Lesson Activity Plan 4

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

In this lesson, students will review how to convert numbers between regular and scientific notation. They will also begin to learn that scientific notation is used to measure really large and really small numbers.

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

Students will be able to convert a number in regular notation to scientific notation, and they will be able to convert a number in scientific notation to regular notation. They will know that the exponent of the 10 tells you how many decimal places you should move, and that a positive exponent means move to the right while a negative exponent means move to the left. Students will also know that scientific notation is a shortcut for writing really large and really small numbers.

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

In order to perform different mathematical operations using scientific notation, students first need to be comfortable converting between regular and scientific notation. This lesson aims to get students quickly accustomed to using scientific notation again, since they have not seen or used it since the jigsaw. It also reintroduces scientific notation using a real-world context, which is another unit goal.

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

My students and I will know that they have reached my learning goals based on their performance on the worksheet. Students will see the corrections that their classmates made and I will see them as well when I collect the worksheets. While I don’t often think that worksheets can capture a student’s true understanding, in the case of something as cut and dry as scientific notation conversion, I believe it can.

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?

I am hoping that I can instill a sense of urgency in students when they’re completing their worksheets, but I’m guessing that there will be at least one student who is struggling and needs to work at a slower pace. For them, I will cross out some of the problems on the worksheet so that they don’t have to complete as many, which will stop them from getting stressed and let them still feel like they’ve succeeded. Fortunately, the moving of the decimal point is a very visual action, so ELL students and students with learning disabilities should be able to follow along as we draw and count out the jumps in the decimal places to correspond with the exponent value. The only change in this repeated action is which direction the decimal place moves, so there aren’t really any tricks meant to trip students up.

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 agenda.

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

This will be one of the first times that students will be grading each other’s worksheets, and I anticipate that some students might be uncomfortable showing their work to others, even though they work in groups all the time. To counteract this, I will try to sit students near people with whom they feel comfortable so they’re not too embarrassed to share their work. I will also emphasize to students that the grading process is nonjudgmental and that we’re all here to learn from our mistakes.

In terms of student learning, a challenge I anticipate is students getting confused when there is no decimal point in a whole number. I will make sure to remind them that you can always put a decimal point after the ones place and add as many zeroes as you want and it does not change the value of that number.

1. List the Massachusetts Learning Standards this lesson addresses.

CCSS.MATH.CONTENT.8.EE.A.3

Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities.