1. Teacher Name: *Allison Duncan* 2. Course/Content/Grade: *Secondary I 9th Grade* 3. Unit/Module/Topic :*Unit 2, Graphing the Set of All Solutions* 4. Plan Duration: *90 minutes*

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| **5. Core Standard(s):** | | *A.REI.10* | | | | **6. Objective(s):** | | * *I can identify solutions and non-solutions of linear and exponential equations.* * *I can graph points that satisfy linear and exponential equations.* * *I can understand that a continuous curve or a line contains an infinite number of solutions.* | |
| **7. Essential Vocabulary:** | | *Solution*  *Linear*  *Exponential*  *Infinite* | | | | **8. Inter-Disciplinary Connections:** | | *Shared vocabulary: argument, analysis* | |
| **9. Assessing for Student Learning:** | | *Students will understand that solutions to equations are ALL the points on a graph of an equation (1 – 5 on Practice 2.1.1)*  *Students will be able to find 3 solutions that will satisfy an equation and find all possible solutions to an equation (6 – 10 on Practice 2.1.1)* | | | | **10. Technology Integration: (When applicable)** | | **Teacher Use:** | **Student Use:** |
| Smart board  Doc camera |  |
| 11. Area for Content Specific Additions – *Practice Standard 4: Model with Mathematics, Practice Standard 5: Use appropriate tools strategically, Practice Standard 6: Attend to Precision, Practice Standard 8: Look for and express Regularity in Repeated Reasoning* | | | | | | | | | |
| **12. Pacing**  **(mins.)** | **13. Lesson Sequence**  **(What You Do When: Including Explicit Instruction/Guided Inquiry)** | | | **14. DOK Level** | **15. Grouping and Scaffolding Structures (including interventions for diverse learners)** | | **16. Engagement & Checking for Understanding**  **(OTRs: What will students be saying,**  **writing, reading & doing)** | | |
| 1st day |  | | |  |  | |  | | |
| *5 - 10 min.* | *Starter: 2.1.1 Warm-up* | | | *2* | *Work independent*  *Save answers for end of class* | |  | | |
| *15 -20 min* | *“Solution, Solution, Who’s got the Solution?” Activity* | | | *1* | *Whole class with partners having same game card* | | *Plotting points (as they are called out) on game card to see if they fall on the graphed line* | | |
| *20 min* | *“Solution, Solution” debrief – teacher models equation A, class does equation B, partners work on equations C and D* | | | *2* | *Whole Class*  *Partners* | | *Recording answers on back of game card*  *Discussing with partners the patterns that they see (the points that make the equations true are ON the graphed line)* | | |
| *25 min* | *Guided notes – what it means to be a solution and finding solutions*  *Teacher do examples 1, 2*  *Class do examples: 2, 4*  *Partners do: 5, 6*  *Independent: 7, 8*  *Practice: Practice 2.1.1* | | | *2 - 3* | *Whole Class* | | *Fill in graphic organizer*  *Partner problems*  *Independent problems*  *Practice 2.1.1* | | |
| *10 min* | *Check for understanding: small group review of Practice 2.1.1* | | |  | *Heterogeneous small groups* | | *Checking answers to Practice 2.1.1*  *Teacher circulate, take note of understanding (performance on Practice determines homework)* | | |
|  | *Independent Practice at home* | | | *2 – 3* | *Independent*  *Striving learners: Practice corrections and explanations*  *Accelerated learners: Problem-based task 2.1.1* | | *Striving learners: problem corrections*  *Accelerated learners: problem-based task 2.1.1* | | |
| **17. Closure: (Students reflecting on their learning and providing feedback on their understanding to the teacher)** | | | *Students review their own answers to warm up, have opportunity to change answers based on lesson, at bottom of warm up answer these questions:*  *What did we do today?*  *What did we learn today?*  *What questions do I still have?* | | | | | | |
| **18. Feedback to students: (Teacher providing feedback to students on their learning and growth)** | | | *Review exit tickets*  *Next class, group students based on exit ticket responses – striving learners go over extra practice with teacher, accelerated learners do Inside mathematics task: POM: Perfect Pair* | | | | | | |

**19. Lesson Plan Reflection Questions**

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| 1. Were my students ready for this lesson? What data supports this? *Yes. Gave pre-assessment at the end of the previous lesson, 35/40 student in class answered 4/5 questions correctly* |
| 1. Was the instructional objective met? How do I know students learned what was intended?  *As they were completing independent problems, I circulated the room to monitor their progress, students were able to complete the independent examples correctly, and were able to complete the Practice 2.1.1 correctly* |
| 1. Were the students productively engaged? How do I know? *Students were engaged in the “Solution” game as they were all filling out their cards and filling out the “Solution” debrief. Students weren’t as engaged with Guided notes, accelerated learners felt it was redundant from “Solution” debrief, a lot of accelerated learners left their guided notes blank and only completed independent examples* |
| 1. Did I alter my instructional plan as I taught the lesson? How and why? *Yes. I noticed that the accelerated learners were bored with guided notes and had completed all the examples before we got to them, so I told them to fill out the guided notes on their own, and then create their own problems for each other to complete. Most did NOT fill out guided notes but went straight to problem creation.* |
| 1. If I had the opportunity to teach the lesson again to the same group of students, would I do anything differently? What? Why? *Yes, I would have better activities for accelerated learners, maybe group the class differently for guided notes…have the accelerated learners read silently and independently to fill out notes while striving learners work with teacher.* |
| 1. Are my students ready to “move on”? If yes, how do I know? If not, what adjustments/re-teaching do I need to make to ensure student understanding? *30 kids are ready to move on as evident from their exit tickets. Do extra practice from students resource book with striving learners, maybe do “Sequencer” activity from Walch re-assess with warm-up corrections, accelerated learners will do Inside Mathematics Problem of the Month: Perfect Pair.* |