

**GOAL** Identify graphs that are misleading, and explain how they are misleading.

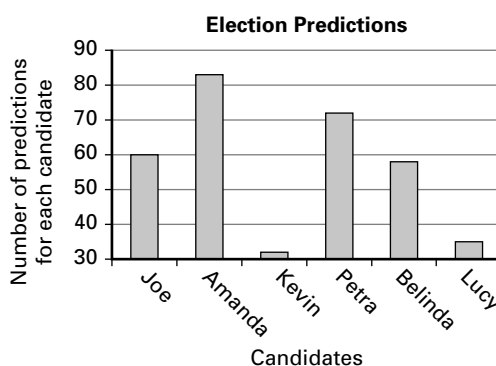
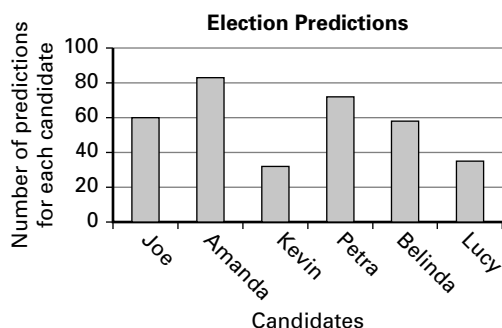
### Explore the Math

Indira conducted a survey asking students at her school who they thought would win an election.

Candidate	Number of people predicting the candidate will win
Joe	60
Amanda	83
Kevin	32
Petra	72
Belinda	58
Lucy	35

#### You will need

- a graphing program or a ruler, centimetre grid paper, a compass, a protractor
- data sources including newspapers, books, and the Internet



### ? How can graphs be misleading?

- How are Indira's graphs the same? How are they different?
- Do you think each graph displays the data accurately? Explain.
- Construct your own graph to display Indira's data appropriately. Justify your choice.
- Construct your own graph to display Indira's data in a way that is misleading. Experiment with the effect of increasing and decreasing the least and greatest values on the scale. Choose a misleading graph. How is it misleading?

### Reflecting

- How can a graph make it appear that the data vary more than they actually do?
  - How can a graph make it appear that the data are closer than they actually are?
- Research graphs in the media or in a data source. Are any misleading? If so, explain how one graph is misleading. If not, choose a graph, and explain how it could have been constructed differently to make it misleading.
- Why do you think someone might want to create a misleading graph?
- How can you analyze a graph to decide whether it is misleading?