

## Physical Science

### Graphing “Money Ball”

Your job is to figure out whether the amount of money a baseball team spends on player salaries (its payroll) is related to how well it does in the league (its winning percentage), by graphing the data on the reverse side on a clean sheet of graph paper.

#### 1. Descriptive graph title

Example: The Relationship Between Grades and Hours Spent Sleeping

Your title: \_\_\_\_\_

#### 2. Descriptive axis titles

Example: Time or Speed. Usually, the thing you control (the “independent variable”) is on the horizontal axis, and the thing you’re interested in (the “dependent variable”) is on the vertical axis.

Your independent variable: \_\_\_\_\_

Your dependent variable: \_\_\_\_\_

#### 3. Good axis units

Example: Meters for a plot of distance run in a minute, or kilograms for body weight

Your units for the independent variable: \_\_\_\_\_

Your units for the dependent variable: \_\_\_\_\_

#### 4. Proper ranges of numbers on axes

Example: Largest data point is 3.2 seconds? Use divisions of 0.1 second up to a largest value of 3.5 seconds to fill the available space. Plan ahead—the number of divisions on your paper may not agree with the number of divisions you want to use.

	Independent (horizontal)	Dependent (vertical)
Maximum value	_____	_____
÷ number of grid lines	_____	_____
= divisions	_____	_____
Round up to something easy to plot (0.1, 0.5, 1, 2, 5, 10, etc.)	_____	_____

#### 5. Carefully plotted data

#### 6. Trend Line

TEAM	Win %
Boston	60.9%
Atlanta	59.7%
Oakland	59.1%
Pittsburgh	58.4%
St. Louis	58.4%
LA Dodgers	57.7%
Detroit	57.7%
Cincinnati	56.0%
Texas	54.7%
Tampa Bay	54.7%
Cleveland	54.4%
Washington	53.0%
Baltimore	53.0%
NY Yankees	52.7%
Kansas City	52.3%
Arizona	50.7%
LA Angels	48.3%
Philadelphia	46.3%
San Francisco	46.0%
San Diego	45.9%
Toronto	45.6%
Colorado	45.3%
NY Mets	45.0%
Seattle	44.3%
Milwaukee	43.9%
Minnesota	43.2%
Chicago Cubs	42.3%
Chicago Sox	38.9%
Miami	36.9%
Houston	34.2%

[http://espn.go.com/mlb/standings/\\_/group/9](http://espn.go.com/mlb/standings/_/group/9)  
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Team	Payroll
New York Yankees	\$228,835,490
Los Angeles Dodgers	\$216,597,577
Philadelphia Phillies	\$165,385,714
Boston Red Sox	\$150,655,500
Detroit Tigers	\$148,414,500
San Francisco Giants	\$140,264,334
Los Angeles Angels	\$127,896,250
Chicago White Sox	\$119,073,277
Toronto Blue Jays	\$117,527,800
St. Louis Cardinals	\$115,222,086
Texas Rangers	\$114,090,100
Washington Nationals	\$114,056,769
Cincinnati Reds	\$107,491,305
Chicago Cubs	\$104,304,676
Baltimore Orioles	\$90,993,333
Atlanta Braves	\$89,778,192
Arizona Diamondbacks	\$89,100,500
Milwaukee Brewers	\$82,976,944
Kansas City Royals	\$81,491,725
Pittsburgh Pirates	\$79,555,000
Cleveland Indians	\$77,772,800
Minnesota Twins	\$75,802,500
New York Mets	\$73,396,649
Seattle Mariners	\$72,031,143
Colorado Rockies	\$71,924,071
San Diego Padres	\$67,143,600
Oakland Athletics	\$60,664,500
Tampa Bay Rays	\$57,895,272
Miami Marlins	\$36,341,900
Houston Astros	\$22,062,600

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