Unit 6, Lesson 2

Plotting Data

Let's collect and display some data about the class.

2.1 Representing Data

Lin surveyed 30 students about the longest time they had ever run.

Andre asked them about their favorite color.

How could Lin and Andre display their data sets? Would they represent them in the same way? Why or why not?

2.2 Gathering Data

Are bigger books always heavier? Are books with more pages bigger?

To investigate these questions, the class will gather data.

1. Each partner should:
   - Measure a book's width (across the bottom of the front cover) and height to the nearest centimeter, then weigh the book on a scale.
   - Record your partner's measurements in the table as well.

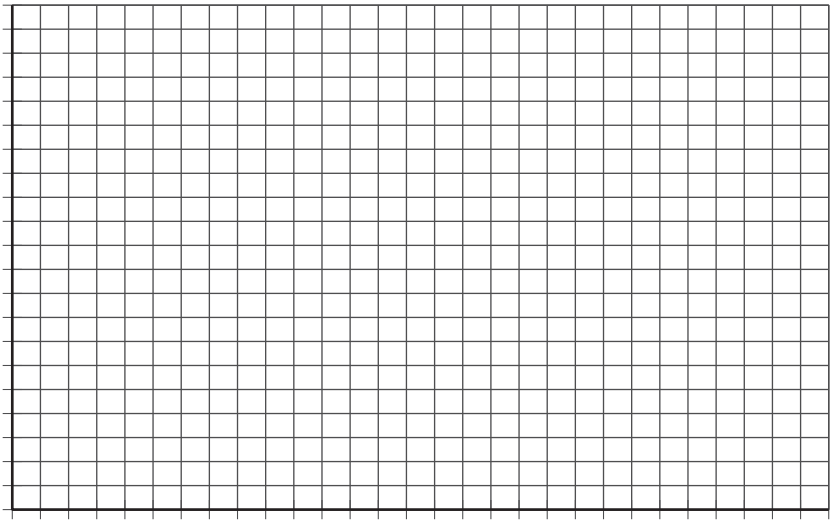
	pages	width (cm)	height (cm)	weight (oz)
partner A				
partner B				

2. One partner records the data from your table in a table of data for the entire class.

2.3 Scatter Plots

1. What types of graphical representations could be used to show the number of pages in the books? Make a graphical representation of the number of pages.

2. Choose a color and use it to plot a point on the coordinate plane that represents your own book's number of pages and weight. Then, in the same color, plot a second point that represents your partner's book.



3. In a different color, plot the number of pages and weight of each student's book in your class, making a scatter plot of the books for the entire class.

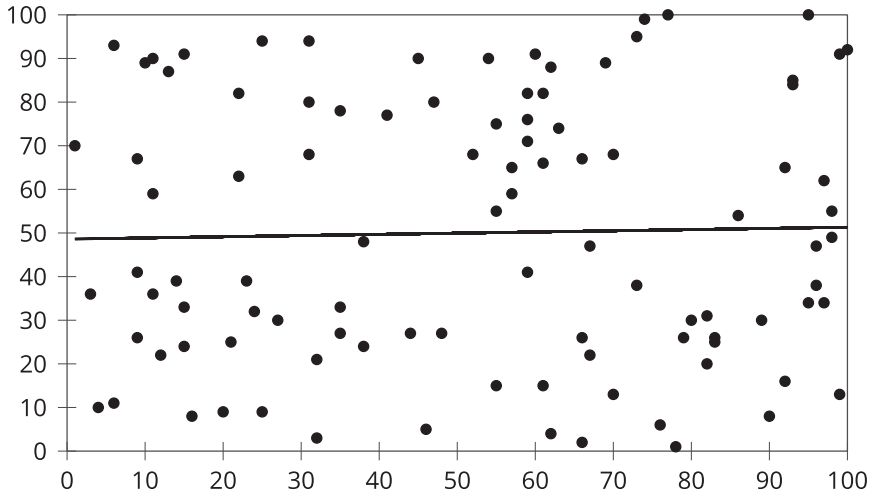
4. Based on your scatter plot, answer these questions:

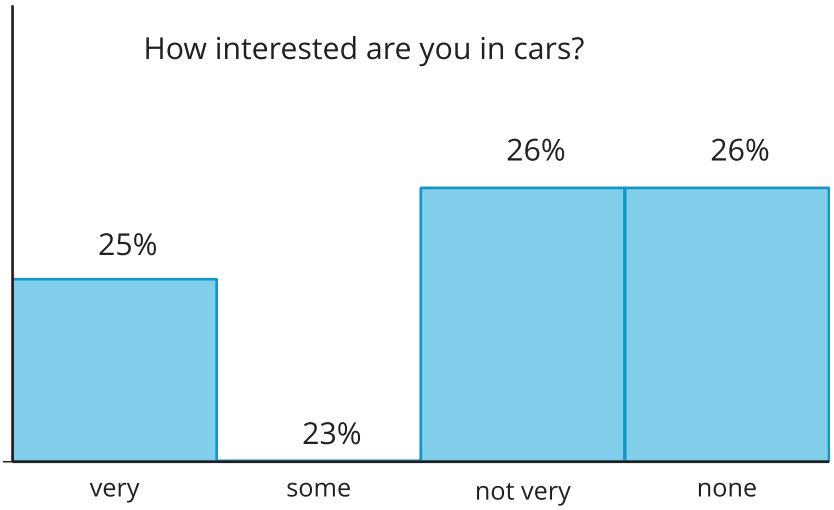
   a. Do books with more pages tend to weigh more? Explain how you know.

