

One Variable Statistics

Paper Clip Race Questions

a) Write down the totals from our class here:

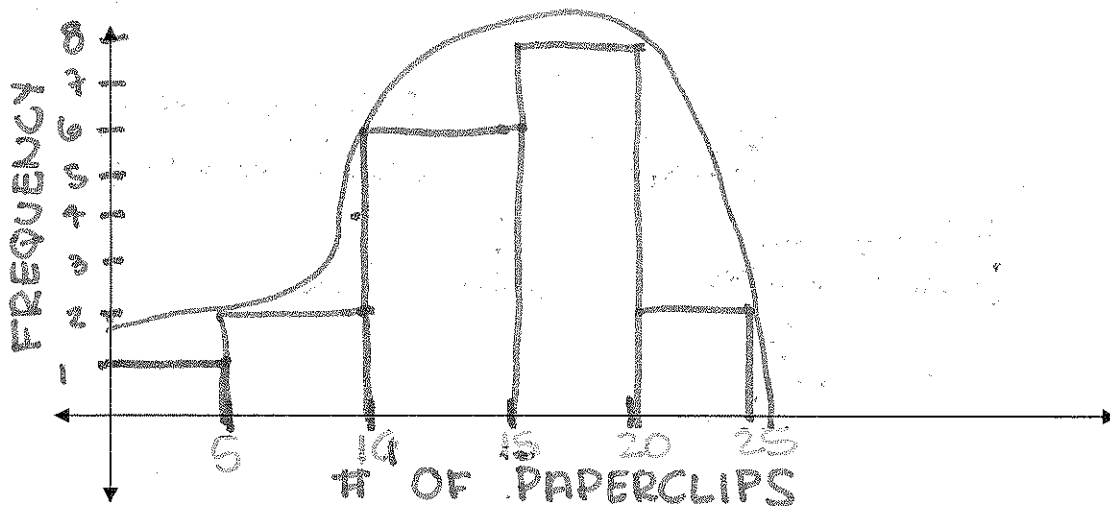
b) Create your frequency table here:

# of Paper Clips in Chain	Frequency
0-5	1
6-10	2
11-15	6
16-20	8
<del>21</del> 21-25	2

5-7 Intervals

c) Create your histogram here (Don't forget to label your histogram!!):

Histograms are like bar graphs, but the x-axis is broken into intervals and the bars touch each other.



d) How many students are in our class? What percentage of students connected <sup>16</sup>15 or more paperclips?

19 students.

$$\frac{10}{19} = \frac{x}{100}$$

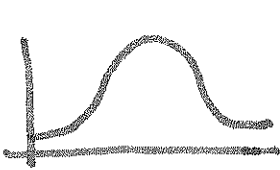
$$19x = 1000$$

$$\boxed{52.63\%}$$

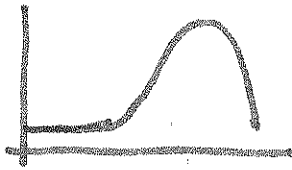
e) What do you think the plot for Mrs. Funderburk's class might look like?

## Describing Statistics

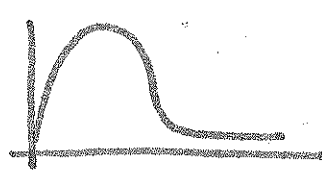
1) Shape: There are four types of shapes that describe histograms. They are



MOUND



SKENED LEFT  
(tail on left)



SKEWED RIGHT  
(tail on right)



UNIFORM

2) Center: eyeball the graph to find the average

3) Spread: to describe spread, we use the range. The way to calculate this is

$$\underline{\text{RANGE}} = \underline{\text{MAXIMUM}} - \underline{\text{MINIMUM}}$$

4) Outliers: eyeball any numbers that are separate from "most" of the data.

When we are asked to describe the distribution in context, we right all four characteristics into one paragraph using the following template:

The shape of the histogram is skewed left. Most # of paperclips was chained are around  
(Shape) (what we measured)

15. The # of paperclips spreads from 4 to 21 with a range of  
(center) (what we measured) (min) (max)

17. \*\*The outlier is 4.  
(range) (outlier)

\*\*If there are no outliers. Replace the last sentence with "There are no outliers in the data."

