

**2019 EDUCATION DAY**



**AUGUSTA  
GREENJACKETS**

**APRIL 17TH & APRIL 30TH 10:35AM AT SRP PARK**

# 2019 EDUCATION DAY TABLE OF CONTENTS

Thank you for participating in the 2019 Augusta GreenJackets Education Day! This packet is full of exercises designed for students to apply what they've learned in the classroom to real life situations such as baseball. Each lesson has been structured based on the Standards of Learning, however each problem was designed so teachers can add or decrease the difficulty based on how far along they are in their classes. Classes are not required to complete the packet, however the GreenJackets encourage doing so to get the full experience of our Education Day at SRP Park.

## **BASEBALL IN EDUCATION PROBLEMS AND EXERCISES**

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## **GRADE LEVEL K-2**

### **SOCIAL STUDIES- LOCATION OF TEAMS**

To better acquaint students with cities and states, students will research the cities and states where the Augusta GreenJackets play throughout the season. Students will use map skills to describe locations of places on a map, and compare features of his/her local community with that of other communities. Students would be advised to use a map of the United States with mileage scales, a variety of resources including internet sites, books, and other maps. Before the game or after the game, students should work in teams to research a city or state of one of the Augusta GreenJackets' opponents. At least one group of students should choose the team that the GreenJackets will face on the School Day they attend. Some areas of research could include:

- The capital of the state, population of the city and state
- The other professional sports teams from the same state
- Historical facts of interest

### **MATHEMATICS- PROBLEM SOLVING**

Students have the opportunity to play with variations of numbers as organized on a baseball stadium scoreboard. Students will use a variety of tactics to predict, estimate and compute using the scores earned by teams during a baseball game with the use of student-made scoreboard. The teacher should make a 2x9 matrix to represent a scoreboard, placing the opponent's team name and the GreenJackets name in front of the rows of nine. Include columns for runs, hits, and errors with a 2x12 matrix. Students can then predict the score for each team per inning and then compute their prediction for the final score. Use blank scoreboards to create all the ways that a team can score 15 runs in 9 innings, all the ways a team can go ahead of a team up by 5 in the 8th inning, or all the ways a team can score x number of runs in x number of innings. Compare the predictions made to the actual score of the game you attend. Students can analyze their predictions by team and by inning. How close were your predictions? Which inning came closest to the predicted score?

Questions to ask your students when compiling the scoreboard:

- 1) How many runs would the GreenJackets need to score in an inning to make the predicted total for that inning?
- 2) How many runs will the GreenJackets (or the opponent) need to score the remainder of the game to equal the total predicted score for that team?



## **ENGLISH- LISTENING AND SPEAKING: SKILLS, STRATEGIES, AND APPLICATIONS**

Before the game, teach the students the song “Take Me Out to the Ball Game.” (If you can find the book with same name use that to help). Have the students work in teams of 3 or 4 to composite new words to the song, celebrating or describing another part of the game or general baseball experience (the food, the pitcher, the stadium, the fans, etc.). To follow-up, have the groups share with the entire class. While at the game, listen to the sounds and music played throughout. Pay special attention when the “Take Me Out to the Ball Game” song is played and sing along. After the game, write songs that may be sung to the tune of “Take Me Out to the Ball Game” that are about other topics (for example, “Let Us Play Out at Recess,” “School Lunches Aren’t Tasty,” or “A Liquid is Not a Solid.”)

## **SCIENCE- USE YOUR SENSES**

The object of this lesson is to allow students the opportunity to observe the baseball game using all five senses (sight, smell, taste, touch, and hearing), as well as create and use categories to organize a set of objects, organisms and phenomena. Students will select instruments to make observations and organize observations of an event, object or organism. The student will describe what they observe using all five senses. Discuss how we take in information using all five senses and use that information to understand the world. Begin by creating a list of words that describes a day at school, classifying each one as data gained from looking, smelling, tasting, hearing, or touching. You may even have the children try this while blindfolded. Record the information. While at the GreenJackets game allow students to explore with their senses. For example during loud fan noise, use fingers to quickly plug and unplug ears to make the sound come and go. Try tasting the ballpark food while holding one’s nose plugged. Does it taste the same? Make a point to thoughtfully touch objects usually taken for granted: the seats, a ticket, a hot dog bun, the railings, cotton candy, etc. Have students play “The Alphabet Game,” attempting to identify each of the senses for every letter of the alphabet. Incorporate a game of “I Spy \_\_,” “I Smell \_\_,” “I Feel \_\_,” etc., and use adjectives and adverbs until other students are able to guess the particular sensation. After the game, have the students work in teams to make games, posters, books, or anything to showcase the sensory experiences of the baseball game. For instance, a “Smellers” team could choose to make smell boxes of game day smells (the leather mitt, the wood of the bat, the sweat of the players, etc). A “Touchers” team could choose to approximate some of the textures of game day with classroom items, and classify the items touched at the game as rough, smooth, cool, warm, soft, etc. On a poster chart. Also, make charts to say what they saw, tasted, heard, smelled, and touched. From the list the students may illustrate a page which can be combined to form a book.



## **GRADE LEVEL 3-5**

### **HISTORY– CIVICS AND GOVERNMENT**

Explain the consequences of violating laws, and identify the duties and selection process for local officials who make, apply, and enforce laws through governments. In addition, explain why people need government by considering what life would be like in the absence of government.

Discuss the umpire's role in a baseball game. Compare and contrast a job of an umpire with that of a police officer. In addition, compare the absence of government with the idea of an absence of umpires in a baseball game.

### **ECONOMICS- GOODS AND SERVICES**

Give examples of goods and services provided by local government.

Give examples of goods and services offered by a ballpark.

### **MATHEMATICS- PROBLEM SOLVING**

Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.

