



## Lesson 5 – Post-Visit Do Big League Salaries Equal Big Wins?

Objective: Students will be able to:

- Determine the average salary of a Major League Baseball player.
- Use charts to locate information.
- Compare data and recognize change over time.
- Use economic reasoning to support or oppose the argument that teams which spend more money on players win more often.

Time Required: 1 class period

Materials Needed: All printed materials are included.

- “2011 Table” (Student Worksheet)
- “2010 Table” (Student Worksheet)
- Calculators
- Research Materials
  - 2011 Average Team Salaries Page
  - 2011 Final Standings Page
  - 2010 Average Team Salaries Page
  - 2010 Final Standings Page

Sources:

If you prefer to have the students do online research in order to find information on team standings and salaries (rather than use the pages provided), direct them to the following websites:

- <http://www.cbssports.com/mlb/salaries/teams>
- <http://mlb.mlb.com/mlb/standings/>

Vocabulary:

**Payroll** – A list of all employees to be paid by a company, and the total of the amount due to each.



Applicable Common Core State Standards:

**CCSS.ELA-Literacy.RI.6.7** Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.

**CCSS.ELA-Literacy.W.6.1, W.7.1, W.8.1** Write arguments to support claims with clear reasons and relevant evidence.

**CCSS.ELA-Literacy.W.6.4, W.7.4, W.8.4** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

**CCSS.Math.Content.6.NS.B.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

**CCSS.Math.Content.6.SP.A.1** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.



## Lesson

1. Review that in this unit, students have explored many ways that the business of baseball earns money. Today students will explore the primary way that baseball teams spend the money they earn – player salaries.
2. Discuss that the World Series, the annual championship series of Major League Baseball, has been played almost every year for over 100 years\*. The New York Yankees have played in 40 World Series and have won 27 times, the most of any Major League team. In the last 10 years the Boston Red Sox have also been very successful, winning the World Series Championships in 2004 and 2007.
3. Discuss that a common perception is that teams like the Yankees and Red Sox win because they are able to spend more money to get better players to join their teams. Other teams don't have as much money to spend, and as a result don't win as often. Is this true?

\*The World Series was not held in 1904 or 1994



## Activity

1. In this activity, students will compare players' salaries and team records to find out if teams who pay their players more money really do win more often.
2. Start by looking at the 2011 season. Hand each student a copy of the "2011 Table" and a copy of the 2011 Average Team Salary Page -or- direct them to <http://www.cbssports.com/mlb/salaries/teams>. Ask the students to use the information available on the chart to fill out the worksheet column labeled "2011 Average Team Salary".
3. Have students review the team payroll information, and determine which 6 teams had the highest overall average salaries in Major League Baseball for the 2011 season.
  1. New York Yankees
  2. Philadelphia Phillies
  3. Boston Red Sox
  4. L.A. Angels of Anaheim
  5. Chicago White Sox
  6. Chicago Cubs
4. Have students determine the Average Player Salary for all of Major League Baseball. If necessary, remind students that this information can be determined by adding up the Average Player Salaries for each team, then dividing by the total number of teams.

*Total: \$99,565,656    MLB Average: \$3,318,855*
5. Now have students examine the standings at the end of the 2011 season. Provide students with a copy of the 2011 Regular Season Standings Page -or- direct them to <http://mlb.mlb.com/mlb/standings/>. Have students fill in the worksheet column labeled "2011 Win-Loss Record".



6. Discuss the following questions:

- In each league, which 3 teams had the best Win-Loss records?

*American League:*

1. New York Yankees
2. Texas Rangers
3. Detroit Tigers

*National League:*

1. Philadelphia Phillies
2. Milwaukee Brewers
3. Arizona Diamondbacks

- How many of the 6 teams with the best records were also on the list of teams with the highest average salaries? 2 – *Yankees, Phillies*
- We know that 2 of the 6 top teams for 2011 had some of the highest player salaries in baseball. What about the other 4? Compare the average salaries for the Rangers, Tigers, Brewers, and Diamondbacks to the MLB Average calculated earlier. Did players on these teams earn more or less than the average MLB player?
  - Rangers (less)
  - Tigers (more)
  - Brewers (less)
  - Diamondbacks (less)

7. Based on the information gathered so far, ask students if teams that spend more on their players are more successful. Students are welcome to take any side in this debate, but should be able to back up their opinions with evidence from the data.

