

Name \_\_\_\_\_

# Analyze and Solve Linear Equations

Dear Family,

Your child is learning to interpret, represent, and solve multistep equations in mathematical and real-world contexts. Your child is also studying graphs and equations of lines in the coordinate plane and learning to identify slopes and y-intercepts. Here is an activity to help your child understand connections between linear equations and graphs.

## Slope and Graphs

**Materials:** All cards numbered 2 through 6 from a standard deck of playing cards; graph paper

**Step 1** Shuffle the cards and place two cards face up. Red cards represent negative numbers and black cards represent positive numbers.

**Step 2** Working with your child, use the two numbers to create a slope ratio,  $m = \frac{\text{rise}}{\text{run}}$ .

For example, a red 2 and a black 6 can be used to create the ratios  $\frac{-2}{6}$  or  $\frac{6}{-2}$ .

**Step 3** Graph the equation  $y = mx$ . Starting at the origin, move vertically the number of units indicated by the rise—down if the rise is negative and up if the rise is positive. Then move horizontally the number of units indicated by the run—left if the run is negative and right if the run is positive. Graph a point and draw a line through this point and the origin.

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## Observe Your Child

### Focus on Mathematical Practices

Model with mathematics

Help your child become proficient with this Mathematical Practice. Take a stroll or drive with your child and look for real-world examples of slope. For example, compare the slope of a wheelchair ramp with the slope of a roof. Discuss the importance of the slope in each design.