You are at a Augusta GreenJackets game with your Dad and two of your friends. The GreenJackets score 6 runs in the 7th inning and 3 more in the 8th inning. The opposing team scores 3 runs in the 3rd inning and 5 runs in the 5th inning. Which team is leading after the 7th inning? If no other runs are scored who wins the game?

### **MATHEMATICS- COMPUTATION**

Represent as multiplication any situation that involves using a repeated addition.

There are 28 players on the Augusta GreenJackets roster, and each player autographs 3 baseballs to give to charity. How many total autographed baseballs do the GreenJackets have available to donate to various charities?



## **ENGLISH– LISTENING AND SPEAKING: SKILLS, STRATEGIES, AND APPLICATIONS**

Organize ideas chronologically (in the order that they happened) or around major points of information.

Organize the events of your visit to Lake Olmstead Stadium with your class in chronological order, beginning when you arrive at school in the morning and ending when you leave school at the end of the day.

## **ENGLISH– READING COMPREHENSION**

Distinguish between cause and effect and between fact and opinion in informational text.

Using the local paper, select an article about a GreenJackets game and distinguish between the facts of the game and the opinions of the author, coaches, players, etc. Mentioned in the article.

## **COMPUTER TECHNOLOGY- BASIC OPERATIONS AND CONCEPTS**

Demonstrate knowledge of the nature and operation of technology systems.

Discuss the common uses of computers and technology in baseball, such as television and internet.

## **COMPUTER TECHNOLOGY– TECHNOLOGY RESEARCH TOOLS**

Use technology to locate, evaluate, and collect information from a variety of sources.

Have students access the San Francisco Giants website and collect information on 5 players. Have students access MLB.com and search for their players and see if the information matches what they found on the Giants website.



## **GRADE LEVEL 6-8**

### **SOCIAL STUDIES– HISTORY**

Analyze the cause-and-effect relationship, keeping in mind multiple-causation; including the importance of individuals, ideas, human interests, beliefs, and chance in history.

Baseball is considered America’s favorite pastime. Research Georgia’s historical events, times, beliefs and individuals that have played a major role in the game of baseball today. Provide specific examples.

### **MATHEMATICS– COMPUTATION**

Understand proportions and use them to solve problems.

Cristian Paulino was the leader in stolen bases (SB) and was caught stealing (CS) 5 times in 25 attempts. Use a proportion to show how many times you would be caught stealing in 56 attempts, in 130 attempts.

### **MATHEMATICS- MEASUREMENT**

Add, subtract, multiply and divide with money in decimal notation.

While at SRP Park with your mom and dad, you are going to purchase dinner. You purchase three Hamburger Meals for \$8.50 each. Your dad would like an Ice Cream Cone for \$3.50, your mom would like water for \$2.25, and she would also like to share a Cup of Dippin’ Dots with you for \$4.00. What is the total price of the bill? How much is each person’s total meal?

### **ENGLISH– WRITING**

Identify all parts of speech (verbs, nouns, pronouns, adjectives, adverbs, prepositions, conjunctions, and interjections) and types and structure of sentences.

Write a paragraph that describe your experience at SRP Park on Education Day. Exchange papers with a partner and label the parts of speech and types of structure in their sentences. In addition, offer suggestions as to how your partner can improve their sentences.



## **READING–CONTRAST POINTS OF VIEW:**

Such as first person, third person, limited and omniscient, and subjective and objective – in narrative text and explain how they affect the overall theme of the work.

After reading the poem Casey at the Bat (appendix A), discuss the point of view the writer has chosen to tell the story and how this point of view affects the impact of the poem on the reader. Discuss how the theme of the poem would be changed if told in the first person, from the perspective of Casey, the fans, the pitcher, or the umpire.

## **SCIENCE– KNOWLEDGE AND SKILLS**

The student will demonstrate injury prevention to promote personal and family health.

Discuss the safety steps taken by baseball players both before and during a game. Also discuss the safety precautions the fans experience while attending a game.

## **SCIENCE– SCIENTIFIC THINKING**

Estimate distance in travel times from maps and the actual size of objects from scale drawings.

Using a map of the United States, estimate the distance (in miles) from each of the South Atlantic League cities to the city of the teams Major League affiliate. Refer to Appendix B, for a list of SAL teams and their Major League affiliate. Which SAL teams are closest to and farthest away from their Major League affiliate?





# **HOME RUN DERBY CURRICULUM**

## **GRADES 5-7**

### **OBJECTIVE:**

To provide students with a hands-on mathematical experience comparing data from trial (experimental) results with actual (theoretical) data.

### **MATERIALS NEEDED: (PER STUDENT)**

- o Baseball Card: Student's player of choice (Examples: Michael Trout, Babe Ruth, Madison Bumgarner Prince Fielder, Bryce Harper)
- o 5 x 7 card stock for Fantasy Baseball Wheel Card
- o Player Analysis Chart
- o Calculator
- o Protractor
- o Compass
- o Transparent Spinner
- o Scratch paper
- o Colored pencils (optional)

### **MATERIALS NEEDED: (INSTRUCTOR – IN ADDITION TO THE ABOVE ITEMS)**

- o Baseball Formula Page (p. 12)
- o How to Fill Out a Player Analysis Chart (p. 13-14)
- o How to Make a Player Wheel (p.18)
- o Large chart paper & markers OR overhead & transparencies
- o Extra Player Analysis Charts (p. 15-17)

### **STEP I – COMPLETING THE PLAYER ANALYSIS CHART**

- o Distribute baseball cards to students, based on player of choice
- o Briefly review information on backs of cards
- o Lead students through the process of collecting the top row of data. Most stats can be taken directly from the card. Use the formulas from page 8 to complete PA, 1B, Other Outs, FO, and GO.
- o Direct students to record each statistic as a ratio (Statistic/PA). Complete accuracy check should equal 569/569.
- o Lead students through process for:
  - 1) Converting ratios to decimals (round to 4 places)
  - 2) Finding the Degrees - Multiply decimal equivalent by 360 and round to nearest whole number
  - 3) Percentage – Round decimal equivalent to two digits and move decimal two spaces to the right