8. Review the 2010 season and see how it compares. Hand each student a copy of the “2010 Table” and a copy of the 2010 Average Team Salary Page. Have the students fill out the worksheet column labeled “2010 Average Team Salary”. Then give the students a copy of the 2010 Regular Season Standings Page. As before, if you prefer to have students research online, you may direct them to the websites referenced earlier.

9. Have students fill out the 2010 Table in the same manner as the 2011 Table.

10. Give the students time to complete their tables, then work through the following problems together.



- Which 6 teams in 2010 had the highest average salaries?
  1. New York Yankees
  2. Boston Red Sox
  3. Chicago Cubs
  4. Philadelphia Phillies
  5. New York Mets
  6. Detroit Tigers
  
- In each league, which 3 teams had the best Win-Loss records in 2010?

*American League:*

  1. Tampa Bay Rays
  2. New York Yankees
  3. Minnesota Twins

*National League:*

  1. Philadelphia Phillies
  2. San Francisco Giants
  3. Cincinnati Reds
  
- How many of the 6 best teams were also on the list of teams with the highest average salaries? 2 – *Yankees and Phillies*

11. Have students determine the Average Player Salary for all of Major League Baseball during the 2010 season.

*Total: \$99,086,186      Average: \$3,302,873*

12. Compare the average salaries for the Rays, Twins, Giants, and Reds to the 2010 MLB average. Did players on these teams earn more or less than the average MLB player?

- Rays (Less)
- Twins (More)
- Giants (More)
- Reds (Less)

13. Encourage students to think about the information from both the 2010 and 2011 seasons. Would they agree or disagree with the idea that teams that pay their players more money are more likely to win? *Encourage the students to back up their opinions with evidence.*



14. So far, we've looked at only the top teams in the MLB for 2010 and 2011. What about the rest of the league?

- Which teams spent more money on salaries in 2011 than in 2010?
  - Pirates
  - Padres
  - Athletics
  - Rangers
  - Nationals
  - Blue Jays
  - Reds
  - Brewers
  - Orioles
  - Rockies
  - Braves
  - Mariners
  - Cardinals
  - Dodgers
  - Twins
  - Giants
  - Angels
  - White Sox
  - Phillies
  
- Which teams spent less money on salaries in 2011 than in 2010?
  - Marlins
  - Diamondbacks
  - Indians
  - Royals
  - Rays
  - Astros
  - Tigers
  - Mets
  - Cubs
  - Red Sox
  - Yankees



- Of the teams that spent more money in 2011, which improved their win-loss records from the previous year?
  - Pirates
  - Rangers
  - Nationals
  - Brewers
  - Orioles
  - Mariners
  - Cardinals
  - Dodgers
  - Angels
  - Phillies
  
- Which teams spent more money, but did not improve their win-loss records?
  - Padres
  - Athletics
  - Blue Jays
  - Reds
  - Rockies
  - Braves
  - Twins
  - Giants
  - White Sox
  
- Of the teams that spent less on salaries in 2011, which of them improved their win-loss records from the previous year?
  - Diamondbacks
  - Indians
  - Royals
  - Tigers
  - Red Sox
  - Yankees
  
- Which teams spent less money in 2011, won fewer games than they did in 2010, but still had winning records overall?
  - Rays





15. With information from the entire league taken into account, re-consider the relationship between player salaries and a winning record. Do teams that pay their players higher salaries have an advantage over teams that cannot pay their players as much? *Students should continue to support their opinions with evidence.*

### **Conclusion**

To conclude this lesson, revisit the discussion question from the lesson. *A common perception is that teams like the Yankees and Red Sox win because they are able to spend more money to get better players to join their teams. Other teams don't have as much money to spend, and as a result don't win as often. Is this true?* Have students use this question as a prompt for a writing exercise in order to check for understanding.



