

Welcome back MYP 9 Math!

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: <u>4-23</u> Topic: <u>Friday was Quiz 7.1</u>	0 1 2	
Tuesday Date: <u>4-24</u> Topic: <u>17A Comparing Data Sets</u>	0 1 2	
Wednesday Date: <u>4-25</u> Topic: <u>17BC Comparing Data Displays</u>	0 1 2	
Thursday Date: _____ Topic: _____	0 1 2	
Friday Date: _____ Topic: _____	0 1 2	

With your partner...
Choose your practice review.

Isles vs. Harriet GPA's



April vs. May Precipitation



Do: Data Comparison Review.

Done? 1) Correct against posted key.
2) Consider strengths within your pair...who is efficient on the calculator?
creates the best displays? Thorough analysis?

Isles vs. Harriet GPA's



GPA's 9th Grade Students

Set A – Team Harriett	2.667	3.667	3.667	3.667	4.0	1.667	3.667	3.667	3.667	4.0	2.333	4.0	4.0	4.0	4.0
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Set B – Team Isles	3.667	3.667	3.667	3.333	3.0	2.667	3.667	3.0	1.0	3.667	3.667	4.0	3.667	2.667	4.0
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Measures of Center

Set A

Mean: _____

Median: _____

Mode: _____

Set B

Mean: _____

Median: _____

Mode: _____

Analysis (What does this show you?):

Isles vs. Harriet GPA's



Set A

HARRIET

Mean: ~ 3.5

Median: 3.667

Mode: 3.667

Set B

ISLES

Mean: ~ 3.2

Median: 3.667

Mode: 3.667

Analysis:

- Although both groups of 15 students have the same most frequent and middle 3.667 GPA, the 15 students of team Harriet have a higher average GPA.

Isles vs. Harriet GPA's



Measures of Spread

Set A

Min _____ Q_1 _____ Median _____ Q_3 _____ Max _____

Range: _____ IQR: _____ Standard Deviation: _____

Set B

Min _____ Q_1 _____ Median _____ Q_3 _____ Max _____

Range: _____ IQR: _____ Standard Deviation: _____

Analysis (What does this show you?):

Isles vs. Harriet GPA's



Five Number Summary:

A: {1.667, 3.667, 3.667, 4, 4}
B: {1, 3, 3.667, 3.667, 4}

Measures of Spread

Set A Harriet
Range: 2.333 (4-1.667) MAX-MIN
IQR: .333 (4-3.667) Q3-Q1
Standard Deviation: .687

Set B Isles
Range: 3 (4-1)
IQR: .667 (3.667-3)
Standard Deviation: .739

Isles vs. Harriet GPA's



	Measures of Spread	
Set A	HARRIET	
Range:	2.333 (4-1.667)	MAX-MIN
IQR:	.333 (4-3.667)	Q3-Q1
Standard Deviation:	.687	
Set B	Isles	
Range:	3 (4-1)	
IQR:	.667 (3.667-3)	
Standard Deviation:	.739	

Analysis:

- Isles is more spread out, less consistent in their GPA's.
- 15 students on Harriet are 2.33 points between the highest and lowest GPA compared to 3 points on Isles.
- About 7 Harriet students score between 3.667 and 4, as opposed to Isles between 3 and 3.667.
- Team Harriet, on average, is only .687 points from an average 3.5 GPA.