   b. Is weight a linear function of the number of pages? Explain how you know.

Are you ready for more?

Although the data may be accurate, displaying the data incorrectly can tell the wrong story. What is wrong with each of these graphic representations of data?



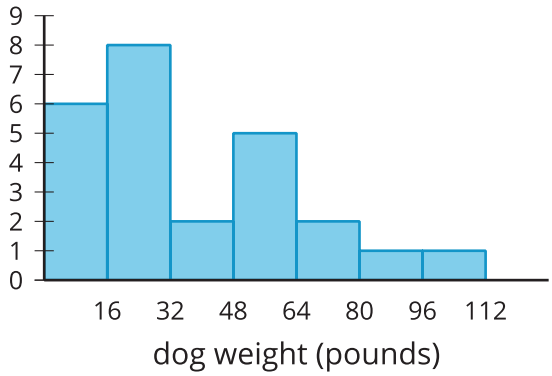


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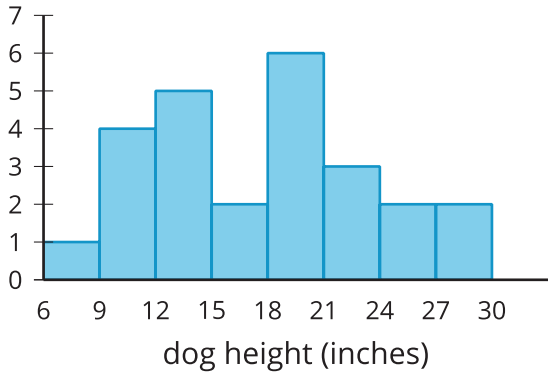
Lesson 2 Summary

Histograms show us how measurements of a single attribute are distributed. For example, a veterinarian saw 25 dogs in her clinic one week. She measured the height and weight of each dog.

This histogram shows how the weights of the dogs are distributed.

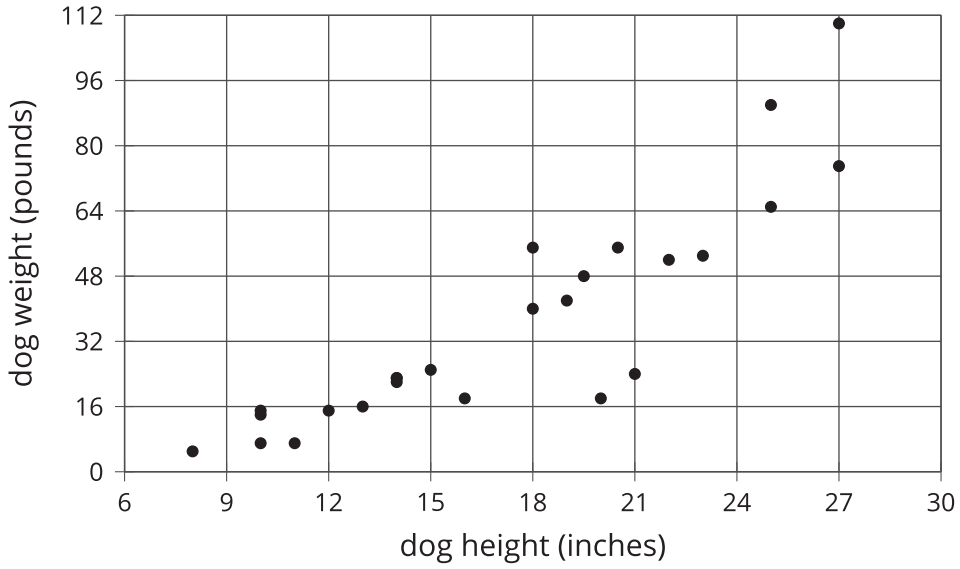


This histogram shows how the heights of the dogs are distributed.



These histograms tell us how the weights of the dogs and how the heights of dogs were distributed. But, they do not give any evidence of a connection between a dog's height and its weight.

Scatter plots allow us to investigate possible connections between two attributes. In this example, each plotted point corresponds to 1 of the 25 dogs, and its coordinates tell us the height and weight of that dog. Examination of the scatter plot allows us to see a connection between height and weight for the dogs.



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