\*\* DO 1B and 2B together – students to finish on their own. Have students complete accuracy checks
- o If done accurately as stated above, accuracy checks should yield the following results:

Ratio = 526/526, Decimal Equivalent = 1,  
Percentage = 100%, Degrees = 360. Ask students if they think the accuracy check will always yield these results. (ANSWER: No, because of rounding, results may be slightly different)



## **STEP 2 – GRAPHING THE PLAYER WHEEL**

- o Using the Player Wheel, fill in the Name, Position & Year: Fill in the first (stats) and last (degrees) rows of the chart at the bottom of the card. Have students follow your lead on their own blank Player Wheel Card.
- o Demonstrate how to graph the first two sectors (1B & 2B) of the wheel. Have students do these as well. Be sure to label each sector with the appropriate statistical abbreviation. Students should then finish graphing their own wheels
- o Students can shade in sectors of the wheel with colored pencils (optional)

## **STEP 3 – HOME RUN DERBY (50 SPINS)**

- o Students to work in pairs – will be conducting 50 random spins using the Player Wheel each created. Each spin must make at least 3 revolutions. Liners are “foul balls” and are to be spun over.
- o On their own: On a sheet of scratch paper have students record their prediction for the number of Home Runs they will generate in their 50 spins and total number they think will be generated by the whole group. Students should also include a short explanation (1-2 sentences) explaining the reasoning behind their predictions.
- o 50 spins – partners tally HR vs. Other Outcomes
- o Record individual results on overhead transparency or large chart paper
- o Total the results – have students compare their predictions with the experimental data. Was anyone right on??

## **STEP 4 – PROCESSING THE DATA/MAKING PROBABILITY CONNECTIONS**

- o Record total results as HR/PA (spins)
- o Have students convert this ratio to a decimal (4 places) and compare with the Decimal Equivalent on the Player Analysis Chart (.0685) – Are they close?
- o Have students multiply this decimal times 360 and round to the nearest whole number to find degrees. Again, compare to the chart.
- o Explain to students that with the more data generated (assuming random spins), the numbers from the experiment (experimental or empirical data) should come closer to the actual (theoretical)

**IF TIME ALLOWS, REPEAT THE EXPERIMENT – COMPARE THEN COMBINE THE SETS. WHAT ARE THE RESULTS?**

### **CLOSING**

- o Present student(s) with the most HR out of 50 spins a small prize.



# **BASEBALL CARD GLOSSARY**

**YR** - The year the player played for a given team.

**AVG** - This number represents the player's batting average. This average is the decimal equivalent of the ratio of hits to official at bats.

**AB** - This represents the number of official at bats the player had during the season. Official at bats do not include walks (BB), sacrifice hits (sacrifice bunts, sacrifice flies), or being hit by a pitch (HBP).

**NOTE:** In order to use a baseball card in Fantasy Baseball, the player must have at least 200 at bats in one season.

**H** - The number of hits a player got during the season. This number represents the sum total of singles, doubles, triples, and home runs the player accumulated during the season.

**2B** - The number of doubles or times the player reached second base safely due to a hit.

**3B** - The number of triples or times the player reached third base safely due to a hit.

**HR** - The number of home runs the player hit during the season.

**RBI** - The number of runs batted in that the player was credited with during the season. This means that other players scored runs due to the player's hitting performance.

**SB** - The number of stolen bases the player had during the season.

**SO** - The number of strikeouts the player had during the season.

**BB** - The number of bases on balls (walks) the player had during the season.

**R** - The number of runs scored by the player during the season.

**TEAM** - The team played for during the year.

**G** - The total number of games the player participated in during the year.



# BASEBALL CARD FORMULAS

THE FOLLOWING FORMULAS ARE  
NEEDED TO CREATE A FANTASY  
BASEBALL TEAM.

## BATTING AVERAGE (AVG.)

$$\frac{H}{AB} = . \_ \_ \_ \text{ (ROUND TO 3 DECIMAL PLACES)}$$

## PLATE APPEARANCES (PA)

$$AB + BB = \_ \_ \_ \_ \_$$

## ON-BASE PERCENTAGE (OB %)

$$\frac{(H+BB)}{PA} = . \_ \_ \_ \text{ (ROUND TO 3 DECIMAL PLACES)}$$

## HOME RUN RATIO (HR: PA)

$$\frac{HR}{PA} = \frac{I}{X} = I : \_ \_ \_ \text{ (ROUND TO NEAREST WHOLE NUMBER)}$$

## STRIKEOUT RATIO (SO: PA)

$$\frac{SO}{PA} = \frac{I}{X} = I : \_ \_ \_ \text{ (ROUND TO NEAREST WHOLE NUMBER)}$$

## TOTAL BASES (TB)

$$H + 2B + 2(3B) + 3(HR) = \_ \_ \_ \_ \_$$

## SLUGGING AVERAGE (SLG.)

$$\frac{TB}{AB} = . \_ \_ \_ \text{ (ROUND TO 3 DECIMAL PLACES)}$$

## SINGLES (1B) (USED ON PLAYER ANALYSIS CHART)

$$H - 2B - 3B - HR = \_ \_ \_ \_ \_$$

## OTHER OUTS (USED ON PLAYER ANALYSIS CHART)

$$AB - H - SO = \_ \_ \_ \_ \_$$

## FLY OUTS

(IF OTHER OUTS IS AN ODD NUMBER, INCREASE FO BY 1)

$$FO = \frac{\text{OTHER OUTS}}{2} = \_ \_ \_ \_ \_$$

## GROUND OUTS

(IF OTHER OUTS IS AN ODD NUMBER, JUST INCREASE GO BY 1)

