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| **Lesson Content** | | | |
| **What Standards (national or state) relate to this lesson?**  (You should include ALL applicable standards. Rarely do teachers use just one: they’d never get through them all.) | **MAFS.5.NBT.2.7:**  **Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.** | | |
| **Essential Understanding**  (What is the big idea or essential question that you want students to come away with? In other words, what, aside from the standard and our objective, will students understand when they finish this lesson?) | EQ: How do we solve real world problems with whole numbers and decimals?   * Students should understand how to add and subtract decimals. * Students should understand which operation to use when working with decimals based on what scenario they are given. * Students must be able to appropriately solve for 2 different operations in one problem according to the given real world scenario. | | |
| **Objectives- What are you teaching?**  (Student-centered: What will students know and be able to do after this lesson? Include the ABCD’s of objectives: action, behavior, condition, and degree of mastery, i.e., "C: Given a sentence written in the past or present tense, A: the student B: will be able to re-write the sentence in future tense D: with no errors in tense or tense contradiction (i.e., I will see her yesterday.)."  Note: Degree of mastery does **not** need to be a percentage.) | Given a Request for proposal from J.A. Biztown and real world retail scenarios, students will be able to create a business plan and menu for a lemonade stand and use newly learned mathematical decimal skills, such as addition and subtraction of decimals, to repay loans and calculate profit. | | |
| **Rationale**  Address the following questions:   * Why are you teaching this objective? * Where does this lesson fit within a larger plan? * Why are you teaching it this way? * Why is it important for students to learn this concept? | * Students have already learned to order and compare their decimals, they now need to be able to perform operations for them. * This lesson focuses mostly on adding and subtracting decimals, a skill that will be needed for the students will be able to multiply and divide them, as the corresponding operations are related. (Ex: multiplication= repeated addition) * This lesson is being taught this way because students will soon be taking a field trip to J.A. Biztown that will require them to apply for jobs, run businesses and conduct accurate financial transactions. Since money is represented using decimals, this skill is relevant to what they will be doing on their field trip. * Money is something that everyone in the world interacts with in some fashion or another. Understanding how to add and subtract money is essential for use as a basic life skill. * This lesson will span over 2-3 days | | |
| **Evaluation Plan- How will you know students have mastered your objectives?**  Address the following:   * What formative evidence will you use to document student learning during this lesson? * What summative evidence will you collect, either during this lesson or in upcoming lessons? | Summative:   * Students will answer scenario questions based on their business plan and menu.   Formative: (see step by step)   * Turn and Talk * Systematic Observations | | |
| **What Content Knowledge is necessary for a teacher to teach this material?** | * Teacher must be familiar with how to read, write and represent decimals. * Teacher must be able to compare decimals and order them. * Teacher must now how decimals relate to fractions. * Teacher must be knowledgeble about how to conduct financial transactions. | | |
| **What background knowledge is necessary for a student to successfully meet these objectives?**   * How will you ensure students’ have this previous knowledge? * Who are your learners? * What do you know about them? * What do you know about their readiness for this content? | * Students must know how to read and interpret decimal places * Students must know how to represent dollars and cents as whole numbers and decimals * Students must know operations addition and subtraction and how to apply them to a real world context. * Students have covered in previous lessons how to interpret decimal place value. They should know that moving a place value to the left means multiplying by 10 and moving a place value to the right means dividing by 10. * Students should also know from previous lessons how to order and compare fractions. * I have 43 total students; 21 in my AM class, and 22 in my PM class * My AM group has 4 ESE gifted students, 8 on level students, 9 below level students. * The AM group’s readiness for this new math concept is acceptable. | | |
| **What misconceptions might students have about this content?** | * Students may not know how or why to line up decimals in an addition equation before adding or subtracting. * Students may assume that because a number after the decimal is larger, that the decimal itself is actually larger. Students may not realize that the part of the whole is actually being divided into smaller parts. | | |
| **Lesson Implementation** | | | |
| **Teaching Methods**  (What teaching method(s) will you use during this lesson? Examples include guided release, 5 Es, direct instruction, lecture, demonstration, partner word, etc.) | I will use whole group discussion, turn and talk, and partner work for this lesson. | | |
| **Step-by-Step Plan**  (What exactly do you plan to do in teaching this lesson? Be thorough. Act as if you needed a substitute to carry out the lesson for you.)  Where applicable, be sure to address the following:   * What Higher Order Thinking (H.O.T.) questions will you ask? * How will materials be distributed? * Who will work together in groups and how will you determine the grouping? * How will students transition between activities? * What will you as the teacher do? * What will the students do? * What student data will be collected during each phase? * What are other adults in the room doing? How are they supporting students’ learning? * What model of co-teaching are you using? | Time  3:00  5:00  5:00  12:00  10:00  40:00  40:00  25:00  20:00  20:00 | Who is responsible (Teacher or Students)?  T will show/S will watch  T/S Discussion  S  Tinstructs/S do  T  T  T  T/S Discuss  T  T  S  S  S  S  S  S  S  S  S  S  S  T  S | Each content area may require a different step-by-step format. Use whichever plan is appropriate for the content taught in this lesson. For example, in science, you would detail the 5 Es here (Engage/Encountering the Idea; Exploring the Idea; Explanation/Organizing the Idea; Extend/Applying the Idea; Evaluation).  ***Problem/Challenge (Engage)-***  **Request for Proposal:**  J.A. Biz Town is requesting that you design/build a lemonade stand for them to add to the town. You must create and submit a business plan and menu for them to approve before building. J. A. Biztown will provide you with $200.00 to purchase supplies for the lemonade stand. You will need to keep track of your spending, and create a budget plan for how you will make a profit. The $200.00 provided by J.A. Biztown is a loan that must be re-paid.  **Engage:** Show [video](http://www.youtube.com/watch?v=0hJ6-Bk7dHw) about kids making a lemonade stand  ***Brainstorm/Investigate (Focus Concepts)-***  **Whole Group Discussion:**   * Have you ever seen a lemonade stand? * Have you ever had your own lemonade stand?   + What went into it? How much did you make? What did you spend?   **Turn and Talk:**   * Students will turn and talk with their table partners about what materials and supplies they will need to run a lemonade stand. * Have students create a supply list in their notebooks including supplies needed for making and selling lemonade.   **Systematic Observation:**   * Circulate, 2 minutes at each table, and observe what misconceptions students might have about needed materials and supplies.   **Whole Group Discussion:**   * Bring students back together and discuss any misconceptions * Tell the students what actual materials they will be required to use in their design of their lemonade stand menu and business plan: * Now ask students, what will you need to do to make a profit after you’ve built your lemonade stand, and re-paid J.A. Biztown for their loan?   ***Plan/Design (Blueprint)-***  **Independent Work/Group work: (students can be grouped however you’d like to meet the needs of your learners)**  **Business Plan:**   * Hand out business plan sheet.   + Instruct the students to complete their business plan worksheet.   + Circulate and try to resolve any student misconceptions or confusions about their business plan sheet.   **Menu:**   * Hand out construction paper. * Create a menu, with construction paper, of the types and sizes of lemonade you will sell at your stand. * You must have at least 3 items/sizes on your menu. At least 1 menu item must include dollars and cents. (ex: $1.50)   ***Build/Test-***   * Have students, based on their business plan, design a menu considering the criteria set in the Design portion. * Then have students test the effectiveness of their business plan, by acting out a specific scenario that includes transactions completed at their stand.   + **Scenario 1:** You have 16 customers per day. If each of these customers buys 2 lemonades, how long would it take you, at this rate, to earn back the $200.00 originally given to you to start your stand? How long would it take you to make at least $125.50 in profit?   + **Scenario 2:** Your business loan of $200.00 must be re-paid. What is the minimum number of customers you can have in order to earn $200.00? What’s the minimum number of customers you would need to make a profit of $100.00? * Students display their menu for their lemonade stand, along with their business plan, and answers to each scenario.   ***Collect/Analyze Data-***   * Students will engage in a gallery walk and write any suggestions or improvements on an index card for their classmates. * Students will also jot down ideas that they might use to improve their own design.   ***Reflect on Improvements-***   * Students will be given time to read their classmates suggestions and decide if they will need to make adjustments or improvements to their lemonade stand. * Students will be given time to make any necessary adjustments.   ***Evaluate/Justify-***   * **Students will complete a self-assessment reflecting on how the planning and implementation of the lemonade stand helped them:**   + **engage in the mathematical application of decimals.**   **as well as:**   * **how well they worked as a team player** * **how well they followed the RFP and requirements** * **how effective their business plan was in helping them make a profit.** * **The self-assessment will include giving students an index card to answer the essential question: “How can you solve real-world problems using whole numbers and decimals?”** * **It may be necessary to model for the students what you would like this entry to look like.** * **Allow students to share out their reflections and how they might use what they’ve learned in future group or STEM activities.** |
| **What will you do if…** | **…a student struggles with the content?**  **Cognitive Interview Questions:**  **What equation did you use to find the answers to your scenario questions?**  **What strategies did you use to solve?**  **Teachers will be circulating the room during their group solving time. Teachers can address any issues with content by modeling and small group re-teach with a place value chart (the way we’ve taught them to work with decimals.)** | | |
| **What will you do if…** | **…a student masters the content quickly?**  **Cognitive Interview Questions:**  **What equation did you use to find the answers to your scenario questions?**  **What strategies did you use to solve?**  **If students master content quickly, they will be encouraged to solve their scenario using a different combination of menu items.** | | |
| **Meeting your students’ needs as people and as learners** | **If applicable, how does this lesson connect to the interests and cultural backgrounds of your students? Our students come from low SES and most of their parents work 2 and 3 jobs to pay bills. They are looking for skills that can be applied in the workforce. Also, students are going to be taking a field trip to J.A. Biztown where they will be responsible for working for an establishment and completing financial transactions.** | | |
| **If applicable, how does this lesson connect to/reflect the local community?**  **J.A. Biztown is actually part of the local community. It is right down the block from our school, and provides many opportunities to teach students about jobs and business and in turn is preparing students to one day be a part of the local economy.** | | |
| **How will you differentiate instruction for students who need additional challenge during this lesson (enrichment)?**  **Students are provided with graphic organizers of the plan and sample menus. All students will be issued these materials, but discussion questions will be scaffolded and students will be called on selectively based on their readingess to answer.** | | |
| **How will you differentiate instruction for students who need additional language support?**  **Based on level of speech acquisition, students will be called on selectively to participate in class discussions.** | | |
| **Accommodations (If needed)**  (What students need specific accommodation? List individual students (initials), and then explain the accommodation(s) you will implement for these unique learners.) | **Translated copies of these plans will be provided. Also, ELL students receive support from a paraprofessional during this time. Students will also be selectively grouped.**  **R. Will has ESE para support and place value chart w/decimal place.**  **N.S. will have ELL para support and translated copies of materials and a Spanish/English dictionary.**  **S.G. will have ESE para support and place value chart w/decimal place.** | | |
| **Materials**  (What materials will you use? Why did you choose these materials? Include any resources you used. This can also include people!) | * Business plan * Construction Paper * Pencil * Computer w/internet access for video   These materials were chosen because they are easily acceseeible, relevant to the activity, and easy to reproduce for copies. Paras are scheduled to be in our class during this time, show they will be grouped with appropriate students. | | |