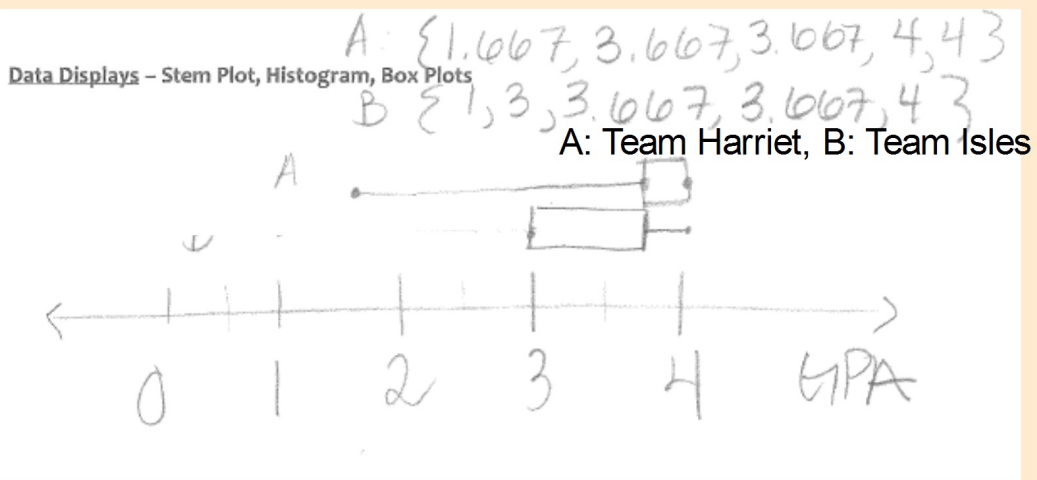
Isles vs. Harriet GPA's



Data Displays (Box Plots)



Isles vs. Harriet GPA's

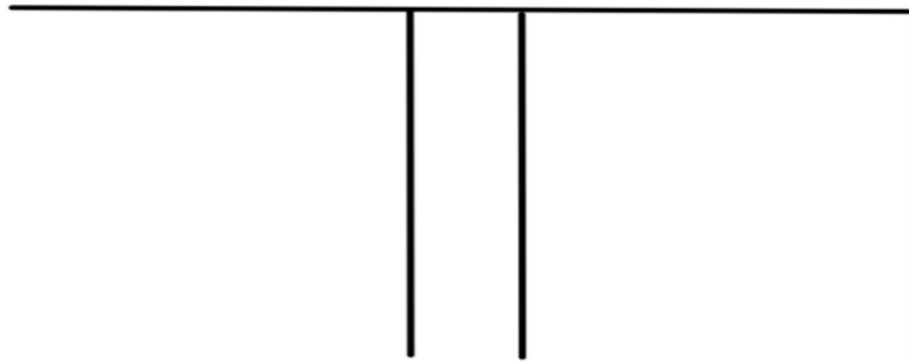


The box plots show Harriet is skewed negative, and Isles more symmetric. More high GPA's to the right of the scale!

Isles vs. Harriet GPA's



Data Display – Stem Plot



Isles vs. Harriet GPA's



HARRIETT		Isles
	0	
.667	1	0
.333, .667	2	.667, .667
.667, .667, .667, .667, .667, .667	3	0, 0, .333, .667, .667, .667, .667, .667, .667, .667, .667
0, 0, 0, 0, 0, 0	4	0, 0,

