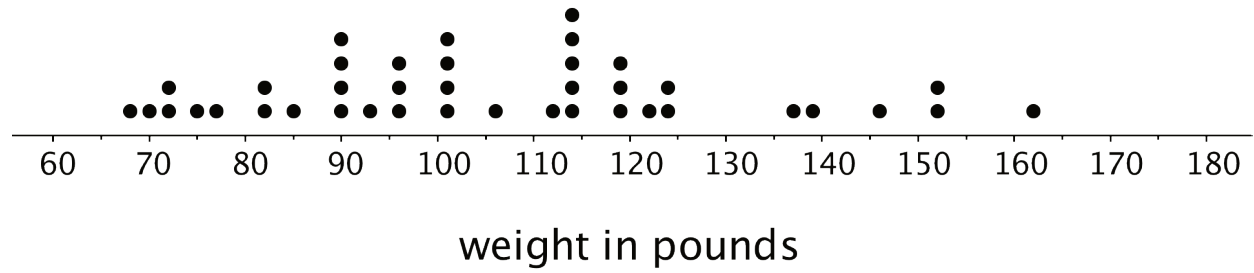# Unit 8 Lesson 6: Interpreting Histograms

1 Dog Show (Part 1) (Warm up)

Student Task Statement

Here is a dot plot showing the weights, in pounds, of 40 dogs at a dog show.
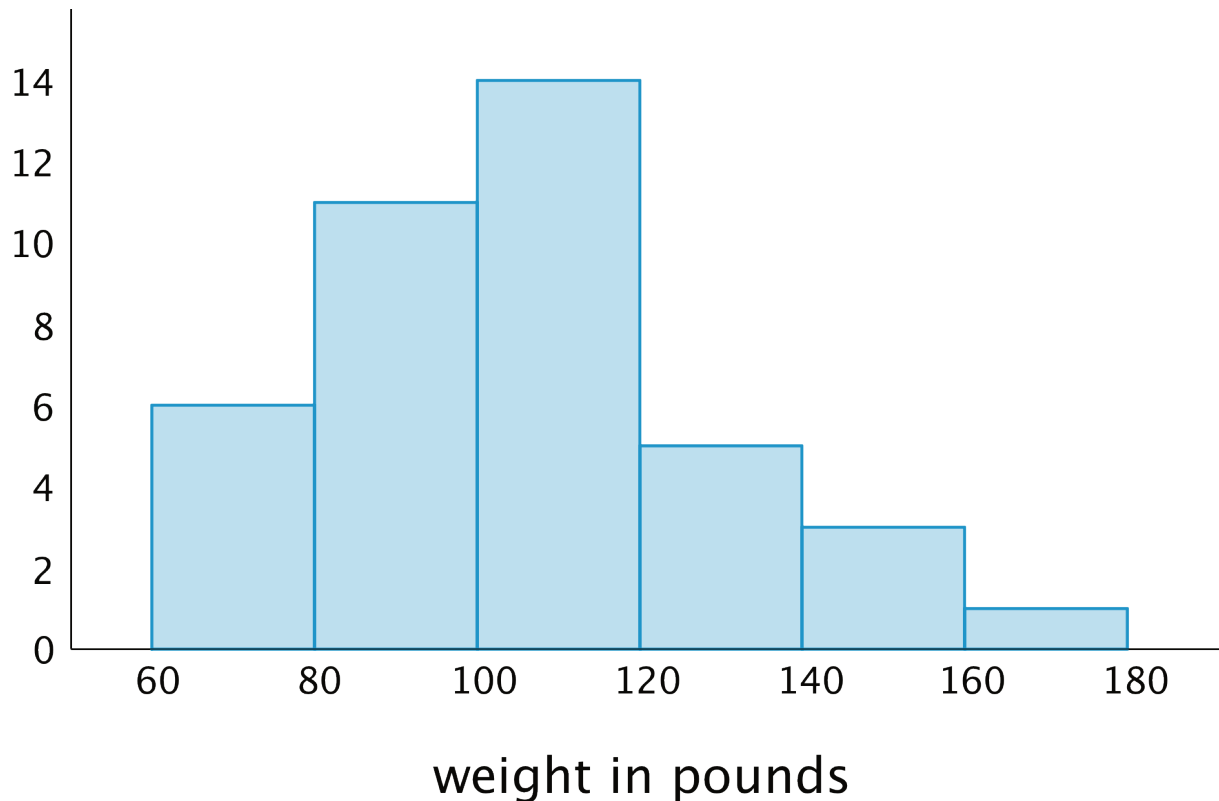