UNIT 7 • WORKING WITH DATA

Day 53

Day 53 Practice

Histograms and Comparing Distributions II

Use the data for May and February temperatures to fill in the histograms and frequency tables. Then, use both histograms to answer question 7.

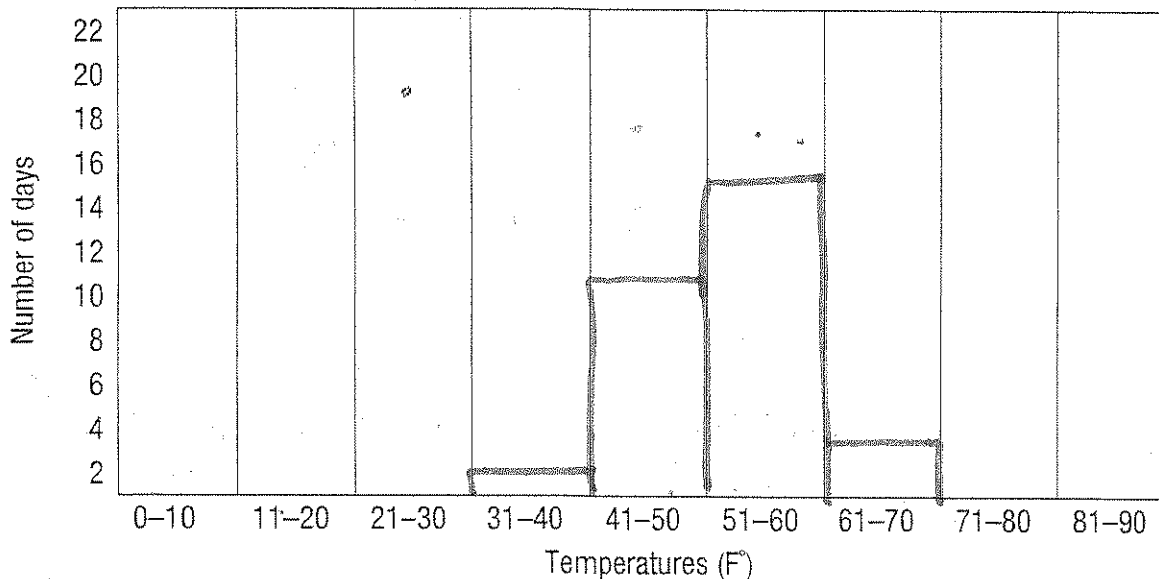
May Temperatures

Daily temperatures: 42, 45, 41, 51, 55, 53, 42, 39, 55, 56, 43, 49, 59, 60, 61, 57, 58, 47, 52, 53, 62, 48, 55, 58, 55, 54, 45, 63, 39, 42, 43

