In short, this class has a diverse range of background experiences, language proficiencies and interests that contribute to many different styles of learning and performance levels. | | **Common Misconceptions (LEARNER & TARGET): (Subject-matter specific; Related to academic standard; Knowledge gaps; Student confusion; multiple meanings; cultural differences; misunderstand)** | | There are two common misconceptions with this lesson, that were demonstrated by the results of their tests. First, some students seemed to incorrectly answer the questions where they needed to round down. Many students rounded up or left the number the same. Sometimes when students have to round down, they will also subtract a number from the tens place instead of leaving it the same. For this class, when to round down and how to round down present a common misconception. Secondly, how to round to the nearest ten with a ‘5’ in the ones place also presented a point of confusion. The rounding rule that states that a number with a ‘5’ in the ones place automatically rounds up needs to be reviewed. |   Part 2: My Class |
| **My Classroom Composite: (TEACHER & LEARNER) Whole group (Broad needs of students; observable patterns & trends; language and literacy subgroups; digital/technology fluency; emotional regulation)**  There are ten students in this third -grade class, with six of them being boys and four of them being girls. Four students identify as Caucasian, one student identifies as Filipino, three students are Hispanic and two students identify as African American.  Two students are classified as English Language learners and one student has an IEP for being on the Autism Spectrum.  Majority of the students are said to display positive attitudes towards math and school in general. In addition, they are said to participate by asking questions or doing their homework. |
| **Accommodations/Adaptations/Intervention (Teacher, Learner, Instruction, Management)**  **Using the assessment you created, group your students that have similar learning challenges and plan appropriate accommodations or adaptations to meet their needs.**  **English Language Learners:** Fabiola and Mario are said to be at the Intermediate level on the CELDT test. They both scored blow 50% on the math assessment given and are said to “watch their peers closely before beginning their work.” Pre-teaching new concepts to these two students before teaching the concept to the class as a whole might be of benefit to these students who struggle with learning new concepts. In addition, though they scored at the Intermediate level on the CELDT test, technical vocabulary found in topics such as math, are harder to acquire. Key vocabulary such as “place value,” and “rounding” should also be pre-taught to these students and should have visual cues to accompany their definitions.  **Students with limited attention span:** Bianca and Tate are said to have trouble maintaining attention, with Tate also demonstrating impulsive behaviors. Students with attention issues might benefit from more kinesthetic learning accommodations, such as sitting in a rocking chair, or squeezing a stress ball during portions of the lesson where there is more sitting and listening. Secondly, brain breaks could be used for the whole class and would specifically benefit these students. Brain break ideas include a GoNoodle song, jumping jacks, taking a walk around the classroom and so on. Lastly, these students might have to be taught this concept in parts, and not all at once. Pulling these students for 5-10 minute intervals and doing mini-lessons to teach this concepts might help maximize the attention they can give and ensure their participation for the brief time they are engaging in direct instruction. |

