

Additional Practice**Investigation 1****Samples and Populations**

Another peanut butter survey was conducted more recently than the survey you studied in Investigation 1. The data for natural and regular brands are presented in the table.

Peanut Butter Comparisons

Brand	Quality Rating	Sodium per Serving (mg)	Price per Serving	Regular/Natural	Creamy/Chunky	Name Brand/Store Brand
Arrowhead Mills	85	0	36	natural	creamy	name
Laura Scudder's (Southeast)	79	165	25	natural	creamy	name
Adams (West)	73	173	23	natural	creamy	name
Smucker's	73	180	26	natural	creamy	name
Nature's Cupboard (Safeway)	68	240	26	natural	creamy	store
Laura Scudder's Nutty (Southeast)	84	165	26	natural	chunky	name
Arrowhead Mills	83	0	37	natural	chunky	name
Smucker's	79	180	26	natural	chunky	name
Adams (West)	75	135	23	natural	chunky	name
Nature's Cupboard (Safeway)	72	195	26	natural	chunky	store
Jif	85	225	19	regular	creamy	name
Simply Jif	85	98	19	regular	creamy	name
Peter Pan	82	225	17	regular	creamy	name
Skippy	82	225	18	regular	creamy	name
Kroger	79	195	15	regular	creamy	store
Skippy Roasted Honey Nut	79	180	19	regular	creamy	name
America's Choice	77	225	17	regular	creamy	store
Reese's	68	173	19	regular	creamy	name
Townhouse (Safeway)	68	240	18	regular	creamy	store
Peter Pan Very Low Sodium	57	15	18	regular	creamy	name
Peter Pan Whipped	49	173	17	regular	creamy	name
Jif Extra Crunchy	88	195	19	regular	chunky	name
Skippy Super Chunk	87	210	19	regular	chunky	name
Peter Pan Extra Crunchy	86	180	17	regular	chunky	name
Reese's	86	120	19	regular	chunky	name
Skippy Roasted Honey Nut	86	180	19	regular	chunky	name
Kroger	84	195	15	regular	chunky	store
Simply Jif Extra Crunchy	83	75	19	regular	chunky	name
America's Choice Krunchy	80	188	17	regular	chunky	store
Townhouse (Safeway)	72	195	18	regular	chunky	store

Source: "Peanut Butter: It's Not Just for Kids Anymore." *Consumer Reports* (September 1995): pp. 576–579.

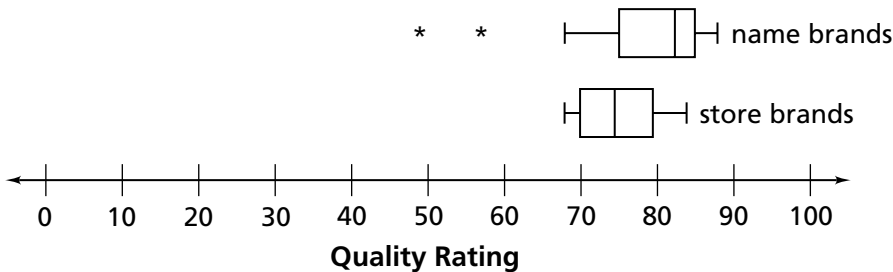
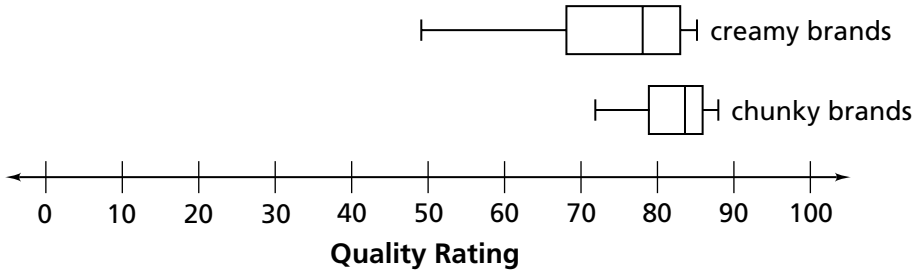
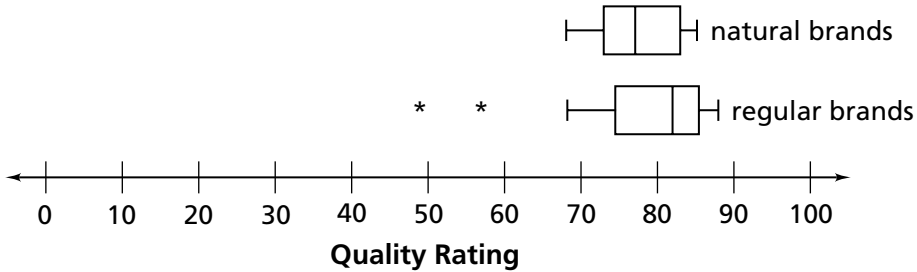
Additional Practice *(continued)*

Investigation 1

Samples and Populations

1. The box plots below show the quality ratings of natural versus regular brands, creamy versus chunky brands, and name brands versus store brands. Based on these box plots, what characteristics would you look for if you wanted to choose a peanut butter based on quality rating? Explain your reasoning.