1. Fill in the frequency table.

0-10	0	31-40	2	61-70	3
11-20	0	41-50	1	71-80	0
21-30	0	51-60	15	81-90	0

2. Fill in the histogram.



3. Describe the following:

Shape of the plot: mound

Spread: 63-39 = 24

Interval with the center: 51-60

Apparent outliers: none

continued

## UNIT 7 • WORKING WITH DATA

## Day 53

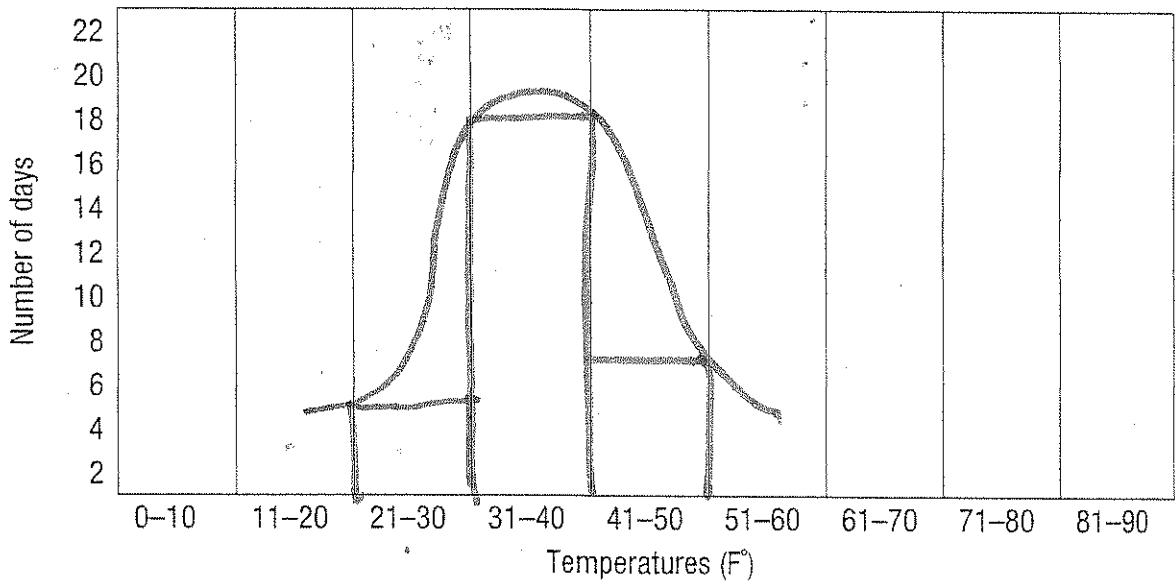
## February Temperatures

Daily temperatures: 42, 41, 36, 38, 39, 32, 35, 42, 43, 50, 32, 31, 39, 38, 37, 37, 39, 40, 42, 34, 37, 28, 26, 25, 31, 34, 30, 32, 41, 29

4. Fill in the frequency table.

0-10	0	31-40	18	61-70	0
11-20	0	41-50	7	71-80	0
21-30	5	51-60	0	81-90	0

5. Fill in the histogram.



6. Describe the following:

Shape of the plot: moundSpread: 50 - 25 = 25Interval with the center: 31-40Apparent outliers: none

7. Compare the May and February histograms. What do you notice?

SIMILAR SHAPE AND SPREAD. HOWEVER, THE CENTER IN FEBRUARY IS LOWER THAN THE CENTER IN MAY. → THIS SHOWS AVERAGE TEMPERATURES ARE LOWER IN FEBRUARY THAN IN MAY

- 1) The following frequency table lists the ages of patrons dining at a local restaurant at 7:00 PM.

Age	Frequency
1-10	1
11-20	4
21-30	5
31-40	7
41-50	6
51-60	5
61-70	1

- a) Construct a histogram for the data. Use graph paper!
- b) Describe the data distribution in context (shape, center, spread, and any outliers).

- 2) A bank wants to improve its customer service. Before deciding to hire more workers, the manager decides to get some information on the waiting times customers currently experience. During a week, 50 customers were randomly selected, and their waiting times, in minutes, were recorded.

The data are as follows: 18.5, 9.1, 3.1, 6.2, 1.3, 0.5, 4.2, 5.2, 0.0, 10.8, 5.8, 1.8, 1.5, 1.9, 0.4, 3.5, 8.5, 11.1, 0.3, 1.2, 4.4, 3.8, 5.8, 1.9, 3.6, 2.5, 4.5, 5.8, 1.5, 0.7, 0.8, 0.1, 9.7, 2.6, 0.8, 1.2, 2.9, 3.0, 3.2, 2.8, 10.9, 0.1, 5.9, 1.4, 0.3, 5.5, 4.8, 0.9, 1.6, and 2.2.

- a) Construct a frequency table of the data. (Remember to define the classes so that there are approximately 5-7 groupings.)
- b) Construct a histogram. Use graph paper!
- c) Describe the data distribution in context.

0.0 - 3.5  
 3.6 - 7  
 7.1 - 10.5  
 10.6 - 14  
 14.1 - 17.5  
 17.6 - 21  
 17.6