**(TEACHER, LEARNER, TARGET, ASSESSMENT, INSTRUCTION, MANAGEMENT),**

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| **Multiple Means of Representation**  **(modeling & practice)[[1]](#footnote-1)**  Simultaneously | **How will the content be presented/shared in multiple ways to highlight critical features, represent different formats, media types and cultural diversity? How will you monitor and assess understanding of representation?**  Students will be called to the carpet with their math journals for a lesson on rounding. Students will be told that they are learning the rules for rounding in this lesson. A definition for rounding will be reviewed by asking a student to provide the definition (providing an estimate of a number to make it easier to work with). The Rounding rules will then be explained with a visual aid of the Rounding Rollercoaster and a rhyme. The Rhyme, “Find the digit, look next door. Five or higher, add one more. Four or less, let it rest” will be chanted and repeated by students. Students will draw their own Rounding Rollercoaster in their journals to use. Students are asked to visualize a rollercoaster climbing up a track. The rollercoaster will slide back down the track if it doesn’t get high enough on the track (i.e. makes it to number 4 or less on the track). However, the rollercoaster will roll forward if it gets high enough (i.e. makes it to number 5 or higher on the track). Together, the teacher and students will go through example numbers, placing them on the Rounding Rollercoaster and deciding which side of the rollercoaster the number will slide to. To end direct teaching part of the lesson, a song for rounding can be created with your class. An example of this can be found at: <https://www.youtube.com/watch?v=kr7DdWJhfCg>  Image result for rounding rollercoaster |
| **Multiple Means of Engagement[[2]](#footnote-2)**  Simultaneously | **How will students engage in the process of new learning? How will the content become accessible, meaningful, and relevant to the learner? How will you monitor and assess this process?**  Three ways students can engage with this material include the following:   1. Students will use the Rounding Rollercoaster graphic organizer to go through practice numbers with a partner. They will plot the number given on the rollercoaster and determine if the number slides up or slides down. 2. Students will play a group game (3-4 students in a group) with a Rounding Rollercoaster mat and a car manipulative each. Students will draw a number from the pile in the middle. They will place their car on the number in the ones place if they are rounding to the nearest ten or the tens place if they are rounding to the nearest hundred. If their car slides back down, they don’t get a point. If their number slides over the rollercoaster, they get a point. This can be turned into a cooperative game, with each group trying to get 10 points for their team within a certain amount of time. 3. Lastly, to incorporate technology, students will participate in a computer- generated Jeopardy session with their groups. Each group will be a team for Jeopardy. A category for Rounding Vocabulary Words, Rounding Rules and Rounding Sample Problems for Tens and Hundreds will be created. Going through these problems, rules and definitions will be a great review utilizing technology. |
| **Multiple means of Expression[[3]](#footnote-3)**  **(practice & assessment)**  Simultaneously | **What principles of choice for the product of learning will you accept? How will you provide a space for communication, creativity, critical thinking, and collaboration (4 C’s)?**  **Which measures will you use to assess products of learning?**  Three ways students will show their mastery of rounding include:   1. Students will submit a group paper following their Rounding Rollercoaster game. Students will make their own ramp on the poster, write down the rounding rules and provide three example numbers with a justification of which number they were rounded to. This will allow for student collaboration and communication in understanding the rounding rules. 2. Secondly, the teacher will collect and analyze data about misconceptions of rounding rules and terms through the jeopardy game. If the teacher notices a trend across groups or within groups about which questions are being missed, this particular rule or term can be retaught in a mini-lesson. 3. Lastly, each student will fill out a short exit ticket on their way out. This ticket will have 5 numbers that need to be rounded to either the nearest tens or hundreds place. By collecting these exit tickets, the teacher can see which students have mastered the concept, which students need more review and which problems are the hardest for students (i.e Is it the problems with a ‘5’ in the ones place? With three- digit numbers?). |
| **Managing the Classroom Environment** | **How will you manage the classroom/setting so students transition successfully through instructional stages, and student groupings? How will you create an optimal learning environment (space, time, pacing, interactions, expectations, assessment)?**  During the direct teaching portion, students will be expected to sit in their own space, keeping their hands and feet to themselves. Students will be expected to raise their hands for comments and questions. Students will be expected to keep quiet mouths unless prompted to answer a question. Students will also be expected to track the speaker with their eyes to fully engage in active listening.  After the direct teaching portion, students will transition into group time. Groups will be randomized using the Kagan Team Tools software. During the group work/partner time, students are expected to use positive, kind and constructive language. Students are expected to attempt to solve their own conflicts before bringing them to the teacher. They will also be expected to share materials, such as the car manipulatives and poster making supplies.  For student misbehavior during any portion of the lesson, the Cognitive Approach to classroom management will be utilized. This approach focuses on the student’s ability to use reason to identify and assess his/her actions in school, utilizes logical consequences instead of punishments, and helps foster a supportive and reflective environment versus an environment of fear. Students will be asked about what caused their behavior and how they can make a better choice to solve the problem. This approach allows for the incorporation of students with IEPs or cultural differences because the teacher is always looking to the student to help assess and solve the situation together. |

