

Floor Graphing

1. Use tape to mark off the x and y axes on your floor. Mark integer marks along each axis. Make them far enough apart for a student to stand on each integer. If you plan to repeat this exercise, use a large tarp which can be marked, rolled, and stored.
2. On a tile floor, use the tiles to mark off the integers along the axes. If you do not have tiles, use tape. Duct tape for the axes, thinner tape for the lattice lines.
3. Assign students an x-coordinate number. If your x axis goes from -10 to +10, you will need 21 students to cover every integer along the x axis.
4. Give students scratch paper to work on. Round paper plates work well. Post your equation in a visible location.
5. Each student substitutes his/her number in place of the x in the equation, and solves for the y value. We use a 3-column T-chart.
6. Each student then moves vertically along his/her x value to the corresponding y value s/he found in step 5.
7. If possible, photograph the final student locations from above. An alternate method is for students to place a marker (Their paper plate) in the designated place. This allows them to move around and observe the graph.

Rules of Thumb

1. If all variable exponents are positive 1, the graph will be a straight line. (Example: $y = 2x + 3$ – this is called “slope-intercept form.”)
2. If the coefficient of x (in slope-intercept form) is positive, the line will slope upward. (See graph of $y = 2x + 3$). If the coefficient of x is negative, the line will slope downward. (See graph of $y = -x + 4$).
3. The graph of an absolute value will form a vee. (See $y = |x + 2|$)
4. The graph of a quadrilateral equation will form a parabola. (See $y = 2x^2 - 1$)