$$GO = \frac{\text{OTHER OUTS}}{2} = \_ \_ \_ \_ \_$$

## BATTING AVERAGE (AVG.)

$$\frac{121}{400} = .3205 = .303$$

## PLATE APPEARANCES (PA)

$$400 + 51 = 451$$

## ON-BASE PERCENTAGE (OB%)

$$\frac{121 + 51}{451} = \frac{172}{451} = .3813 = .381$$

## HOME RUN RATIO (HR: PA)

$$\frac{10}{451} = \frac{1}{45} = 1 : 45$$

## STRIKEOUT RATIO (SO: PA)

$$\frac{58}{451} = \frac{1}{7.7} = 1 : 8$$

## TOTAL BASES (TB)

$$121 + 19 + 2(1) + 3(10) = 172$$

## SLUGGING AVERAGE (SLG.)

$$\frac{172}{400} = .4300 = .430$$

## SINGLES (1B) (USED ON PLAYER ANALYSIS CHART)

$$121 - 19 - 1 - 10 = 91$$

## OTHER OUTS (USED ON PLAYER ANALYSIS CHART)

$$400 - 121 - 58 = 221$$

## FLY OUTS

(IF OTHER OUTS IS AN ODD NUMBER, INCREASE FO BY 1)

$$FO = \frac{221}{2} = 111$$

## GROUND OUTS

(IF OTHER OUTS IS AN ODD NUMBER, JUST INCREASE GO BY 1)

$$GO = \frac{221}{2} = 111$$



# HOW TO FILL OUT A PLAYER ANALYSIS CHART

HERE ARE 7 STEPS TO WALK YOU THROUGH THE PROCESS OF COMPLETING A PLAYER ANALYSIS CHART. YOU WILL NEED TO USE THIS PROCESS FOR EACH OF YOUR PLAYERS.

## I. RECORD DATA DIRECTLY FROM THE BASEBALL CARD.

NAME SANDRO FABIAN												POSITION	RF	YEAR 2017	
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK			
	.370	101		22	4	15	39	97	293	144	147				

## 2. USE THE FORMULAS TO COMPLETE THE TOP ROW OF THE CHART.

PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK
526	495	129	104	10	11	4	31	73	293	144	147	

## 3. RECORD EACH RATIO AS A FRACTION.

PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK
526	495	129	104	10	11	4	31	73	293	144	147	
RATIO			104/526	10/526	11/526	4/526	31/526	73/526		144/526	147/526	

## 4. CONVERT EACH FRACTION (RATIO) TO ITS DECIMAL EQUIVALENT BY DIVIDING THE NUMERATOR BY THE DENOMINATOR. ROUND TO FOUR PLACES.

PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK
526	495	129	104	10	11	4	31	73	293	144	147	
RATIO			104/526	10/526	11/526	4/526	31/526	73/526		144/526	147/526	
DECIMAL EQUIVALENT			0.1977	0.0190	0.0209	0.0076	0.0589	0.1387		0.2737	0.2794	



**5. ROUND EACH DECIMAL TO TWO PLACES. RECORD THE PERCENTAGES FOR EACH STATISTIC.**

PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK
526	495	129	104	10	11	4	31	73	293	144	147	
<b>RATIO</b>			104/526	10/526	11/526	4/526	31/526	73/526		144/526	147/526	
<b>DECIMAL EQUIVALENT</b>			0.1977	0.0190	0.0209	0.0076	0.0589	0.1387		0.2737	0.2794	
<b>PERCENTAGE</b>			19%	2%	2%	1%	6%	13%		27%	28%	

**6. MULTIPLY EACH DECIMAL EQUIVALENT BY 360 (THE NUMBER OF DEGREES IN A CIRCLE). ROUND TO THE NEAREST WHOLE NUMBER. RECORD THIS AS THE NUMBER OF DEGREES FOR EACH STATISTIC.**

PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK
526	495	129	104	10	11	4	31	73	293	144	147	
<b>RATIO</b>			104/526	10/526	11/526	4/526	31/526	73/526		144/526	147/526	
<b>DECIMAL EQUIVALENT</b>			0.1977	0.0190	0.0209	0.0076	0.0589	0.1387		0.2737	0.2794	
<b>PERCENTAGE</b>			19%	2%	2%	1%	6%	13%		27%	28%	
<b>DEGREES</b>			71	7	8	3	22	47		99	101	

**7. CHECK FOR ACCURACY. MAKE SURE THAT YOUR DECIMALS ADD UP TO BE VERY CLOSE TO 1.000. YOUR PERCENTAGE TOTALS ARE BETWEEN 99 AND 101, AND THAT YOUR DEGREE TOTALS ARE BETWEEN 358 AND 362.**

PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK
526	495	129	104	10	11	4	31	73	293	144	147	
<b>RATIO</b>			104/526	10/526	11/526	4/526	31/526	73/526		144/526	147/526	526/526
<b>DECIMAL EQUIVALENT</b>			0.1977	0.0190	0.0209	0.0076	0.0589	0.1387		0.2737	0.2794	1.0000
<b>PERCENTAGE</b>			19%	2%	2%	1%	6%	13%		27%	28%	100%
<b>DEGREES</b>			71	7	8	3	22	47		99	101	360



# PLAYER ANALYSIS CHARTS

It's time to break down your players' statistics a bit further. On the next three pages, you will find eight blank Player Analysis Charts - one for each of your position players. Completing these charts will enable you to accurately construct circle graphs on the Player Wheel Cards your teacher will provide for you. Use the two pages entitled, "How to Fill Out a Player Analysis Chart", and follow the step-by-step instructions. You will also want to refer to the Baseball Formula Sheet to complete portions of your charts.