**STAGE 2: TEACHING**

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| ***DAILY AGENDA: WHAT WILL YOU USE TO MANAGE DAILY INSTRUCTION***  **WHAT IS YOUR LEARNING MAP SEQUENCE FOR DAY 1?**  Students will engage in an introductory lesson on rounding, being provided with new vocabulary terms and rounding rules. This direct teaching portion will be 15 minutes. In addition, during the direct teaching portion of the lesson, students will be provided with a Rounding Rollercoaster graphic organizer to help them visualize the rounding rules. Students will draw their own rollercoasters in their math books and go through several practice problems with the teacher and their peers. If time permits, students can create a song, chant or rap to help them remember the rounding rules.  After the direct teaching portion, students will work in small groups, playing a cooperative game with a Rounding Rollercoaster mat and car manipulatives. They will have 20 minutes to play the game and create a poster explaining the rounding rules and providing three examples with justifications.  Lastly, after group practice, students will end the day by playing a quick 10 minute rounding jeopardy game with the whole class in their groups.  **WHAT MATERIALS WILL YOU USE?**  Teacher will use math journals and a Rounding Rollercoaster graphic organizer for the direct teaching portion.  Teacher will provide a Rounding Rollercoaster mat and 3-4 car manipulatives per group for the group game.  Lastly, teacher will utilize a computer- generated jeopardy game that will be projected for students to play at the end of the day.  **HOW WILL YOU ASSESS STUDENT LEARNING?**   1. Students will submit a group paper following their Rounding Rollercoaster game. Students will make their own ramp on the poster, write down the rounding rules and provide three example numbers with a justification of which number they were rounded to. This will allow for student collaboration and communication in understanding the rounding rules. 2. Secondly, the teacher will collect and analyze data about misconceptions of rounding rules and terms through the jeopardy game. If the teacher notices a trend across groups or within groups about which questions are being missed, this particular rule or term can be retaught in a mini-lesson. 3. Lastly, each student will fill out a short exit ticket on their way out. This ticket will have 5 numbers that need to be rounded to either the nearest tens or hundreds place. By collecting these exit tickets, the teacher can see which students have mastered the concept, which students need more review and which problems are the hardest for students (i.e Is it the problems with a ‘5’ in the ones place? With three- digit numbers?). Sample Exit Ticket provided below. |

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| Rounding Exit Ticket  Round to the Nearest Tens Place (draw a number line or the Rounding Rollercoaster for your work)   1. 25 \_\_\_\_\_\_\_ 2. 37 \_\_\_\_\_\_\_ 3. 13 \_\_\_\_\_\_\_   Round to the Nearest Hundreds Place (draw a number line or the Rounding Rollercoaster for your work)   1. 107 \_\_\_\_\_\_\_\_ 2. 261 \_\_\_\_\_\_\_\_   \*Bonus: What is the definition of Rounding? |

**STAGE 3: ASSESSING/REFLECTING**

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| WHAT EVIDENCE OF STUDENT LEARNING HAVE YOU COLLECTED?  I collected assessments from the ten students in the class. The assessment included 11 questions, 10 of those questions asking students to round two or three- digit numbers to the nearest tens or hundreds place. The final question involved time lapse and then asked students to round the difference in time for an estimate of how many minutes had passed during the soccer game. I also took note on their behaviors during the test, noticing that some students seemed to watch their peers closely before beginning their test and that others seemed to get frustrated or distracted easily. Through these formal and informal assessments of academic and social/emotional performance during the assessment, I created an assessment analysis to interpret the data.  HOW WILL YOU ANALYZE THIS EVIDENCE?  After scoring the math assessments for the ten students, I constructed a line graph depicting their scores. Half of the class mastered 80% of the material. The remaining students received 63% or lower on this assessment. Being in Teach for America, the goal for student performance is that 80% of your students would learn 80% or more of the content. With this goal in mind, this class did not meet that target for this assessment.  In addition to their raw percentage score, I analyzed their work to find common student misconceptions in regards to the rounding concept being taught. Common misconceptions I saw across the class involved rounding with a 5 in the digit next to the digit being rounded, and a lack of understanding about how to round three -digit numbers to the nearest tens place. Lastly, numerous students showed a lack of proficiency with the time lapse question, many showing work that demonstrated they were confused about how to solve these types of questions.  Lastly, I collected information about their language proficiencies, attitudes/motivation levels, and other factors such as home life. It was interesting to note that students learning English and students with Adverse Childhood Experiences (ACEs) performed worse on this assessment.  WHAT INSTRUCTIONAL DECISIONS CAN YOU MAKE AS A RESULT OF YOUR ANALYSIS OF THE EVIDENCE?  After analyzing the data, which showed that only 50% of my students learned 80% of more of the material, it is clear that this lesson needs to be retaught with different instructional methods. Perhaps having mini lessons for the groups of students based around the common misconceptions that emerged from their work would be beneficial. In addition, doing more scaffolding with these problems using the “I do, we do, you do” method needs to occur, as they showed that they are not ready to be individually assessed on the concept of rounding to the nearest tens or hundreds place. Lastly, instructional supports for the students with IEPs and students learning English need to be put in place to ensure that a gap in student performance based on these characteristics does not continue to occur. These students are just as capable as scoring at the top of the class, but might need more support to get there, such as pre-teaching technical vocabulary or teaching this lesson in mini lessons to take advantage of their attention spans. |

