

ESTABLISHING PURPOSE

1

What are the key content standards I will focus on in this lesson?

Content Standards:

A.REI.6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

A.REI.11. Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately (e.g., using technology to graph the functions, make tables of values, or find successive approximations).

Standards for Mathematical Practice:

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Use appropriate tools strategically.

2

What are the learning intentions (the goal and why of learning, stated in student-friendly language) I will focus on in this lesson?

Content: To understand that when graphing linear functions, the intersections of functions signify their solutions and are a means of solving systems of equations.

Language: To communicate the solutions to systems of equations verbally and in writing.

Social: To transition smoothly between roles during conversation roundtable.

3

When will I introduce and reinforce the learning intention(s) so that students understand it, see the relevance, connect it to previous learning, and can clearly communicate it themselves?

After introducing the learning intentions at the beginning of class, I will rely heavily on the social intention to facilitate the task of the day. I will also explicitly readdress the content and language intentions during direct/deliberate instruction as I model their intent.

SUCCESS CRITERIA

4

What evidence shows that students have mastered the learning intention(s)? What criteria will I use?

I can statements:

- I can (still) graph linear functions in slope-intercept form.
- I can (still) graph linear functions in point-slope form.
- I can approximate solutions to systems of equations by examining graphs.
- I can explain solutions to systems of equations in writing.

5

How will I check students' understanding (assess learning) during instruction and make accommodations?

I will use whole-group questioning, asking specific questions and using student responses to guide the next steps in today's learning. At the same time, I will be checking for their understanding by observing students, asking questions, and interviewing them about their progress on the diamond task. I will constantly reflect on the learning in the classroom by asking, "Where did learners struggle in the task, and were there gaps in their learning that needed to be addressed at this point in the learning progression?" I will provide feedback to all students as they build their procedural knowledge and fluency.

INSTRUCTION

6

What activities and tasks will move students forward in their learning?

Focused Instruction

Students will take notes on graphing systems and approximating their solutions.

Guided Practice

Students will work through an example problem similar to their notes. I will scan the room and sit with students who need more support. Students will explain their methods and solutions at the board.

Collaborative Learning

We will do a collaborative activity involving a conversation roundtable foldable on graph paper. In groups of four, students will work in rounds, completing four separate problems. During the first round, each group member will be graphing a linear function presented in slope-intercept form on the assigned problem. Once time is up, they will pass their foldable to their left and receive a new foldable from their right. During the second round, each group member will now graph an additional linear function presented in point-slope form on their newly received foldables. After passing again and now receiving a third foldable, they will approximate the solution to the system that should

be graphed before them. On the fourth and final round, students will use writing to explain the solution provided from Round 3. At the end of this process, the students will have four completed problems. Solutions will be posted for each, and students will conduct an error analysis of their work. Additionally, two of these systems will be unlike the cases discussed in class and will spur a whole-class conversation.

Independent Learning

Students have a short homework assignment aligned to each of the success criteria.

7

What resources (materials and sentence frames) are needed?

1. Graph paper for conversation roundtable foldables
2. Colored pencils or pens for foldables (different color for each group member)

8

How will I organize and facilitate the learning? What questions will I ask? How will I initiate closure?

This lesson will be an almost-linear path through the gradual release of responsibility. I will begin with focused instruction, then transition to guided practice, and then we will start our collaborative task. After the collaborative task, we will close with a whole-class discussion, and students will be assigned an independent learning homework assignment aligned to today's success criteria.