Lesson Activity Plan 4

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

I will teach students to work backwards to solve an equation, although they will not know that they are solving equations.

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 they can undo each operation by doing its opposite, and that this process is called working backwards. Using this approach, they will be able to work backwards from one number to find the starting number. They will also be able to use flow charts to do this.

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

Throughout this unit, students have been working to write balanced equations to model different scenarios. This activity presents them with a more covert example of a balanced equation, and is a perfect transition to the next unit, where they will explicitly learn how to solve balanced equations algebraically.

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

Students will share with the class specific examples of how they worked backwards. In addition, students will record their thinking on a separate sheet of paper as they play the secret number game with their partner and as they fill out the number puzzles worksheet. I will collect that paper to see how students are doing. Students will know they are working backwards correctly when they correctly guess their partner’s number.

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?

To scaffold learning, I have tried to include specific times for modeling during this activity, which will help student understanding. I also am asking students to work with partners in the beginning, and the partners have been strategically chosen to support ELL students and students with learning disabilities. Since the secret number activity requires students to choose their own secret numbers and order of operations, each pair can make it as challenging or as easy as they see fit. In this way, all students will be able to access that part of the activity. The flow chart is meant to help students clearly organize their thinking through means of an easy visual representation, which should also help students access the material.

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 agenda.

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

I anticipate that it might take some students a little while to figure out how to guess my secret number. I wrote in the agenda that I was going to do two rounds of the game before I let students reveal how they got their answer, but I plan to do as many as 5 rounds if there are still a lot of confused students. This will give them more chances to think about the problem.

1. List the Massachusetts Learning Standards this lesson addresses.

Content Standards:

1. CCSS.MATH.CONTENT.8.EE.C.7.A  
   Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form *x* = *a*, *a* = *a*, or *a* = *b* results (where *a* and *b* are different numbers).

Practice Standards

1. Look for and make use of structure
2. Look for and express regularity in repeated reasoning
3. Construct viable arguments and critique the reasoning of others
4. Reason abstractly and quantitatively
5. Make sense of problems and persevere in solving them
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?