weight in pounds

1. Write two statistical questions that can be answered using the dot plot.

2. What would you consider a typical weight for a dog at this dog show? Explain your reasoning.

2 Dog Show (Part 2)

Student Task Statement

Here is a **histogram** that shows some dog weights in pounds.

weight in pounds

Each bar includes the left-end value but not the right-end value. For example, the first bar includes dogs that weigh 60 pounds and 68 pounds but not 80 pounds.

1. Use the histogram to answer the following questions.

   a. How many dogs weigh at least 100 pounds?

   b. How many dogs weigh exactly 70 pounds?

   c. How many dogs weigh at least 120 and less than 160 pounds?

   d. How much does the heaviest dog at the show weigh?

   e. What would you consider a typical weight for a dog at this dog show? Explain your reasoning.

2. Discuss with a partner:

   ○ If you used the dot plot to answer the same five questions you just answered, how would your answers be different?

- How are the histogram and the dot plot alike? How are they different?

3 Population of States

Student Task Statement

Every ten years, the United States conducts a census, which is an effort to count the entire population. The dot plot shows the population data from the 2010 census for each of the fifty states and the District of Columbia (DC).

population of states in millions
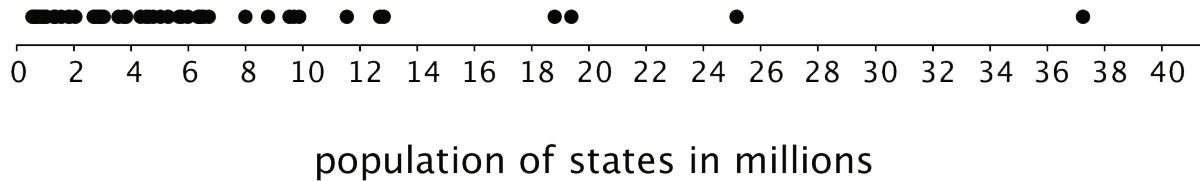
1. Here are some statistical questions about the population of the fifty states and DC. How difficult would it be to answer the questions using the *dot plot*?

   In the middle column, rate each question with an E (easy to answer), H (hard to answer), or I (impossible to answer). Be prepared to explain your reasoning.

statistical question	using the dot plot	using the histogram
a. How many states have populations greater than 15 million?		
b. Which states have populations greater than 15 million?		
c. How many states have populations less than 5 million?		
d. What is a typical state population?		
e. Are there more states with fewer than 5 million people or more states with between 5 and 10 million people?		
f. How would you describe the distribution of state populations?		

2. Here are the population data for all states and the District of Columbia from the 2010 census. Use the information to complete the table.

Alabama	4.78	Illinois	12.83	Montana	0.99	Rhode Island	1.05
Alaska	0.71	Indiana	6.48	Nebraska	1.83	South Carolina	4.63
Arizona	6.39	Iowa	3.05	Nevada	2.70	South Dakota	0.81
Arkansas	2.92	Kansas	2.85	New Hampshire	1.32	Tennessee	6.35
California	37.25	Kentucky	4.34	New Jersey	8.79	Texas	25.15
Colorado	5.03	Louisiana	4.53	New Mexico	2.06	Utah	2.76
Connecticut	3.57	Maine	1.33	New York	19.38	Vermont	0.63
Delaware	0.90	Maryland	5.77	North Carolina	9.54	Virginia	8.00
District of Columbia	0.60	Massachusetts	6.55	North Dakota	0.67	Washington	6.72
Florida	18.80	Michigan	9.88	Ohio	11.54	West Virginia	1.85
Georgia	9.69	Minnesota	5.30	Oklahoma	3.75	Wisconsin	5.69
Hawaii	1.36	Mississippi	2.97	Oregon	3.83	Wyoming	0.56
Idaho	1.57	Missouri	5.99	Pennsylvania	12.70		

population (millions)	frequency
0–5	
5–10	
10–15	
15–20	
20–25	
25–30	
30–35	
35–40	