Quality Comparisons



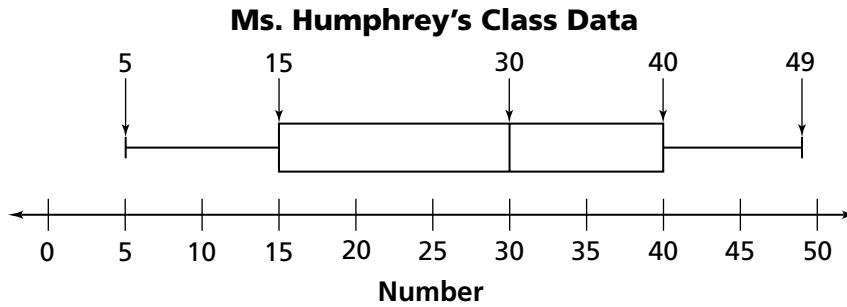
2. Make box plots to compare the peanut butters based on price. Mark any outliers with an asterisk (*). Which characteristic(s) help identify low-price peanut butters? Explain your reasoning.

Additional Practice *(continued)*

Investigation 1

Samples and Populations

Ms. Humphrey asked each of the 21 students in her class to choose a number between 1 and 50. Ms. Humphrey recorded the data and made this box plot:



3. What is the median number that was chosen?

4. What percent of students in Ms. Humphrey's class chose numbers above 15? Explain your reasoning.

5. About how many students chose numbers between 30 and 40? Explain.

6. What were the least and the greatest numbers chosen?

7. Is it possible to determine from the box plot whether one of the students chose the number 27? Explain.

8. Is it possible to determine from the box plot whether one of the students chose the number 4? Explain.

Additional Practice *(continued)*

Investigation 1

Samples and Populations

For Exercises 9–12, refer to the table on the next page.

9. Finish computing the values for the fifth column.
10. What does it mean when the ratio of wingspan to body length is 1? Greater than 1? Less than 1?
11. Compute the five-number summary for jet planes and the five-number summary for propeller planes of the ratio of wingspan to body length. Explain what the medians tell you about the relationship between wingspan and body length for jet planes and for propeller planes.
12. Make box plots from your five-number summaries. Explain what your plots reveal about how jet planes and propeller planes compare based on ratio of wingspan to body length.

Additional Practice *(continued)***Investigation 1****Samples and Populations****Airplane Data**

Plane	Engine Type	Body Length (m)	Wingspan (m)	Wingspan-to-Length Ratio
Boeing 707	jet	46.6	44.4	0.953
Boeing 747	jet	70.7	59.6	0.843
Ilyushin IL-86	jet	59.5	48.1	
McDonnell Douglas DC-8	jet	57.1	45.2	
Antonov An-124	jet	69.1	73.3	
British Aerospace 146	jet	28.6	26.3	
Lockheed C-5 Galaxy	jet	75.5	67.9	
Antonov An-225	jet	84.0	88.4	
Airbus A300	jet	54.1	44.9	
Airbus A310	jet	46.0	43.9	
Airbus A320	jet	37.5	33.9	
Boeing 737	jet	33.4	28.9	
Boeing 757	jet	47.3	38.1	
Boeing 767	jet	48.5	47.6	
Lockheed Tristar L-1011	jet	54.2	47.3	
McDonnell Douglas DC-10	jet	55.5	50.4	
Aero/Boeing Spacelines Guppy	propeller	43.8	47.6	
Douglas DC-4 C-54 Skymaster	propeller	28.6	35.8	
Douglas DC-6	propeller	32.2	35.8	
Lockheed L-188 Electra	propeller	31.8	30.2	
Vickers Viscount	propeller	26.1	28.6	
Antonov An-12	propeller	33.1	38.0	
de Havilland DHC Dash-7	propeller	24.5	28.4	
Lockheed C-130 Hercules/L-100	propeller	34.4	40.4	
British Aerospace 748/ATP	propeller	26.0	30.6	
Convair 240	propeller	24.1	32.1	
Curtiss C-46 Commando	propeller	23.3	32.9	
Douglas DC-3	propeller	19.7	29.0	
Grumman Gulfstream I/I-C	propeller	19.4	23.9	
Ilyushin IL-14	propeller	22.3	31.7	
Martin 4-0-4	propeller	22.8	28.4	
Saab 340	propeller	19.7	21.4	

Source: William Berk and Frank Berk. *Airport Airplanes*. Plymouth, Mich.: Plymouth Press, 1993.