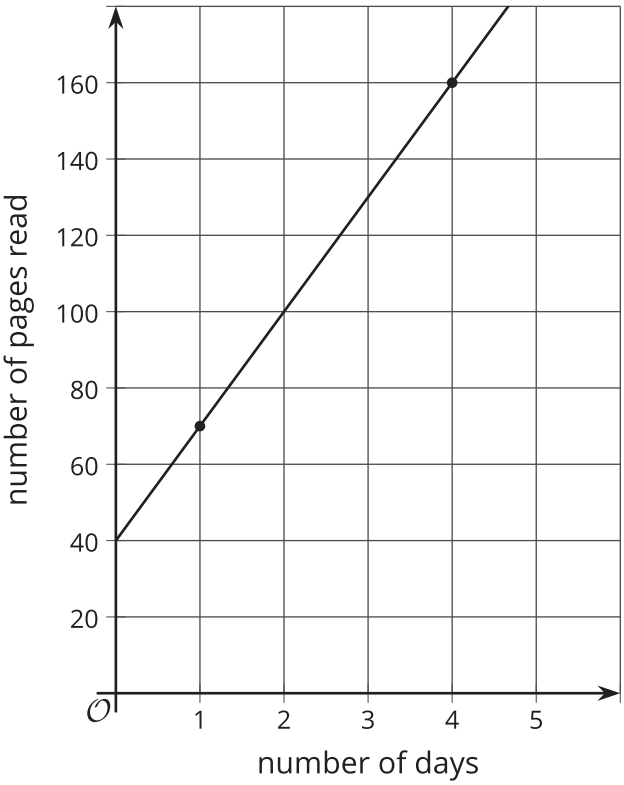
Unit 3, Lesson 6

# More Linear Relationships

Let's explore some more relationships between two variables.

## 6.1 Notice and Wonder: Daily Reading



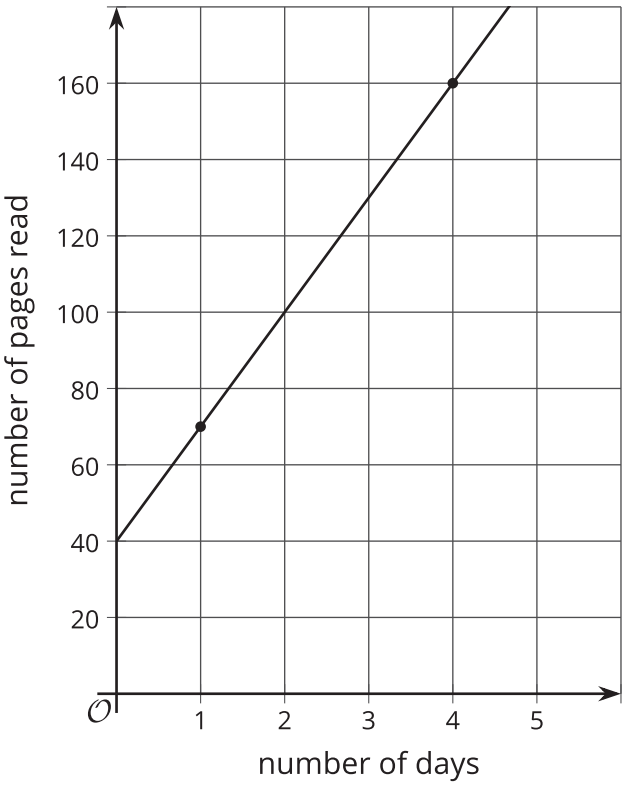

What do you notice? What do you wonder?


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## 6.2 Summer Reading

Lin has a summer reading assignment. After reading the first 30 pages of the book, she plans to read 40 pages each day until she finishes. Lin makes the graph shown here to track how many total pages she'll read over the next few days.

After day 1, Lin reaches page 70, which matches the point $(1, 70)$ she made on her graph. After day 4, Lin reaches page 190, which does not match the point $(4, 160)$ she made on her graph. Lin is not sure what went wrong since she knows she followed her reading plan. Why doesn't Lin's reading progress match her graph?




## 6.3 Card Sort: Slopes, Vertical Intercepts, and Graphs

Your teacher will give you a set of cards containing descriptions of situations and graphs. Match each situation with a graph that represents it. Record your matches and be prepared to explain your reasoning.


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## Are you ready for more?

A savings account was opened in 2010. The table shows the amount in the account each year.

If this relationship is graphed with the year on the horizontal axis and the amount in dollars on the vertical axis, what is the **vertical intercept**? What does it mean in this context?

| year | amount in dollars |
|---|---|
| 2010 | 600 |
| 2012 | 750 |
| 2014 | 900 |
| 2016 | 1050 |

## Lesson 6 Summary

Lines drawn on a coordinate plane have a slope and a vertical intercept. The **vertical intercept** indicates where the graph of the line meets the vertical axis. Since the vertical axis is often referred to as the $y$-axis, the vertical intercept is often called the "$y$-intercept." A line represents a proportional relationship when the vertical intercept is 0.

Here is a graph of a line showing the amount of money paid for a new cell phone and monthly plan.

The vertical intercept for the graph is at the point $(0, 200)$ and means the initial cost for the phone was \$200.

A slope triangle connecting the two points $(0, 200)$ and $(2, 300)$ can be used to calculate the slope of this line. The slope of 50 means that the phone service costs \$50 per month in addition to the initial \$200 for the phone.