3. Use the grid and the information in your table to create a histogram.

population of states in millions
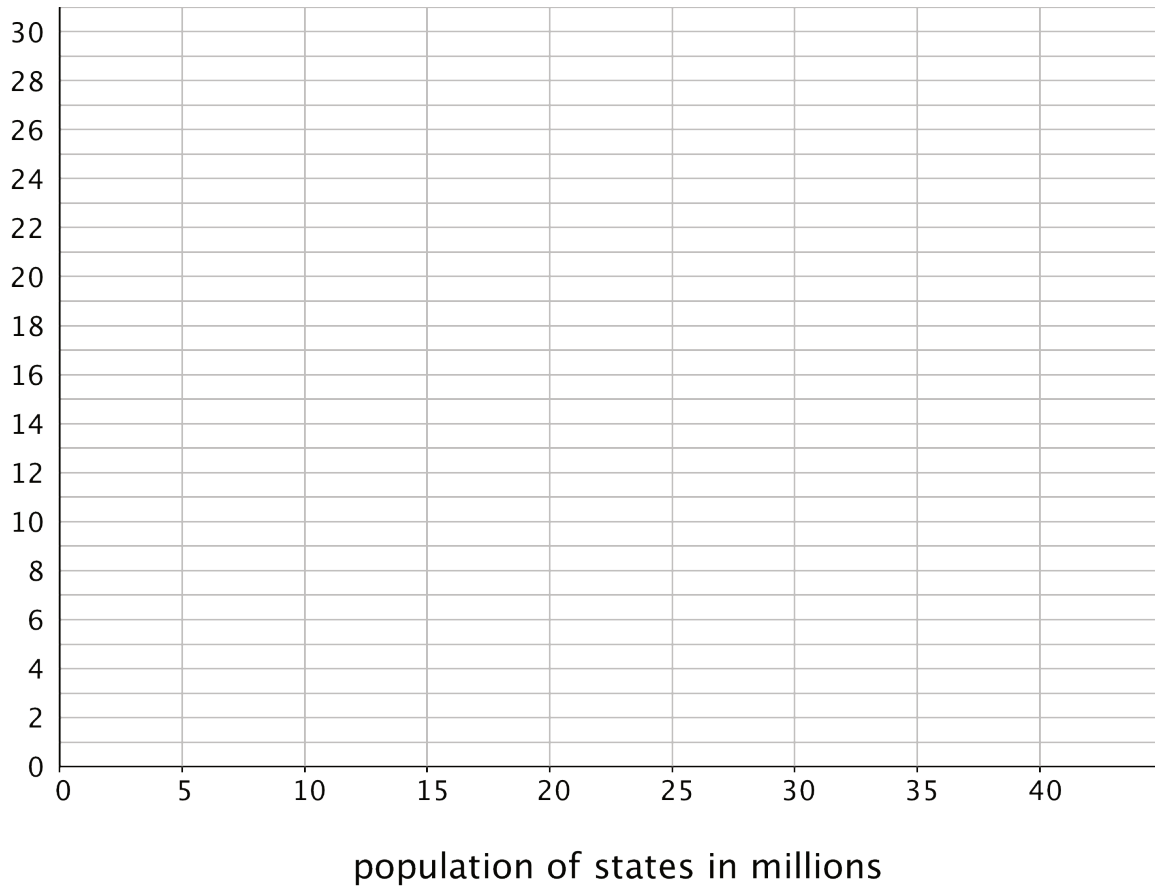
4. Return to the statistical questions at the beginning of the activity. Which ones are now easier to answer?

In the last column of the table, rate each question with an E (easy), H (hard), and I (impossible) based on how difficult it is to answer them. Be prepared to explain your reasoning.

Images for Activity Synthesis

dog weights in kilograms