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10-2 Frequency and Histograms.....#

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**Objectives**

Create stem-and-leaf plots.  
 Create frequency tables and histograms.

Jan 21-1:21 PM

A **stem-and-leaf** plot arranges data by dividing each data value into two parts. This allows you to see each data value.

The digits other than the last digit of each value are called a stem. The last digit of a value is called a leaf.

2 3

Stem	Leaves

Key: 2|3 means 23

The key tells you how to read each value.

Jan 26-9:50 AM

The numbers of defective widgets in batches of 1000 are given below. Use the data to make a stem-and-leaf plot.

~~14, 12, 8, 9, 13, 20, 15, 9, 21, 8, 13, 19~~

**Number of Defective Widgets per Batch**

Stem	Leaves
0	8 8 9 9
1	2 3 3 4 5 9
2	0 1

The tens digits are the stems.  
 The ones digits are the leaves. List the leaves from least to greatest within each row.

Key: 1|2 = 12  
 Title the graph and add a key.  
 1|2 1.2

Jan 26-9:53 AM

Use the data to make a back-to-back stem-and-leaf plot.

Team A: 65, 42, 56, 49, 58, 42, 61, 55, 45, 72

**Football State Championship Scores**

Team A	3	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 5px;">4</td> <td style="padding: 5px;">5</td> </tr> <tr> <td style="padding: 5px;">5</td> <td style="padding: 5px;">6</td> </tr> <tr> <td style="padding: 5px;">6</td> <td style="padding: 5px;">7</td> </tr> <tr> <td style="padding: 5px;">7</td> <td style="padding: 5px;">8</td> </tr> <tr> <td style="padding: 5px;">8</td> <td style="padding: 5px;">9</td> </tr> </table>	4	5	5	6	6	7	7	8	8	9
4	5											
5	6											
6	7											
7	8											
8	9											
9 5 2 2	4											
8 6 5	5											
5 1	6											
2	7											

2|4| means 42

Jan 26-9:57 AM

5th hr scores ~~34 45 26 45 34 46 38 27 45 32 40 31 27 34~~

6th hr scores ~~43 38 45 27 33 35 28 41 45 42 27 24 35 36 43 33~~

1. Make a stem and leaf plot for the 5th hour class.

key

5 <sup>th</sup>		6 <sup>th</sup>
1		1
2		2
3		3 5 5 6 8
4		3 5

1|3| = 31      1|5| = 35

2. Make a back to back stem and leaf plot for 5th and 6th hours

Feb 4-1:56 PM

The **frequency** of a data value is the number of times it occurs. A **frequency table** shows the frequency of each data value. If the data is divided into intervals, the table shows the frequency of each interval.

~~12, 22, 18, 9, 25, 31, 28, 19, 22, 27, 32, 14~~

Enrollment in Western Civilization Classes	
Number Enrolled	Frequency
1 – 10	1
11 – 20	4
21 – 30	5
31 – 40	2

Jan 26-10:03 AM

How do you decide your intervals?

3. Make a Frequency table.

a) Identify the minimum and maximum values.  
 b) Set equal intervals. Usually around 6-8 intervals are needed.  
 c) Tally the data. Add your tallies for the frequencies.

Data: ~~77, 71, 70, 82, 67, 56, 73, 68, 62, 83, 54, 74, 68, 73, 80~~

Scores	Tally	Frequency
50-54		1
55-59		1
60-64		1
65-69		2
70-74		4
75-79		1
80-84		3

83-54  
29/30  
int. 5

Histogram Data

5. Add a cumulative frequency column to your table.

Feb 4-2:46 PM

A **histogram** is a bar graph used to display the frequency of data divided into equal intervals. The bars must be of equal width and should touch, but not overlap.

Usually one color.

Jan 26-10:08 AM

4. The numbers of pounds of laundry in the washers at a laundromat are given below. Use the data to make a frequency table and histogram.

2, 12, 4, 8, 5, 8, 11, 3, 6, 9, 8

Pounds	Tally	Frequency

Jan 26-10:12 AM

Assignment:

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problems 5, 8-12

9. ~~3.6, 2.9, 3.1, 3.0, 2.5, 2.6,~~  
~~2.8, 2.9, 2.2, 2.9, 3.1, 3.3, 3.6~~  
~~3.0, 2.3, 2.8, 2.9~~

Intervals	Tally	# Frequency
22-23		1
24-25		1
26-27		2
28-29		2
30-31		2
32-33		2
34-35		2
36-37		2
38-39		2

Jan 26-12:10 PM