

Graphing Linear Equations Linear Representations		Student/Class Goal Students will graph linear equations.
Outcome <i>(lesson objective)</i> Given a linear equation, students will create a table of values and plot the corresponding points to graph the line. Given a linear equation in slope-intercept form, students will use the slope and y-intercept to graph the line.		Time Frame 4 hours
Standard <i>Use Math to Solve Problems and Communicate</i>		NRS EFL 6
Components of Performance (COPs) Understand, interpret, and work with pictures, numbers, and symbolic information.	Activity Addresses COPs <i>(process)</i> Students will understand that a linear equation results in a straight line.	
Apply knowledge of mathematical concepts and procedures to figure out how to answer a question, solve a problem, make a prediction, or carry out a task that has a mathematical dimension.	Students will notice that the y-intercept is always on the y-axis, a line with a positive slope will go up from left to right, and a line with negative slope will go down from left to right.	
Define and select data to be used in solving the problem.	Students will pick appropriate values for x in their table.	
Determine the degree of precision required by the situation.	Students graph will result in a straight line.	
Solve problem using appropriate quantitative procedures and verify that the results are reasonable.	A graphing calculator will be used to verify the graph of the line and the values in the table.	
Communicate results using a variety of mathematical representations, including graphs, charts, tables, and algebraic models.	Students will use an equation to make a table and graph the points of the corresponding line.	
Activity Addresses Benchmarks <i>(content)</i> M.6.7, M.6.9, M.6.17, M.6.18, M.6.19, M.6.26, M.6.27 M.6.28, M.6.29, M.6.31, M.6.35		
Materials Graph paper Straight edge Graphing calculator Provided practice material		
Learner Prior Knowledge <ul style="list-style-type: none"> • Substitution • Evaluate an expression • Graphing ordered pairs • Vocabulary: x-axis, y-axis, coordinate plane, slope, y-intercept, ordered pairs, linear equation 		
Instructional Activities Step 1 Create a table (T-chart) creating a minimum of 3 ordered pairs. <ul style="list-style-type: none"> • Substitute the x-values into the linear equation to solve for the corresponding y-values. • Plot the ordered pairs on the coordinate plane. • Connect the points using a straight edge. • Label the line and put arrows on each side to show continuation. • Provide students with guided practice. Step 2 In a group, or with a partner, students will practice making tables to graph linear equations. Step 3 Using $y=mx+b$ (slope-intercept) form, students will graph the corresponding line.		

- Plot the y-intercept (0, b).
- Determine the slope.
- Using rise/run, plot at least 3 additional points.
- Connect points using a straight edge.
- Label the line and put arrows on each side to show continuation.
- Provide students with guided practice.

Step 4

In a group, or with a partner, students will practice graphing linear equations by using the y-intercept and slope technique.

Step 5

Students will independently practice graphing linear equations using both methods.

Assessment/Evidence *(based on outcome)*

Informal assessment by monitoring group/partner discussion and work. Formally check students' individual work for process and accuracy. Assign additional practice if necessary.

Teacher Reflection/Lesson Evaluation

Not yet completed.

Next Steps