Scale: .333 | 2 | .667
 means 2.333 GPA for Harriet and 2.667 GPA for Isles

Isles vs. Harriet GPA's



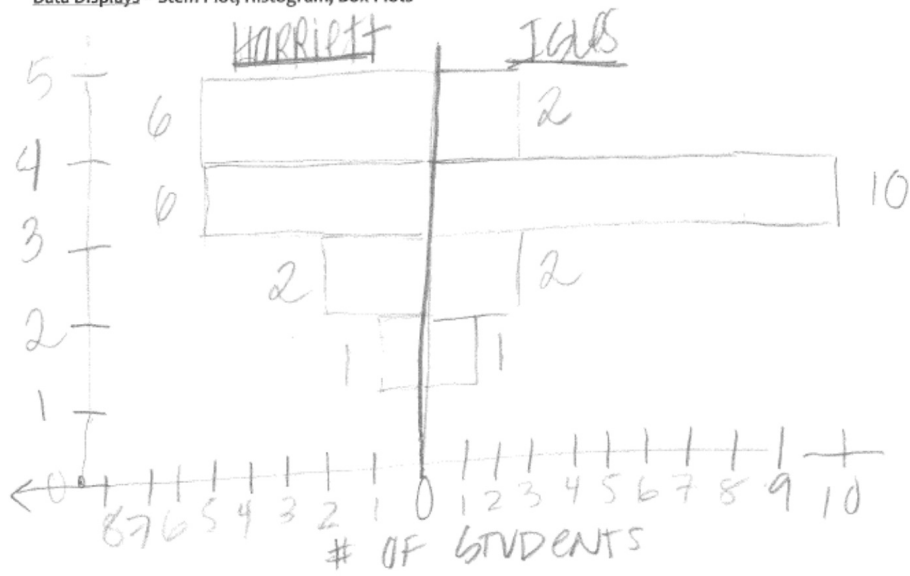
Data Display -Histogram



Isles vs. Harriet GPA's

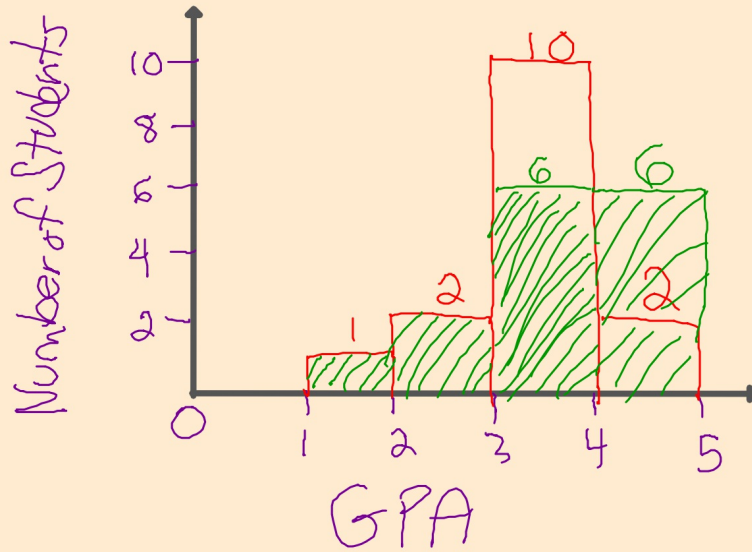


Data Displays - Stem Plot, Histogram, Box Plots



Isles vs. Harriet GPA's

□ Isles
▨ Harriet



Conclusion

Isles vs. Harriet GPA's



In conclusion, Team Harriet seemed to perform better during the 1st semester of high school, overall, than Team Isles.

- Team Harriet's average GPA is .3 points higher than Isles.
- Team Harriet also has a higher frequency of students who have a 4.0 GPA. This is shown in the histogram and stem plot, and this definitely affects the mean.
- Additionally, Harriet seems to be more consistent in their higher GPA's due to their GPA's being less spread out. This is shown in their low standard deviation and their skewed left box plot.

Limitations

Isles vs. Harriet GPA's



- The sample space of 15 students for each team was small. Each team has about 150 students, so this was only about 10% of the teams.
- These GPAs were taken from the first responders of the survey.
- GPA is not the only consideration of a "good" student.
- The data may have looked differently if we considered MPLS vs. Suburban high schools.

April vs. May Precipitation



Precipitation Data for 55410 (2003 – 2017)

Set A – April (Inches)	2.52	2.61	2.63	3.81	1.8	3.54	1.43	2.49	3.05	3.05	4.71	6.44	2.29	3.55	4.1
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Set B – May (Inches)	6.32	5.61	3.33	2.8	2.67	2.36	0.44	2.64	4.76	9.34	5.88	4.05	4.19	2.22	5.93
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Measures of Center

Set A

Mean: _____

Median: _____

Mode: _____

Set B

Mean: _____

Median: _____

Mode: _____

Analysis (What does this show you?):

April vs. May Precipitation

Measures of Center

Set A

Mean: 3.2

Median: 3.05

Mode: —

Set B

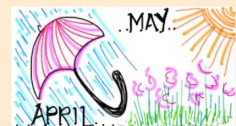
Mean: 4.32

Median: 4.19

Mode: 3.05

Analysis:

- May definitely averaged more inches of rain compared to April. 50% of the years in the data rair more than 4.19 inches in May. This is more than an inch compared to April!



April vs. May Precipitation

Measures of Spread

Set A

Min _____ Q_1 _____ Median _____ Q_3 _____ Max _____

Range: _____ IQR: _____ Standard Deviation: _____

Set B

Min _____ Q_1 _____ Median _____ Q_3 _____ Max _____

Range: _____ IQR: _____ Standard Deviation: _____

Analysis (What does this show you?):





April vs. May Precipitation

Measures of Spread

Set A

Min 1.53 q_1 2.49 Median 3.05 q_3 3.81 Max 6.44

Range: 5.01 IQR: 1.32 Standard Deviation: 1.2

Set B

Min 0.44 q_1 2.64 Median 4.19 q_3 5.88 Max 9.34

Range: 8.9 IQR: 3.24 Standard Deviation: 2.13

Analysis:

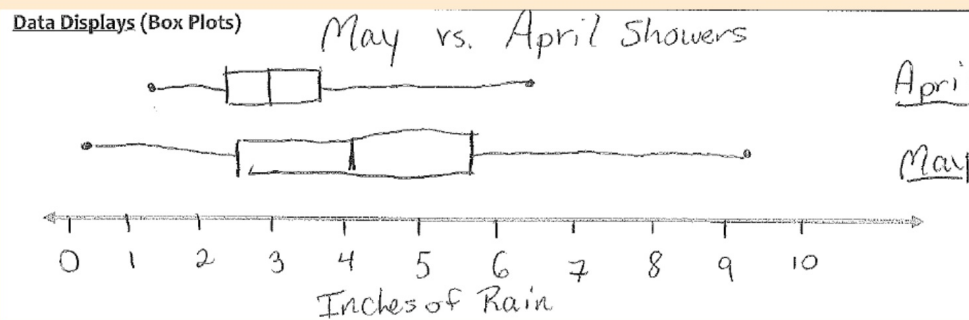
- May is spread out, less consistent in their amount of rain.
- There are almost 9 inches of rain between the years with the lowest and highest amounts in May, compared to only 5 inches for April.
- April, on average, is only 1.2 inches from an average of 3.2 inches of rain, compared to May with over 2 inches from their high average of 4.3 inches.

April vs. May Precipitation

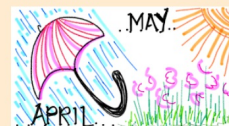
Data Displays (Box Plots)



April vs. May Precipitation

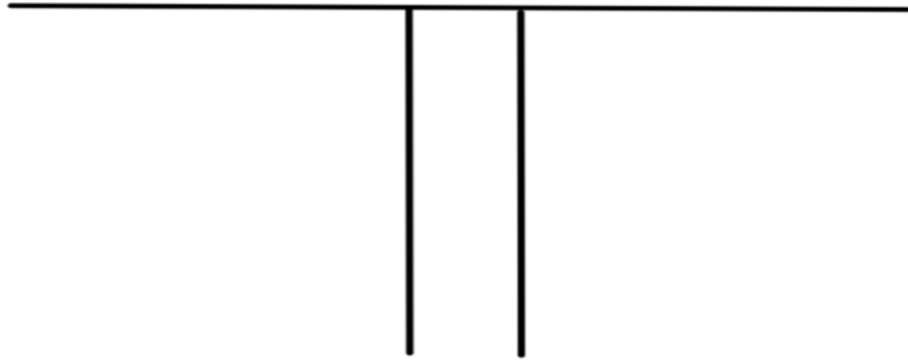


The box plots show April is skewed positive, and May is slightly more symmetric. The box plots reinforce that May is very spread out in their rain - hard to predict May rain!!

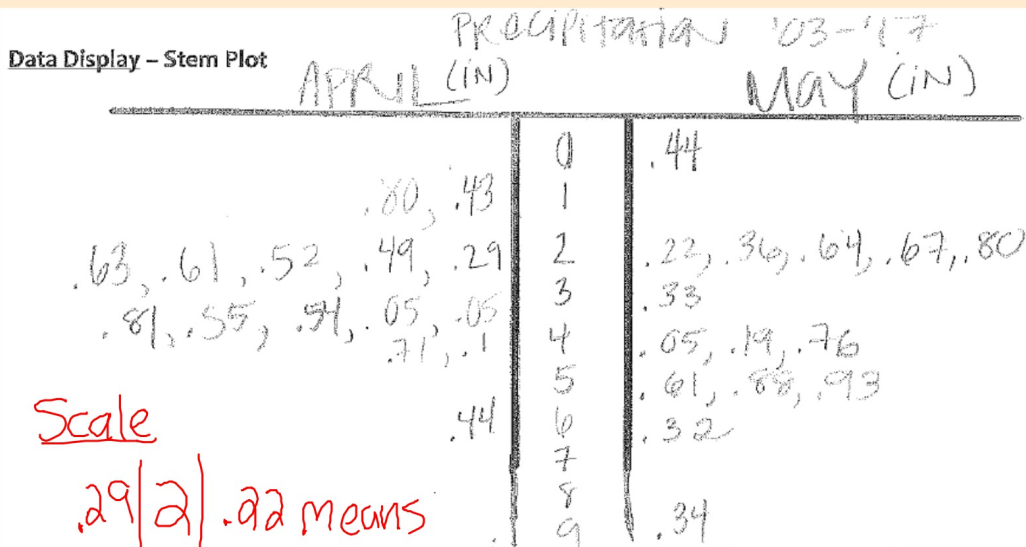


April vs. May Precipitation

Data Display – Stem Plot



April vs. May Precipitation



Scale

.29 | 2 | .22 means

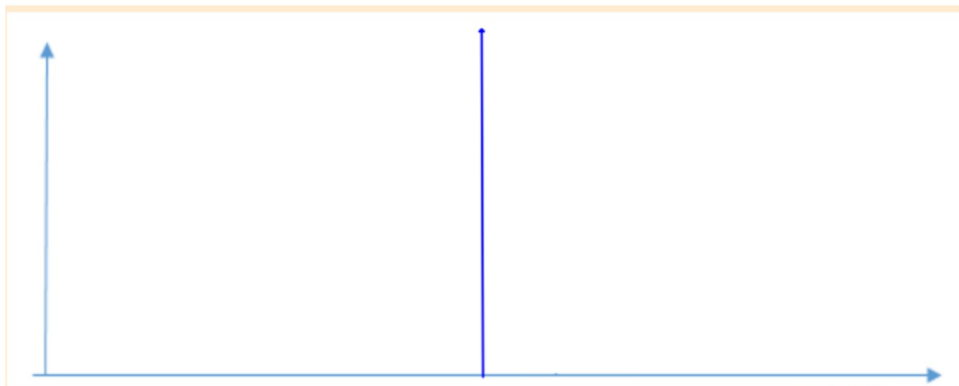
2.29 in. in April

& 2.22 in. in May

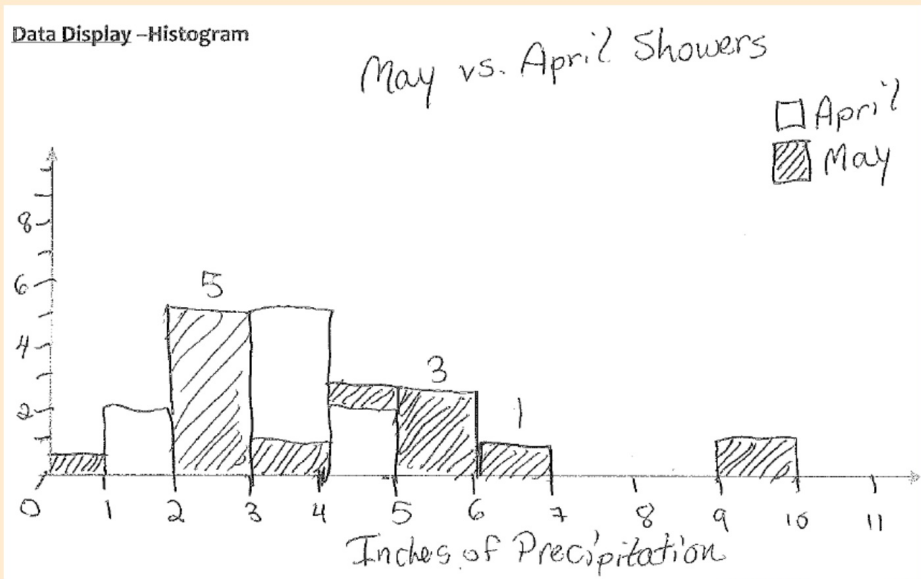


April vs. May Precipitation

Data Display - Histogram



April vs. May Precipitation

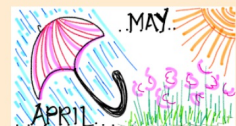


Conclusion

April vs. May Precipitation

In conclusion, May seems to have more rain. The saying "April showers brings May flowers" seems flawed.

- May has a larger average rainfall by over an inch.
- May also has a higher maximum rainfall.
- Additionally, half of the years of the data have raifalls over 4 inches compared to April with 3 inches.



April vs. May Precipitation

Limitations

- The sample space of 15 years for each month was small. Meteorologists have been recording rainfalls for many decades.
- These rainfalls were taken from most recent years, but there have been other years with different outcomes.
- Mr. Sturm (former meteorologist, current SW math teacher) has stated that May has a lot of thunderstorms, while April has more "showers".
- The data may have looked differently if we considered other parts of the city, state, country, or hemisphere!