**STAGE 4: APPLYING**

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| ***My Personal Reflection:***  ***What new information did I get about my students in relation to their learning preferences?***  Based on the data given, it seems that some students need certain accommodations to enhance their learning. Both Fabiola and Mario were said to be learning English and watch their peers before beginning their work. They might benefit from having a bilingual peer buddy to do work with or a small group where they can collaborate, gain confidence and acquire the clarity in directions or concepts they need. In addition, Tate and Bianca are said to get easily distracted. They might need more kinesthetic learning forms, even just giving them a Rubik’s cube or stress ball to manipulate while listening to the lesson. Also, these students might need a quiet corner to go to for a break during the lesson if they are having a hard time focusing for sustained periods of time. Lastly, it was noted that a few of these students become frustrated with math and don’t demonstrate confidence when learning new math concepts. This shows me that they need an environment where they can experience daily wins and successes in math, even if they start small. This class needs an environment where they feel encouraged, supported, safe to make mistakes and like true mathematicians.  ***How will I use this information to plan my future instruction?***  My future instruction will include numerous supports for the students struggling with the concept being taught. To begin with, small groups will be created off of the data accumulated, so that groups of students can be pulled back with the teacher for mini lessons to reteach certain misconceptions and clarify the rounding rules for these students. In addition, visual cues and the use of pre-teaching technical vocabulary will be implemented for the students learning English. More partner sharing, group work and math talks will be implemented so students can offer constructive feedback to peers, learn new strategies from their peers and feel like they are tackling the math concepts communally, rather than individually, which might be daunting for some students. These strategies will hopefully build metacognition so that the students can recognize their own misconceptions and strategize how to clarify them. Lastly, brain breaks will be used in the middle of lessons to help the students regain focus when they are struggling to maintain it.  ***How effective were my practices? What will I keep, what will I improve and what will I discard?***  Considering that this lesson was not taught to a group of students, it can’t be discerned whether or not my teaching practices and the learning map I outlined were effective or not. However, based on the student data given at the beginning of this project, it seems clear that the lesson that was taught to these students before the assessment given was not effective. With only half of the class learning 80% or more of the material, majority of the class did not master the concept of rounding to the nearest tens or hundreds. It would be interesting to see what was taught in the lesson given to the students in order to know what worked well and what didn’t with these students. This lesson definitely requires reteaching as mentioned before, which means small groups or clarification around the misconceptions that emerged need to be addressed. In addition, very few of the students understood how to solve the time lapse question, so this concept also needs taught in a different and improved manner. I think that the learning map I outlined above tries to take in to account some of the perceived weaknesses with the first lesson, such as taking into account students with IEPs, students learning English and general student attitudes and capabilities in this class.  ***What new understanding do I have about my own teaching practices?***  After doing numerous learning maps over the progression of this credentialing program, I now understand that it is important to take specific learner groups, such as students learning English or students with IEPs, current student data and student preferences into account when lesson planning. Certain accommodations can be made when the strengths and areas of need, academically and behaviorally, are clearly outlined in the learning map. The learning map should reflect these strengths and needs through malleable teaching practices, and multiple forms of representation, engagement and expression of the standards being addressed.  ***What have I learned about myself as a teacher?***  I have learned that in order to be an effective teacher to all of my students, I need to go out of the traditional way of teaching in a one size fits all approach and adapt more culturally relevant, adaptive and flexible learning models. Having a tool kit of resources for how to teach different subgroups of students or how to meet certain language or behavioral needs would be important so that every student feels engaged and supported. I loved trying different methods of engagement with my own students and saw the benefits of teaching concepts like patterning through different measures, such as through the Calendar, or with stickers or manipulatives. Each student will connect with the material in a unique way, and it is my job as a teacher to help unlock these different channels of learning.  **As a professional learner where do I need to continue to grow and strive for?**  As a professional learner, I am realizing that I need to learn more strategies to accommodate students with IEPs. Because my school had majority of it’s students classified as English Language Learners, I felt like I gained so much practice with how to accommodate these students. However, I only had three students who were in the process of getting an IEP for Autism/ADHD. Because they were in the diagnosis process while I was teaching them, very few resources were given to them and I had little experience seeing accommodations be put in place for them. I definitely need to grow in this area and build up a reservoir of resources, accommodations and strategies to work with these students and help support them during class. |
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1. Think about at least three ways you can represent this concept: video, role play, manipulatives. [↑](#footnote-ref-1)
2. At least three ways your students will understand, internalize, appropriate: prior knowledge, group work; technology; graphic organizer; dyads or triads [↑](#footnote-ref-2)
3. At least three ways your students will show you what they know: oral presentation; written report; research; technology-mediate projects; debates; simulation; quiz, exit ticket [↑](#footnote-ref-3)