<u>NAME</u>			<u>POSITION</u>							<u>YEAR</u>		
<b>PA</b>	<b>AB</b>	<b>H</b>	<b>1B</b>	<b>2B</b>	<b>3B</b>	<b>HR</b>	<b>BB</b>	<b>SO</b>	<b>OTHER OUTS</b>	<b>FO</b>	<b>GO</b>	<b>ACCURACY CHECK</b>
<b>RATIO</b>												
<b>DECIMAL EQUIVALENT</b>												
<b>PERCENTAGE</b>												
<b>DEGREES</b>												

<u>NAME</u>			<u>POSITION</u>							<u>YEAR</u>		
<b>PA</b>	<b>AB</b>	<b>H</b>	<b>1B</b>	<b>2B</b>	<b>3B</b>	<b>HR</b>	<b>BB</b>	<b>SO</b>	<b>OTHER OUTS</b>	<b>FO</b>	<b>GO</b>	<b>ACCURACY CHECK</b>
<b>RATIO</b>												
<b>DECIMAL EQUIVALENT</b>												
<b>PERCENTAGE</b>												
<b>DEGREES</b>												



<u>NAME</u>			<u>POSITION</u>						<u>YEAR</u>				
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK	
RATIO													
DECIMAL EQUIVALENT													
PERCENTAGE													
DEGREES													

<u>NAME</u>			<u>POSITION</u>						<u>YEAR</u>				
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK	
RATIO													
DECIMAL EQUIVALENT													
PERCENTAGE													
DEGREES													

<u>NAME</u>			<u>POSITION</u>						<u>YEAR</u>				
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK	
RATIO													
DECIMAL EQUIVALENT													
PERCENTAGE													
DEGREES													





<u>NAME</u>												<u>POSITION</u>					<u>YEAR</u>				
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK									
RATIO																					
DECIMAL EQUIVALENT																					
PERCENTAGE																					
DEGREES																					

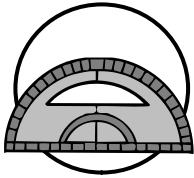
<u>NAME</u>												<u>POSITION</u>					<u>YEAR</u>				
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK									
RATIO																					
DECIMAL EQUIVALENT																					
PERCENTAGE																					
DEGREES																					

<u>NAME</u>												<u>POSITION</u>					<u>YEAR</u>				
PA	AB	H	IB	2B	3B	HR	BB	SO	OTHER OUTS	FO	GO	ACCURACY CHECK									
RATIO																					
DECIMAL EQUIVALENT																					
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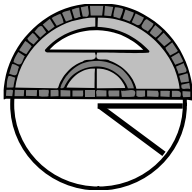


# PLAYER WHEEL INSTRUCTIONS

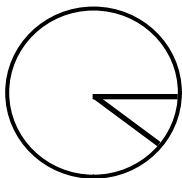
1. Transfer your Player Analysis Information onto a 5x7 card (the Player Wheel Card). You will need a ruler to draw the chart lines.
2. Write the player's name, position, and the chosen year on your Player Wheel Card.
3. Determine your preferred order of placement for each statistical category. Create a separate sector on the Player Wheel for each statistic using the following method.



**STEP 1:** Use your compass to draw a circle 3 1/2 " in diameter. Then take your protractor and measure the appropriate angle for the first statistical category. Mark off the angle.



**STEP 2:** Draw a radius connecting the center of the Player Wheel circle to your marked angle.



**STEP 3:** Label this section of your wheel with the correct abbreviation.

4. Continue to measure angles and record abbreviations until all statistics are on the wheel. You may want to add color to each section of the wheel.
5. Decorate the back of your Player Wheel with team logos, color, or any artwork you wish! Have fun and be creative.



# **COMPETITION IS THE MOTHER OF INVENTION**

**GRADES 5-7**

## **FOCUS:**

Children conceptualize an invention that would improve the performance of a particular player on a baseball team or an invention that would make the job of a stadium worker a little bit easier.

Students will be able to: Explain the operation of a simple mechanical device

## **OBJECTIVE:**

The children will be able to observe events and explain how to effect a change in that event for a specific purpose.

## **MATERIALS NEEDED: (PER STUDENT)**

- o Paper
- o Pencil

## **BEFORE THE GAME**

List the people who they will likely be able to observe at the ballgame. What are their roles and functions? Children choose which role they would like to analyze in order to invent them. Teams of children can decide to work for the pitcher, the batter, the fielder, the catcher, the ticket taker, the food vendor, the usher, the fan, and more.

## **BEYOND THE GAME**

Teams discuss the observations they made of their “client” at the ballgame. Choose one component of a person’s actions or an attribute of the tools they use or of the stadium/environment itself and invent a way to improve or simplify their performance. Their improvements might consist of a more efficient way of moving, an improvement on a tool, a new tool to use, an adjustment made to the working environment, or something the “client” might wear. Diagrams and descriptions of these inventions can be shared with the other teams of inventors and the best ones sent to the GreenJackets.

# **STADIUM CONSULTANTS CURRICULUM**

**GRADES: 6-8**

**SUBJECT: MATHEMATICS**

**OBJECTIVES:**

Students will analyze basic conditions for operating Major League Baseball stadiums, identify how different situations effect the economics of operation; compare the costs of tickets, the number of tickets sold, and other data to make evaluations for taking action in the future.

**CLASS TIME:**

Two or more 50-minute periods (one for generating and collecting present day data; the other for collecting and comparing past data)

**RESOURCE NEEDED:**

To complete this curriculum all procedures can be found on: <http://www.pbs.org/kenburns/baseball/teachers>

All lessons can be printed for free as a resource to teachers.  
Stadium Consultant Chart (provided on next page)  
Internet access to ESPN Sports:

<http://sports.espn.go.com/mlb/teams>

Extended activities:

<http://www.pbs.org/wgbh/buildingbig/dome/challenge/>

**BACKGROUND INFORMATION:**

The class becomes a business partnership of Stadium Consultants. Each student consultant has been called in to analyze the attendance and ticket prices of one Major League Baseball stadium, and will make recommendations as to how much (more or less) tickets will have to cost next year or if more or less money should be spent on player salaries or if there is enough money to build a dome over the stadium for rainy day play, and other creative options to present to the owners.