## 2011 Table

| Team                   | 2011 Win-Loss Record | 2011 Average Team Salary |
|------------------------|----------------------|--------------------------|
| <b>National League</b> |                      |                          |
| Arizona Diamondbacks   |                      |                          |
| Atlanta Braves         |                      |                          |
| Chicago Cubs           |                      |                          |
| Cincinnati Reds        |                      |                          |
| Colorado Rockies       |                      |                          |
| Florida Marlins        |                      |                          |
| Houston Astros         |                      |                          |
| Los Angeles Dodgers    |                      |                          |
| Milwaukee Brewers      |                      |                          |
| New York Mets          |                      |                          |
| Philadelphia Phillies  |                      |                          |
| Pittsburgh Pirates     |                      |                          |
| St. Louis Cardinals    |                      |                          |
| San Diego Padres       |                      |                          |
| San Francisco Giants   |                      |                          |
|                        |                      |                          |
| <b>American League</b> |                      |                          |
| Anaheim Angels         |                      |                          |
| Baltimore Orioles      |                      |                          |
| Boston Red Sox         |                      |                          |
| Chicago White Sox      |                      |                          |
| Cleveland Indians      |                      |                          |
| Detroit Tigers         |                      |                          |
| Kansas City Royals     |                      |                          |
| Minnesota Twins        |                      |                          |
| New York Yankees       |                      |                          |
| Oakland Athletics      |                      |                          |
| Seattle Mariners       |                      |                          |
| Tampa Bay Rays         |                      |                          |
| Texas Rangers          |                      |                          |
| Toronto Blue Jays      |                      |                          |



## 2010 Table

| Team                   | 2010 Win-Loss Record | 2010 Average Team Salary |
|------------------------|----------------------|--------------------------|
| <b>National League</b> |                      |                          |
| Arizona Diamondbacks   |                      |                          |
| Atlanta Braves         |                      |                          |
| Chicago Cubs           |                      |                          |
| Cincinnati Reds        |                      |                          |
| Colorado Rockies       |                      |                          |
| Florida Marlins        |                      |                          |
| Houston Astros         |                      |                          |
| Los Angeles Dodgers    |                      |                          |
| Milwaukee Brewers      |                      |                          |
| New York Mets          |                      |                          |
| Philadelphia Phillies  |                      |                          |
| Pittsburgh Pirates     |                      |                          |
| St. Louis Cardinals    |                      |                          |
| San Diego Padres       |                      |                          |
| San Francisco Giants   |                      |                          |
|                        |                      |                          |
| <b>American League</b> |                      |                          |
| Anaheim Angels         |                      |                          |
| Baltimore Orioles      |                      |                          |
| Boston Red Sox         |                      |                          |
| Chicago White Sox      |                      |                          |
| Cleveland Indians      |                      |                          |
| Detroit Tigers         |                      |                          |
| Kansas City Royals     |                      |                          |
| Minnesota Twins        |                      |                          |
| New York Yankees       |                      |                          |
| Oakland Athletics      |                      |                          |
| Seattle Mariners       |                      |                          |
| Tampa Bay Rays         |                      |                          |
| Texas Rangers          |                      |                          |
| Toronto Blue Jays      |                      |                          |



## 2010 Average Team Salaries<sup>1</sup>

| TEAM                 | TOTAL PAYROLL | AVG SALARY   |
|----------------------|---------------|--------------|
| Pittsburgh Pirates   | \$ 34,943,000 | \$ 1,294,185 |
| San Diego Padres     | \$ 37,799,300 | \$ 1,453,819 |
| Oakland Athletics    | \$ 51,654,900 | \$ 1,666,287 |
| Texas Rangers        | \$ 55,250,544 | \$ 1,905,191 |
| Florida Marlins      | \$ 57,029,719 | \$ 2,112,211 |
| Arizona Diamondbacks | \$ 60,718,166 | \$ 2,335,314 |
| Cleveland Indians    | \$ 61,203,966 | \$ 2,110,481 |
| Washington Nationals | \$ 61,400,000 | \$ 2,046,666 |
| Toronto Blue Jays    | \$ 62,234,000 | \$ 2,074,466 |
| Kansas City Royals   | \$ 71,405,210 | \$ 2,644,637 |
| Cincinnati Reds      | \$ 71,761,542 | \$ 2,760,059 |
| Tampa Bay Rays       | \$ 71,923,471 | \$ 2,663,832 |
| Milwaukee Brewers    | \$ 81,108,278 | \$ 2,796,837 |
| Baltimore Orioles    | \$ 81,612,500 | \$ 3,138,942 |
| Colorado Rockies     | \$ 84,227,000 | \$ 2,904,379 |
| Atlanta Braves       | \$ 84,423,666 | \$ 3,126,802 |
| Seattle Mariners     | \$ 86,510,000 | \$ 3,089,642 |
| Houston Astros       | \$ 92,355,500 | \$ 3,298,410 |
| St. Louis Cardinals  | \$ 93,540,751 | \$ 3,741,630 |
| Los Angeles Dodgers  | \$ 95,358,016 | \$ 3,531,778 |

