

Chapter 8 Investigation Guide

Before you begin the written report,

1. Choose at least three athletic *PERFORMANCES* from different eras to compare, like the example comparing home run hitters beginning on page 266.
2. Choose a group of comparable athletes for each of the selected *PERFORMANCES*. This should include only athletes who played regularly during the season. Many of the websites below allow you to sort by variables such as at-bats, games played, or number of attempts. This should help identify which athletes were regular players that season.

To complete the written report,

1. Write an introduction that describes the question of interest, identifies the *PERFORMANCES* that you are using to answer the question of interest, explains why you selected the *PERFORMANCES* that you chose, and gives some historical background about each of the selected *PERFORMANCES*.
2. Describe how you chose which athletes to use as comparison groups for each of the selected *PERFORMANCES*. Make sure to cite the source(s) of the data.
3. For each of the selected *PERFORMANCES*, graph the distribution of *PERFORMANCES* for the comparison group of athletes. Draw an arrow on your graph to indicate where the selected *PERFORMANCE* falls in the distribution.
4. For each distribution of *PERFORMANCES*, calculate the mean and standard deviation. Then, calculate and interpret the z -score for the selected *PERFORMANCE*. Show work for the calculations.
5. Write a conclusion that answers the question of interest and describes possible errors or limitations to your research.

Web sites with data for multiple sports include:

- www.sports-reference.com
- www.espn.com
- www.usatoday.com/sports
- sports.yahoo.com
- www.si.com

Rubric for Chapter 8 Investigation	4 = Complete	3 = Substantial	2 = Developing	1 = Minimal
Introduction	<ul style="list-style-type: none"> Includes a question of interest Introduces the <i>PERFORMANCES</i> that will be used to answer the question of interest Explains why selected <i>PERFORMANCES</i> were chosen Provides historical background for each <i>PERFORMANCE</i> 	<ul style="list-style-type: none"> Includes a question of interest and introduces the <i>PERFORMANCES</i> that will be used to answer the question of interest, but doesn't explain why they were chosen or doesn't provide historical background Clearly explains how comparison groups were chosen and selection criteria are reasonable 	<ul style="list-style-type: none"> Includes a question of interest and introduces the <i>PERFORMANCES</i> that will be used to answer the question of interest Attempts to explain how comparison groups were chosen and selection criteria are somewhat reasonable 	<ul style="list-style-type: none"> Includes a question of interest or introduces the <i>PERFORMANCES</i> that will be used to answer the question of interest
Data Collection	<ul style="list-style-type: none"> Clearly explains how comparison groups were selected Selection criteria are reasonable Cites sources for data 	<ul style="list-style-type: none"> Includes graphs for each comparison group, but graphs are not well done, selected <i>PERFORMANCES</i> aren't identified, or calculations are incorrect 	<ul style="list-style-type: none"> Includes graphs and calculations of means and standard deviations, but there are several problems 	<ul style="list-style-type: none"> Calculates means and standard deviations
Graphs and Summary Statistics	<ul style="list-style-type: none"> Includes well-labeled graphs of each comparison group Identifies selected <i>PERFORMANCES</i> on graphs Correctly calculates mean and standard deviation for each comparison group 	<ul style="list-style-type: none"> Correctly calculates and interprets z-scores, but doesn't show work, doesn't adequately answer question of interest, or show evidence of critical reflection 	<ul style="list-style-type: none"> Attempts to calculate and interpret z-scores 	<ul style="list-style-type: none"> Attempts to answer the question of interest
Interpretations and Conclusions	<ul style="list-style-type: none"> Correctly calculates z-score for each of the selected <i>PERFORMANCES</i>, with work shown Correctly interprets each z-score Correctly answers question of interest based on z-scores Shows some evidence of critical reflection (discusses possible errors, limitations, etc.) 	<ul style="list-style-type: none"> Investigation is organized, easy to read, but does not include appropriate transitions between sections or include a discussion about the usefulness of z-scores 	<ul style="list-style-type: none"> Investigation is somewhat organized, but has several major problems 	<ul style="list-style-type: none"> Communication and organization are poor
Overall Presentation/Communication	<ul style="list-style-type: none"> Clear, holistic picture of the investigation, including an discussion about the usefulness of z-scores for making comparisons across eras Investigation is well organized, neat and easy to read Ideas are well communicated, including appropriate transitions between sections 			