Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 10 LESSON 8

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| AIM: | SWBAT create histograms |

**THINK ABOUT IT!**

On the calendar below, Mindy recorded the daily high temperature in degrees Fahrenheit (°F) for the first fifteen days in May. Mindy wants to know the shape of the distribution of the temperatures.



Create a frequency table and a histogram to model the data.



**86-90**

**81-85**

**76-80**

**66-70**

**71-75**

**Daily High Temperatures May 1-15**

**Number of Days**

**Temperature (°F)**

**0**

**0**

**1**

**2**

**3**

**4**

**5**

**61-65**

Which representation will best help Mindy know the shape of the data- the frequency table or the histogram? Why?

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Key Point

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| A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allows one to easily see the \_\_\_\_\_\_\_\_\_\_\_ of a data set’s distribution. |

**Interaction with New Material3**

*Ex. 1)* Mr. Tillman graded his students’ interim assessments and wants to share the data with his class. The students’ scores are as follows:

63, 65, 73, 72, 86, 77, 89, 75, 62, 63, 92, 75, 88, 95, 89, 81, 99, 82, 79, 88, 92

* + - * + Create a frequency table and histogram to model the data.



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* + - * + What conclusions can you draw based on the shape, center, and spread of the data?

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**PARTNER PRACTICE**

CFS:

* + **Frequency Tables**
		- Column Headings with units (Intervals, tally, frequency)
		- Appropriate intervals
	+ **Histograms include**
		- Title
		- Labels with units
		- Appropriate interval
		- Bars that are touching and of equal width

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| *Bachelor Level* |

* + - 1. The scores on a mathematics test were:

70, 55, 61, 80, 85, 72, 65, 40, 74, 68

Complete the accompanying frequency table and use the table to construct a histogram for these scores.





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| *Master Level* |

Use problem 1 to answer the following questions:

* + - 1. Describe the shape, center, and spread of the data

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* + - 1. What percent of the students failed the test (<70%)?
			2. In which interval would you most likely find the median? Explain.

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**INDEPENDENT PRACTICE[[1]](#endnote-1)**

CFS:

* + **Frequency Tables**
		- Column Headings with units (Intervals, tally, frequency)
		- Appropriate intervals
	+ **Histograms include**
		- Title
		- Labels with units
		- Appropriate interval
		- Bars that are touching and of equal width

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| *Bachelor Level* |

The boys and girls basketball teams at Roosevelt Middle School wanted to raise money to help buy new uniforms. They decided to sell hats with the school logo on the front to family members and other interested fans. To obtain the correct hat size, the students had to measure the head circumference (distance around the head) of the adults who wanted to order a hat. The following data represents the head circumferences, in millimeters (mm), of the adults:

513, 525, 531, 533, 535, 535, 542, 543, 546, 549, 551, 552, 552, 553, 554, 555, 560, 561, 563, 563, 563, 565, 565, 568, 568, 571, 571, 574, 577, 580, 583, 583, 584, 585, 591, 595, 598, 603, 612, 618

The hats come in six sizes: XS, S, M, L, XL, and XXL. Each hat size covers a span of head circumferences. The hat manufacturer gave the students the table below that shows the interval of head circumferences for each hat size.

1. Complete the frequency table below

|  |  |  |  |
| --- | --- | --- | --- |
| **Hat Sizes** | **Interval of Head Circumference (mm)** | **Tally** | **Frequency** |
| XS |  |  |  |
| S |  |  |  |
| M |  |  |  |
| L |  |  |  |
| XL |  |  |  |
| XXL |  |  |  |

1. Create a histogram of the data



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| *Master Level* |

* + - 1. Ms. Patel wants to know where she can buy a big bag of Flamin’ Hot Cheetos for the cheapest cost. She has researched 12 stores and found the following prices:

$0.50 $1.25 $0.99 $0.59

$0.75 $1.07 $1.09 $0.89

$0.49 $0.66 $1.01 $0.77

Create a frequency table and histogram using the data above.

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1. What is a typical price for the Cheetos? How do you know? Support your answer with mathematical reasoning.

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1. What percent of the chips cost under 60%?
2. What does the shape of the data tell you about the cost of Cheetos?

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| *PhD Level* |

* + - 1. Data Set 3 consists of data on the number of text messages sent in one month for 100 teenage girls who have a cell phone. Data Set 4 consists of data on the number of text messages sent in one month for 100 teenage boys who have a cell phone. Histograms of the two data sets are shown below.



* + - * 1. Describe the data distribution of number of text messages for the girls. Be sure to comment on center, spread and overall shape.

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* + - * 1. On average, did the girls (Data Set 3) or the boys (Data Set 4) send more text messages? How do you know?

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* + - * 1. Which of Data Set 3 and Data Set 4 has greater spread? By how much?

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**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

CFS:

* + **Frequency Tables**
		- Column Headings with units (Intervals, tally, frequency)
		- Appropriate intervals
	+ **Histograms include**
		- Title
		- Labels with units
		- Appropriate interval
		- Bars that are touching and of equal width

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| Self-assessment | I mastered the learning objective today. | I am almost there.  | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there.  | You need more practice and feedback. |

* + - 1. Twenty students were surveyed about the number of days they played outside in one week. The results of this survey are shown below.

{6, 5, 4, 5, 0, 7, 1, 5, 4, 4, 3, 2, 2, 3, 2, 4, 3, 4, 0, 7}

Complete the frequency table for these data.



* + - 1. On the grid below, create ahistogram based on the table you made.

***Flip Over***

* + - 1. Answer the following questions about the data distribution:
				1. How many students played outside less than 4 days? \_\_\_\_\_\_\_\_\_\_
				2. What does the shape of the histogram tell you about how much students play outside?

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