

Comparing Box Plots

ID: 13323

Time required
15 minutes

Activity Overview

In this activity, students will compare two distributions. Graphical and numerical representations will be used to draw conclusions. They will graph box plots on the same axes comparing shape, spread, and the five-number summary.

Topic: Graphing and Numerical Distributions

- *Graphing distributions*
- *Calculating measures of central tendency and spread*
- *Comparing distributions and drawing conclusions.*

Teacher Preparation and Notes

- *The activity is created so students can work independently or in small groups. They struggle drawing conclusions and justifying them. It may be necessary to discuss valid conclusions towards the end of the activity.*
- ***To download the student and solution TI-Nspire documents (.tns files) and student worksheet, go to education.ti.com/exchange and enter “13323” in the quick search box.***

Associated Materials

- *CompareBoxPlots_Student.doc*
- *CompareBoxPlots.tns*
- *CompareBoxPlots_Soln.tns*

Suggested Related Activity

To download any activity listed, go to education.ti.com/exchange and enter the number in the quick search box.

- *Box Plots and Histograms (TI-Nspire technology) — 9843*
- *Yankees vs. Mets (TI-Nspire technology) — 10997*

Problem 1 – Yankees vs. Mets

Introduction

Students are given a table of data with salaries of the Yankees and Mets (the two teams with the highest salary totals in Major League baseball). It is not included in the student worksheet, but you can ask students to visually inspect the data and draw preliminary conclusions. The conclusions should be vague since it is difficult to do from a table of values.

Note: The values in the spreadsheet have been shortened, so 28 represents 28,000,000.

	A yankee	B salary	C met	D metsa
1	Alex Rodr...	28	Carlos Be...	18.6
2	Jason Gia...	23.4286	Johan San...	16.9
3	Derek Jet...	21.6	Carlos De...	
4	Andy Pett...	16	Pedro Ma...	11.8
5	Bobby Ab...	16	Billy Wagn...	

Comparing distributions using box plots

On page 1.4, students are to create two box plots, one for each data set. They should match the box plot with the caption at the top of each part of the screen. To create a box plot, students need to select **Click or Enter to add variable** and then choose the variable they wish to graph. Then press **MENU > Plot Type > Box Plot** to change the dot plot to a box plot.

It is important that the box plots are drawn with the same scale on the horizontal axis. The student worksheet has appropriate settings. It is important for future problems that students understand how to determine these numbers.

Students are to include the five-number summary in their comparison. The five numbers, minimum, lower quartile, median, upper quartile, and maximum can be determined by moving over that part of the box plot with the cursor. Note that the min and max appear just as numbers with no label.

After comparing and answering the questions on the worksheet, have students grab and drag one or more of the outliers. This will allow them to see how the box plot changes with extreme values.