# **STADIUM CONSULTANTS CHART**

**NAME OF CONSULTANT** \_\_\_\_\_

**DATE OF CONSULTATION** \_\_\_\_\_

**NAMES OF STADIUM AND TEAM** \_\_\_\_\_

**MEDIAN TICKET COST** \_\_\_\_\_

**2017 ANNUAL ATTENDANCE** \_\_\_\_\_

**TOTAL 2017 ANNUAL TICKET INCOME** \_\_\_\_\_  
**(MEDIAN TICKET COST X 2017 ATTENDANCE)**

**TOTAL 2016 ANNUAL ATTENDANCE** \_\_\_\_\_

**TOTAL 2016 ANNUAL TICKET INCOME** \_\_\_\_\_  
**(MEDIAN TICKET COST X 2016 ATTENDANCE)**

**INCREASE OR DECREASE IN TICKET INCOME** \_\_\_\_\_  
**(TOTAL 2017 ANNUAL TICKET INCOME – TOTAL 2016 ANNUAL TICKET INCOME)**

**PROJECTED 2018 TICKETING AMOUNTS** \_\_\_\_\_  
**(INCREASE OR DECREASE IN TICKET INCOME / ANNUAL ATTENDANCE TO BE ADDED  
OR SUBTRACTED TO THE 2017 TICKETING AMOUNTS)**



# SHADOW BALL CURRICULUM

**GRADE: 6-8**

**OBJECTIVES:**

Students will learn basic terms and rules for playing baseball; identify how different players interact on offense and defense; analyze the times, distances, and speeds for running, throwing, and hitting; and actively play out the complex interactions of players in a simulated game.

**CLASS TIME:**

Two or more 50-minute periods (one for generating and collecting data; one for playing the game of Shadow Ball; one or more for each Extension activity)

**RESOURCES NEEDED:**

- <http://www.pbs.org/kenburns/baseball/teachers>  
Teachers need to download the procedures from this site
- Running, Throwing, and Hitting Charts (provided on the next 2 pages)
- Dice or a Spinner

**BACKGROUND INFORMATION:**

Shadow Ball is pantomiming the game of baseball – going through well-timed and believable motions that give the illusion of actually playing a game.

**CHART: RUNNING TIMES**

Time to Run from Home Plate to First Base \_\_\_\_\_  
Time to Run from Home Plate to Second Base \_\_\_\_\_  
Time to Run from Home Plate to Third Base \_\_\_\_\_  
Time to Run from Home Plate to Home Plate \_\_\_\_\_  
Time to Run from First Base to Second Base \_\_\_\_\_  
Time to Run from First Base to Third Base \_\_\_\_\_  
Time to Run from First Base to Home Plate \_\_\_\_\_  
Time to Run from Second Base to Third Base \_\_\_\_\_  
Time to Run from Second Base to Home Plate \_\_\_\_\_  
Time to Run from Third Base to Home Plate \_\_\_\_\_



### **CHART: HITTING TIMES**

Time until a Bunt stops rolling \_\_\_\_\_  
Time until a Ground Ball gets to the Infielders \_\_\_\_\_  
Time until a Ground Ball gets to the Outfielders \_\_\_\_\_  
Time until a Line Drive Ball gets to the Infielders \_\_\_\_\_  
Time until a Line Drive Ball gets to the Outfielders \_\_\_\_\_  
Time until a Pop Fly Ball gets to the Infielders \_\_\_\_\_  
Time until a Pop Fly Ball gets to the Outfielders \_\_\_\_\_

### **CHART: THROWING TIMES**

Time to Throw from Home Plate to First Base \_\_\_\_\_  
Time to Throw from Home Plate to Second Base \_\_\_\_\_  
Time to Throw from Home Plate to Third Base \_\_\_\_\_  
Time to Throw from Home Plate to the Pitcher \_\_\_\_\_  
Time to Throw from First Base to First Base \_\_\_\_\_  
Time to Throw from First Base to Second Base \_\_\_\_\_  
Time to Throw from First Base to Third Base \_\_\_\_\_  
Time to Throw from First Base to the Pitcher \_\_\_\_\_  
Time to Throw from Second Base to First Base \_\_\_\_\_  
Time to Throw from Second Base to Second Base \_\_\_\_\_  
Time to Throw from Second Base to Third Base \_\_\_\_\_  
Time to Throw from Second Base to the Pitcher \_\_\_\_\_  
Time to Throw from Third Base to First Base \_\_\_\_\_  
Time to Throw from Third Base to Second Base \_\_\_\_\_  
Time to Throw from Third Base to Third Base \_\_\_\_\_  
Time to Throw from Third Base to the Pitcher \_\_\_\_\_  
Time to Throw from Left Field to First Base \_\_\_\_\_  
Time to Throw from Left Field to Second Base \_\_\_\_\_  
Time to Throw from Left Field to Third Base \_\_\_\_\_  
Time to Throw from Left Field to the Pitcher \_\_\_\_\_  
Time to Throw from Left Field to Home Plate \_\_\_\_\_  
Time to Throw from Left Field to the Cutoff \_\_\_\_\_  
Time to Throw from Center Field to First Base \_\_\_\_\_  
Time to Throw from Center Field to Second Base \_\_\_\_\_  
Time to Throw from Center Field to Third Base \_\_\_\_\_  
Time to Throw from Center Field to the Pitcher \_\_\_\_\_  
Time to Throw from Center Field to Home Plate \_\_\_\_\_  
Time to Throw from Center Field to the Cutoff \_\_\_\_\_  
Time to Throw from Right Field to First Base \_\_\_\_\_  
Time to Throw from Right Field to Second Base \_\_\_\_\_  
Time to Throw from Right Field to Third Base \_\_\_\_\_  
Time to Throw from Right Field to the Pitcher \_\_\_\_\_  
Time to Throw from Right Field to Home Plate \_\_\_\_\_  
Time to Throw from Right Field to the Cutoff \_\_\_\_\_



