13.3.4 Journal: Describing Distributions   Journal

Algebra I
Points Possible: 20

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Date:

Scenario: Relay Track Teams

Instructions:

- View the video found on page 1 of this journal activity.

- Using the information provided in the video, answer the questions below.

- Show your work for all calculations.

Three teams are racing in the district meet. Below are the box plots representing the race times for each team. Analyze the data and decide who you think will win.
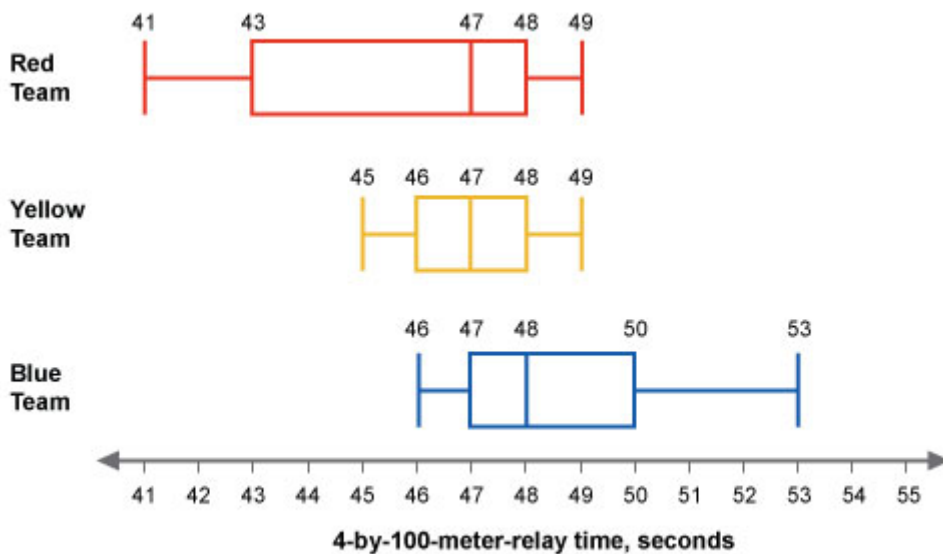
The Racers' Conjectures

1. Complete the table below to describe why each team member thinks his team will win the district meet. (**1 point**)

Team	Reason
Red	
Yellow	
Blue	

2. Looking at the box plots, do you agree or disagree with each team's conjecture? Explain your reasoning. (**3 points:** 1 point for each row of the chart)

Team	Yes or no	Reason
Red		
Yellow		
Blue		

Analyzing the Data

3. Use the box plots to complete the five-number summary chart. (**3 points:** 1 point for each row of the chart)

	Minimum	Lower quartile	Median	Upper quartile	Maximum
Red					
Yellow					
Blue					

4. Look at the box plots and decide whether each team's distribution is symmetric or skewed. Circle your answers. (**1 point**)

Red	Negatively skewed	Symmetric	Positively skewed
Yellow	Negatively skewed	Symmetric	Positively skewed
Blue	Negatively skewed	Symmetric	Positively skewed

Below are the actual race times, in seconds, for each team. They are listed in numerical order, not in the chronological order of actual races.

	Race 1	Race 2	Race 3	Race 4	Race 5	Race 6	Race 7	Race 8	Race 9
Red	47.5	42	48.5	44.5	47	41	48	43	49
Yellow	47.5	45.5	48.5	46.5	47	45	48	46	49
Blue	48.1	46.8	52	47.9	48	46	50	47	53

5. Use the race times to calculate the mean time for each team. Show your work.
(**3 points**: 1 point for each team)

Red

Yellow

Blue

6. How do the three teams rank based on mean times? List them in order from fastest to slowest, and explain your ranking. (**1 point**)

7. How do the three teams rank based on median times? Explain your ranking. (**1 point**)

8. What statistic should you use if you wish to compare the spreads? Explain your reasoning. (**1 point**)

9. The interquartile range for the red team's race times is 5 seconds. Find the IQR for the yellow and blue teams. (**2 point**)

10. What do the interquartile ranges (IQRs) tell you about how the teams race? Explain your thinking. (**1 points**)

Making a Decision

11. Now that you've analyzed the data, it's time to make a decision. Who do you think will win the district meet? Describe how you think each team will do, and explain your reasoning. (**3 points**)

Red:

Yellow:

Blue: