University of Mary Division of Education

Lesson Plan Format

**Grade Level:**

10th and 11th grade

**Subject(s) Area:**

Algebra II

**Materials Needed:**

* For students:

Each student needs one chrome book, loose leaf paper (if they do not have any I will provide them with loose leaf), calculator (optional), and a pen or pencil.

* For me, the teacher:

I need to have a computer, my Kahoot! review game, projector that hooks up to my laptop, loose leaf, the quizzes for the class, and a whiteboard with markers.

**Standards:**

* AT-HS.F-IF.04:

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.

* AT-HS.F-BF.03:

Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

* MAT-HS.F-IF.07.b:

Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.

**Objectives:**

* Students can identify key features of graphs. Including increasing and decreasing intervals, vertex, minimum, maximum, domain, range,
* Students can graph an absolute value function by identifying the transformation and using their understanding to sketch the graph and identify key features.
* Students can solve absolute value equations and inequalities, including checking for extraneous solutions.

**Learning Activities:**

* Students will walk into the classroom before and while class is starting to take their assigned seats. *(I should have passed out loose leaf before-hand, or I will pass it out as they are taking their seats.)*
* Once everyone or most students are present, I will start teaching.
* I will introduce myself, in case they forgot who I was, and I will explain the agenda for the 80 minutes of class.
  + We will be playing a kahoot game on the computer to help them review.
  + After the game, they will take a traditional quiz, or essentially test for this section.
* While I am telling them to get out their chrome books, pencils and calculators, I will hook my laptop up to the projector. As I am signing into my Kahoot, I will direct them to login to Kahoot.it.
  + The students have played this game before, and they should know what to do when logging in, but I can assist anyone who needs help.
  + I need to make sure their usernames are appropriate before we can start.
* We will start the Review Game on Kahoot. The quiz consists of 35 questions.

<https://play.kahoot.it/#/k/58cab92c-d788-46f6-a141-a7ae631b5583>

* + As we are moving our way through the Kahoot game, I can stop after each question and see how many students got the question correct and incorrect without knowing who answered what.
  + If more than half the class, or if a large amount of students, answered the question incorrectly, I am going to stop and explain the problem and call on students to help me find the correct answer.
  + I anticipate that the students will have a hard time with questions on: increasing and decreasing intervals, writing answers in interval notation, domain and range notation, and maybe some details about solving absolute value inequalities.
    - I think I will need to stop and re-explain these concepts and questions pertaining to these topics.
    - If students get confused on other topics, then we can explain those problems before moving onto the next question.
  + I think the review game will take up the first 50 minutes of the class time.
* If the review game takes less than 50 minutes, then I plan on asking students more problems of the types of questions that they struggled with. I will cold call on students to explain to me what they need to do and why.
* For the last thirty minutes in class, I will hand out the quizzes in which they are supposed to take.
* While they are taking the quiz, they can use calculators, and they can ask me or Mrs. Kincaid questions about the quiz. (Mrs. Kincaid wrote the quiz, so I might not be able to answer some student’s questions.)
* They can turn in the quiz when they are done. If they are done after ten minutes, they can be dismissed.
* If students do not finish the quiz, they can turn it into me and I will give it to Mrs. Kincaid. They can finish the quiz in their saber time sometime this week.
* Class is done at 9:30am, and students can start leaving at 9:10, if they are done with the quiz. Otherwise, they need to remain seated and sitting quietly in their desk. They can work on other homework, or they can watch the video lecture for tomorrow if Mrs. Kincaid assigned one.

**Assessment:**

* At the end of the class period, for the last thirty minutes, the students will take a written quiz on all the material that was discussed within the last sections, or all the material in the review game.
* The quiz will serve as the chapter test, and it will be counted under the test category in the gradebook for each student’s individual grade.

**Reflection:**

I think the lesson went really well, and I think the students really liked the game. The students struggled with the topics I expected them to struggle with. I really liked the format of Kahoot, so I could stop and reteach some concepts from the questions that most students got wrong, and I knew this game would be beneficial in this manner. One thing I can improve on with Kahoot, however, is to get to know the software a little more. I know if I would have spent more time with the software, I wouldn’t have skipped over the questions I wanted to work through, or other little computer mistakes I made. I did a rough estimate on how long the game was going to take, and I was really glad that we ended up having ten extra minutes to have the students tell me what they still did not understand. I think those ten minutes were beneficial to students to talk and hear what other students were thinking.

If I were to teach the lesson again, I would most definitely keep the game, but I would go through the quiz a couple more times in order to not make the little mistakes I did in class. If I were to the teach the lesson again, I would try to keep the ten minutes at the end of the game before the quiz, but I should have prepared specific examples because it was hard to come up with examples on the spot. I also should have had more questions on increasing and decreasing intervals because that seemed like an area that the students really struggled. After talking with my practicum teacher, we decided that we would have to reteach this concept this week before they continue on in this unit.

Overall, I think the lesson went really well, and I know I learned a lot from observing this class and being able to teach them. I know the areas in which the lesson thrived, and I can see where the lesson needs improvement. For this being the first lesson I have ever taught, I think it went exceptionally well.