# **SPELLING WORDS**

## **GRADES 2-5**

**RECORD**

**SAVE**

**ROSTER**

**ANTHEM**

**PITCH**

**MEMORIES**

**SLIDE**

**PASTIME**

**AVERAGE**

**RUN**

**CAREER**

**SEASON**

**SHUTOUT**

**PROSPECT**

**WIN**

**LOSE**

**STRIKE-OUT**

**POSITION**

**STEAL**

**OUTS**

**SWEEP**

**BALK**

**STRIKE**

**STATISTICS**

**FANS**

**MASCOT**

**INFIELDER**

**PHOTOGRAPHER**

**PLAYER**

**OPPONENT**

**PITCHER**

**BAT BOY**

**ALL-STAR**

**COACH**

**TRAINER**

**VISITORS**

**OUTFIELDER**

**BATTER**

**TEAM**

**CROWD**

**UMPIRE**

**ANNOUNCER**

**MANAGER**

**REPORTER**

**CATCHER**

**STARTER**

**LEAGUE**

**AMERICAN**

**NATIONAL**

**STADIUM**

**BASE**

**BUNT**

**BALL**

**WALK**

**SAFE**

**BALLPARK**

**TICKETS**

**CHAMPIONSHIP**

**WORLD SERIES**

**HOMERUN**

**TRIPLE**

**DOUBLE**

**SINGLE**

**HIGHLIGHTS**

**HISTORY**

**STREAK**

**BENCH**

**ATTENDANCE**

**VICTORY**

**GAME**





# **BERNOULLI'S PRINCIPLE CURRICULUM**

**GRADES: 4–8**

**SUBJECT: SCIENCE (PHYSICS)**

**OBJECTIVES:**

Students will observe physics in action through the sport of Baseball.

**CLASS TIME:**

Time taken, for the Bernoulli's Principle Curriculum, will be the teacher's discretion.

**RESOURCES NEEDED:**

2 Tennis or Ping-Pong Balls  
String (scissors)  
Masking Tape

**ALL MATERIAL FOR THIS ACTIVITY CAME FROM:**

<http://www.pbs.org>  
In the classroom Science of Sports: Better Baseball

**BACKGROUND INFORMATION:**

**QUESTION:**

Would knowing the science behind a sport help a person become a better athlete? Why or why not?

What makes a curve ball curve? The stitches on a ball actually make it curve. The pitcher's fingers hold the ball along a seam, so when the ball is thrown with a snapping motion, it has topspin. Friction provided by the stitches causes a thin layer of air to move around the spinning ball in such a way that air pressure on top of the ball is greater than on the bottom, causing the ball to curve downward – and the batter to miscalculate the position of the ball. The curve ball phenomenon occurs partly because of the relationship between the pressure of a fluid and its velocity. Does this principle sound familiar? It was determined by 18th-century Swiss Scientist and mathematician Daniel Bernoulli and is known as the Bernoulli principle.



According to this theory, the faster a fluid moves, the less pressure it exerts. Where do we usually see an application of Bernoulli's principle? (Flight aerodynamics)

**HOW DOES THE BERNOULLI PRINCIPLE APPLY TO BASEBALL?**

A spinning baseball has more air turbulence on top of the ball, producing slower air speed over the ball. Meanwhile, air moving under the ball accelerates and moves faster, producing less pressure on the bottom of the ball. The ball moves downward faster than would normally be expected.

**ACTIVITY:**

- 1. ATTACH ONE END OF A STRING TO A TENNIS OR PING-PONG BALL WITH THE MASKING TAPE.**
- 2. DO THE SAME TO THE OTHER STRING AND BALL.**
- 3. HANG THE BALLS FROM A HORIZONTAL BAR OR A DOWEL ROD. PLACE THE BALLS AT THE SAME LEVEL AND ABOUT 3 CM APART.**
- 4. PUT YOUR MOUTH BETWEEN THE TWO BALLS ABOUT 2 OR 3 INCHES FROM THEM.**
- 5. WHAT DO YOU THINK WILL HAPPEN TO THE BALLS WHEN YOU BLOW A STEADY STREAM OF AIR BETWEEN THEM?**
- 6. TRY IT!**
- 7. WHAT DID YOU OBSERVE?**
  
- 8. ATTEMPT TO EXPLAIN YOUR OBSERVATION.**



## HOW TO CALCULATE A PLAYER'S

# BATTING AVERAGE

GRADES 5-6

A player's Batting Average (AVG) represents the amount of hits that the player accumulates per appearance at the plate. To compute batting average, you divide the number of Base Hits (H) by the number of At Bats (AB). The equation is:

$$\frac{\text{(H)}}{\text{(AB)}} = \text{AVG}$$

**(AB) (ROUNDED TO 3 SPACES AFTER THE DECIMAL)**

### SAMPLE PROBLEM:

If a batter had 169 hits from 503 at bats in 2017, what was his batting average for the 2017 season?

$$\frac{169}{503} = \text{AVG} = .336$$

HITS = 169  
AT BATS = 503

HIS BATTING AVERAGE WAS .336



## **BATTING AVERAGE PROBLEMS**

**1. IF DUSTIN PEDROIA HAS 102 HITS IN 529 AT BATS, WHAT IS HIS BATTING AVERAGE WITH THE GREENJACKETS?**

**2. CHRISTIAN ARROYO, HAS 81 HITS IN 369 AT BATS. HIS TEAMMATE, BRYAN REYNOLDS, HAD 73 HITS IN 338 AT BATS. WHO HAD THE HIGHER BATTING AVERAGE AT THE END OF THE SEASON?**

**3. IF SKYLER EWING HAS A .247 BATTING AVERAGE IN 1759 AT BATS. HOW MANY HITS DOES HE HAVE?**

**4. IF SANDRO FABIAN PLAYED IN 93 GAMES AND HAD 65 HITS. WHAT WOULD HIS BATTING AVERAGE BE IF HE HAD 230 AT BATS?**



## HOW TO CALCULATE A PITCHER'S

# ERA

GRADES 6-7

A statistic known as ERA, short for Earned Run Average, is used to track a pitcher's performance throughout his career. It indicates how many batters a pitcher has allowed to score. So, the lower a pitcher's ERA, the fewer number of runs a pitcher has given up in innings pitched. To calculate ERA, you multiply the total number of Earned Runs (ER) and divide the result by total Innings Pitched (IP).

