Lesson Activity Plan 3

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

Over the next five days, students will work in groups to set-up and solve a specific word problem involving balancing equations. They will also write a letter explaining their thinking, which will then get edited in a peer review and rewritten based on feedback.

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

As a result of this lesson, students will be able to break down a complicated word problem into more manageable and important information. They will then be able to translate that information into mathematical equations, specifically balanced equations. In addition, they will know what the peer review process is, as well as what good and bad feedback looks like. They will also be able to actually provide feedback on their peers’ written work.

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

This is the most complex word problem about balancing equations that students have encountered so far. It is, however, firmly rooted in a real-world context. This clearly connects to my unit goal of modeling real-world scenarios using balanced equations. By asking students to write a letter explaining their thinking, it forces them to explain why they are using balanced equations and how they go about solving them. These are two key understandings I want students to gain from this unit. Although the peer review does not directly relate to this unit, it relates to my personal goals of promoting quality writing and positioning students as valuable resources for each other.

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

My first means of assessment will be the problem solving protocol that students will fill out individually and as a class. As students sort information from the problem into different categories and share their thinking with the class, I will be able to see if they’re making the connection to balanced equations. The letter that the students will write once they’ve solved the problem will also serve as a powerful assessment tool. Not only will it allow me to check if their answer is correct, but also it will reveal their thinking process, which is equally, if not more, important. As students are writing their letters, I will do informal individual check-ins by circulating around the room. Finally, I will be able to assess student comprehension of the peer review process by looking at the comments they wrote on each other’s letters. Do they provide useful or empty feedback? Did students actually make changes to their letters based on feedback they received?

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?

All the other activities the students have done in this unit leading up to this word problem essentially serve as a scaffold. They started with simple one-step problems, and then slowly progressed to more complex ones with a lot of practice and repetition along the way. I will be grouping students heterogeneously so that students with higher understandings can help those who are struggling more. The grouping will also strategically place ELL students with students with whom they are comfortable speaking. Hopefully this will encourage collaboration within groups.

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 agendas.

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

For this activity, I am anticipating more challenges surrounding the peer review process than the actual math. The students have never before engaged in a peer review in my math class, and I’m not even sure they’ve done it in other classes. To address this, I will have the students first come up with their own criteria for quality math work/writing, and explain that they will use this to review their own work and their peers’ work. I will also show students examples of good and bad feedback, and have them come up with criteria for each. After they’ve actually reviewed each other’s work, I will ask them to cite three specific pieces of feedback they received and explain how they’ve taken them into account as they rewrite their letter. While I anticipate that there will be some bumps in this process, hopefully all of this will keep the entire review process from derailing.

1. List the Massachusetts Learning Standards this lesson addresses.

Content Standards

1. CCSS.MATH.CONTENT.8.EE.C.7.B  
   Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
2. CCSS.MATH.CONTENT.8.EE.C.8.C  
   Solve real-world and mathematical problems leading to two linear equations in two variables.

Practice Standards

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Attend to precision
6. Reflection
7. In light of all areas of planning, but especially in terms of your stated purpose and learning goals, in what ways was the activity(ies) successful? How do you know? In what ways was it not successful? How might the activity be planned differently another time?
8. What did you learn from the experience of this lesson that will inform your next LAP?