<sup>1</sup> <http://www.cbssports.com/mlb/salaries/teams>

| <b>TEAM</b>           | <b>TOTAL PAYROLL</b> | <b>AVG SALARY</b> |
|-----------------------|----------------------|-------------------|
| Minnesota Twins       | \$ 97,559,166        | \$ 3,484,255      |
| San Francisco Giants  | \$ 98,641,333        | \$ 3,522,904      |
| Los Angeles Angels    | \$ 104,963,866       | \$ 3,619,443      |
| Chicago White Sox     | \$ 105,530,000       | \$ 4,058,846      |
| Detroit Tigers        | \$ 122,864,928       | \$ 4,550,552      |
| New York Mets         | \$ 134,422,942       | \$ 4,800,819      |
| Philadelphia Phillies | \$ 141,928,379       | \$ 5,068,870      |
| Chicago Cubs          | \$ 146,609,000       | \$ 5,429,962      |
| Boston Red Sox        | \$ 162,447,333       | \$ 5,601,632      |
| New York Yankees      | \$ 206,333,389       | \$ 8,253,335      |



## 2011 Average Team Salaries<sup>2</sup>

| TEAM                 | TOTAL PAYROLL  | AVG SALARY   |
|----------------------|----------------|--------------|
| Kansas City Royals   | \$ 36,126,000  | \$ 1,338,000 |
| Tampa Bay Rays       | \$ 41,053,571  | \$ 1,578,983 |
| Pittsburgh Pirates   | \$ 45,047,000  | \$ 1,553,344 |
| San Diego Padres     | \$ 45,869,140  | \$ 1,479,649 |
| Cleveland Indians    | \$ 49,190,566  | \$ 1,639,685 |
| Arizona Diamondbacks | \$ 53,639,833  | \$ 1,986,660 |
| Miami Marlins        | \$ 56,944,000  | \$ 2,190,153 |
| Toronto Blue Jays    | \$ 62,567,800  | \$ 2,018,316 |
| Washington Nationals | \$ 63,856,928  | \$ 2,201,963 |
| Oakland Athletics    | \$ 66,536,500  | \$ 2,376,303 |
| Houston Astros       | \$ 70,694,000  | \$ 2,437,724 |
| Cincinnati Reds      | \$ 75,947,134  | \$ 2,531,571 |
| Baltimore Orioles    | \$ 85,304,038  | \$ 3,280,924 |
| Milwaukee Brewers    | \$ 85,497,333  | \$ 2,849,911 |
| Seattle Mariners     | \$ 86,524,600  | \$ 2,884,153 |
| Atlanta Braves       | \$ 87,002,692  | \$ 3,346,257 |
| Colorado Rockies     | \$ 88,148,071  | \$ 3,390,310 |
| Texas Rangers        | \$ 92,299,264  | \$ 3,182,733 |
| Los Angeles Dodgers  | \$ 104,188,999 | \$ 3,472,966 |

<sup>2</sup> <http://www.cbssports.com/mlb/salaries/teams>

| <b>TEAM</b>           | <b>TOTAL PAYROLL</b> | <b>AVG SALARY</b> |
|-----------------------|----------------------|-------------------|
| St. Louis Cardinals   | \$ 105,433,572       | \$ 3,904,947      |
| Detroit Tigers        | \$ 105,700,231       | \$ 3,914,823      |
| Minnesota Twins       | \$ 112,737,000       | \$ 4,509,480      |
| San Francisco Giants  | \$ 118,198,333       | \$ 4,377,716      |
| New York Mets         | \$ 118,847,309       | \$ 4,401,752      |
| Chicago Cubs          | \$ 125,047,329       | \$ 5,001,893      |
| Chicago White Sox     | \$ 127,789,000       | \$ 4,732,925      |
| Los Angeles Angels    | \$ 138,543,166       | \$ 4,469,134      |
| Boston Red Sox        | \$ 161,762,475       | \$ 5,991,202      |
| Philadelphia Phillies | \$ 172,976,379       | \$ 5,765,879      |
| New York Yankees      | \$ 202,689,028       | \$ 6,756,300      |

## 2010 Final Standings<sup>3</sup>

| American League                  | Wins | Losses |
|----------------------------------|------|--------|
| Tampa Bay Rays                   | 96   | 66     |
| New York Yankees                 | 95   | 67     |
| Minnesota Twins                  | 94   | 68     |
| Texas Rangers                    | 90   | 72     |
| Boston Red Sox                   | 89   | 73     |
| Chicago White Sox                | 88   | 74     |
| Toronto Blue Jays                | 85   | 77     |
| Detroit Tigers                   | 81   | 81     |
| Oakland Athletics                | 81   | 81     |
| Los Angeles Angles of<br>Anaheim | 80   | 82     |
| Cleveland Indians                | 69   | 93     |
| Kansas City Royals               | 67   | 95     |
| Baltimore Orioles                | 66   | 96     |
| Seattle Mariners                 | 61   | 101    |
| National League                  | Wins | Losses |
| Philadelphia Phillies            | 97   | 65     |
| San Francisco Giants             | 92   | 70     |
| Cincinnati Reds                  | 91   | 71     |
| Atlanta Braves                   | 91   | 71     |
| San Diego Padres                 | 90   | 72     |
| St. Louis Cardinals              | 86   | 76     |
| Colorado Rockies                 | 83   | 79     |
| Florida Marlins                  | 80   | 82     |
| Los Angeles Dodgers              | 80   | 82     |
| New York Mets                    | 79   | 83     |
| Milwaukee Brewers                | 77   | 85     |
| Houston Astros                   | 76   | 86     |
| Chicago Cubs                     | 75   | 87     |
| Washington Nationals             | 69   | 93     |
| Arizona Diamondbacks             | 65   | 97     |
| Pittsburgh Pirates               | 57   | 105    |

<sup>3</sup> <http://mlb.mlb.com/mlb/standings/>



## 2011 Final Standings<sup>4</sup>

| American League               | Wins | Losses |
|-------------------------------|------|--------|
| New York Yankees              | 97   | 65     |
| Texas Rangers                 | 96   | 66     |
| Detroit Tigers                | 95   | 67     |
| Tampa Bay Rays                | 91   | 71     |
| Boston Red Sox                | 90   | 72     |
| Los Angeles Angels of Anaheim | 86   | 76     |
| Toronto Blue Jays             | 81   | 81     |
| Cleveland Indians             | 80   | 82     |
| Chicago White Sox             | 79   | 83     |
| Oakland Athletics             | 74   | 88     |
| Kansas City Royals            | 71   | 91     |
| Baltimore Orioles             | 69   | 93     |
| Seattle Mariners              | 67   | 95     |
| Minnesota Twins               | 63   | 99     |
| National League               | Wins | Losses |
| Philadelphia Phillies         | 102  | 60     |
| Milwaukee Brewers             | 96   | 66     |
| Arizona Diamondbacks          | 94   | 68     |
| St. Louis Cardinals           | 90   | 72     |
| Atlanta Braves                | 89   | 73     |
| San Francisco Giants          | 86   | 76     |
| Los Angeles Dodgers           | 82   | 79     |
| Washington Nationals          | 80   | 81     |
| Cincinnati Reds               | 79   | 83     |
| New York Mets                 | 77   | 85     |
| Colorado Rockies              | 73   | 89     |
| Florida Marlins               | 72   | 90     |
| Pittsburgh Pirates            | 72   | 90     |
| San Diego Padres              | 71   | 91     |
| Chicago Cubs                  | 71   | 91     |
| Houston Astros                | 56   | 106    |

<sup>4</sup> <http://mlb.mlb.com/mlb/standings/>