Lesson Activity Plan 7

1. Content: Describe ***what*** it is you will teach. What is the content?

In this lesson, students will use scientific notation operations to solve word problems. I will also teach students to recognize “E” as the notation for scientific notation on a calculator.

1. Learning Goal(s): Describe what specifically students will ***know*** and ***be able to do*** after the experience of this class.

Students will know that the notation nEm on a calculator means n x 10m in real life. Students will be able to use exponent rules and scientific notation operations to solve word problems that include real-world contexts.

1. Rationale: Explain how the content and learning goal(s) relate to your Curriculum Unit Plan learning goals.

Applying the skills learned in this unit to real-world contexts is one of the main goals of this unit. Students will work through a series of problems that test their ability to use those skills to work with both regular notation numbers and scientific notation numbers. As per the curriculum, students must also become familiarized with the different ways of expressing scientific notation using technology, of which “E” is the most common. This lesson ensures that students have been exposed to that.

1. Assessment: Describe ***how*** you and your students will know they have reached your learning goals.

My students will know that they have reached one of my learning goals if they can understand that “E” is essentially just a replacement for the 10 in scientific notation. Successful understanding of this will allow them to correctly answer the word problems using the knowledge they’ve already gained about scientific notation. I will know that they have reached my other learning goals based on their progress on the word problems and my interactions with them during class.

1. Personalization and equity: Describe how you will provide for individual student strengths and needs. How will you and your lesson consider the needs of each student and scaffold learning? How specifically will ELL students and students with learning disabilities gain access and be supported?

Some students in my class do better with word problems than with worksheets, so this lesson gives them an opportunity to shine after doing a lot of worksheets. As always, I plan to strategically group students together so that they can help each other decode the problems and play off each other’s strengths. At the beginning of class, I will suggest that students refer to their notes and previously completed worksheets if they’re stuck, for they’ve all done problems similar to these before. For students with learning disabilities, I will change some of the numbers if necessary so that they can focus on performing the correct operation without getting bogged down by the nitty gritty of the numbers. For ELL students, I will underline key vocabulary and provide Spanish translations of those words. I can also draw visuals to accompany the word problems.

1. Activity description and agenda
   1. Describe the activities that will help your students understand the content of your class lesson by creating an agenda with time frames for your class. Be prepared to explain why you think each activity will help students on the path toward understanding.

See attached timed agendas.

* 1. What particular challenges, in terms of student learning or implementing planned activity, do you anticipate and how will you address them?

Students have not worked extensively on word problems in a little while, so I anticipate that they will be decently challenged at first and perhaps a little hesitant to engage. I will be circulating to help students when necessary, and I will also encourage them to look at past assignments to help them get started. If the entire class is struggling with one particular problem, I will bring the class together and guide them through some of it.

1. List the Massachusetts Learning Standards this lesson addresses.

CCSS.MATH.CONTENT.8.EE.A.4

Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.