The equation is:

$$(\text{ER}) \times 9 = \text{ERA}$$

$$(\text{IP} \quad (\text{ROUNDED TO 2 SPACES AFTER THE DECIMAL}))$$

### **SAMPLE PROBLEM:**

A pitcher pitches a complete game (9 innings), and he gives up only one run. What is his ERA for this game:

$$(1 \times 9) / 9 = \text{ERA} = 1.00$$

**ER = 1**

**IP = COMPLETE GAME = 9**

**THE PITCHER'S ERA IS 1.00**



## **ERA PROBLEMS**

**1. MADISON BUMGARNER PITCHED 121.1 INNINGS, AND GAVE UP 33 EARNED RUNS. WHAT WAS HIS ERA FOR THE 2014 SEASON?**

**2. IF DAN SLANIA HAS AN ERA OF 4.17. IF HE GIVES UP 51 EARNED RUNS, HOW MANY INNINGS WILL HE NEED TO PITCH?**

**3. CORY TAYLOR HAD AN ERA OF 4.16. IF HE PITCHED 101.2 INNINGS, HOW MANY EARNED RUNS DID HE GIVE UP?**

**4. AS A STAFF IF THE GREENJACKETS STARTING PITCHERS ALLOWED 477 EARNED RUNS IN 1207.1 INNINGS, WHAT IS THE TEAM ERA?**



# HOW TO CALCULATE A BATTER'S SLUGGING PERCENTAGE

GRADES 7-8

A player's slugging percentage (SLG) can be found by dividing the Total number of Bases (TB) of all base hits by the total number of times At Bat (AB). The equation is:

$$\frac{\text{(TB)}}{\text{(AB)}} = \text{SLUGGING PERCENTAGE}$$

**=(ROUNDED TO 3 SPACES AFTER THE DECIMAL)**

Total number of bases (TB) is calculated by assigning the following numbers to each base hit:

**SINGLE = 1      DOUBLE = 2**  
**TRIPLE = 3     HOME RUN = 4**

## **SAMPLE PROBLEM:**

In 4 at bats, a batter hit a single and a double. What was his slugging percentage for the game?

$$\frac{\text{TB} = 1 \text{ SINGLE} + 1 \text{ DOUBLE} = 1 + 2 = 3}{\text{AB} = 4} = \text{SLG} = .750$$

**HIS SLUGGING PERCENTAGE WAS .750**



## **SLUGGING PERCENTAGE PROBLEMS**

**1. RYDER JONES FINISHES HIS SEASON WITH A SLUGGING PERCENTAGE OF .357, WITH 283 AT BATS. HOW MANY TOTAL BASES DID RYDER JONES HAVE?**

**2. IF ANTHONY MARKS HIT 37 SINGLES, 9 DOUBLES, 2 TRIPLES, AND 1 HOME RUNS IN 162 AT BATS, HOW MANY TOTAL BASES DID HE HAVE IN 2016?**

**3. IF ARAMIS GARCIA HIT 101 SINGLES, 16 DOUBLES, 3 TRIPLES, AND 2 HOME RUNS IN 276 AT BATS, WHAT WAS HIS SLUGGING PERCENTAGE?**

**4. IN 2015, HUNTER COLE HIT FOR 59 TOTAL BASES IN 205 AT BATS. IF, HE HITS FOR 152 TOTAL BASES IN 386 AT BATS IN 2016, WHICH YEAR DID HE HAVE A HIGHER SLUGGING PERCENTAGE?**





# HOW TO CALCULATE A PITCHER'S WIN/LOSS AVERAGE

GRADES 6-8

The win/loss average is computed by dividing the number of games won (W) by the total number of decisions (TD). The equation is:

$$\frac{(W)}{(TD)} = \text{WIN/LOSS AVERAGE}$$

**(ROUNDED TO 3 SPACES AFTER THE DECIMAL POINT)**

## **SAMPLE PROBLEM:**

A pitcher has 90 total decisions. Of these, he has 64 wins. What is his win/loss average?

$$W = 64$$

$$TD = 90$$

$$\frac{64}{90} = .711$$

**THE PITCHER'S WIN/LOSS AVERAGE IS .711**



## WIN/LOSS AVERAGE PROBLEMS

**1. IF CHASE JOHNSON WINS 4 GAMES OUT OF 11 TOTAL DECISIONS, WHAT WAS HIS WIN/LOSS AVERAGE?**

**2. IF MATT SOLTER WINS 6 GAMES AND ENDED WITH A WIN/LOSS AVERAGE OF .750, HOW MANY TOTAL DECISIONS DID MATT SOLTER RECEIVE AS A GREENJACKETS PLAYER IN 2017?**

**3. IN 2017, DOMENIC MAZZA WON 2 GAMES OUT OF 9 TOTAL DECISIONS. IF HE WON 5 GAMES OUT OF 11 TOTAL DECISIONS IN 2017, WHICH YEAR WILL HE HAVE A HIGHER WIN/LOSS AVERAGE?**

**4. SAM COONROD PITCHED IN 12 GAMES. OUT OF 6 DECISIONS, HE HAD 3 WINS. WHAT WAS HIS WIN/LOSS AVERAGE IN 2017?**



# SIZE/DIMENSIONS OF A BASEBALL FIELD

GRADES 6-8

## OBJECTIVE:

Although baseball is the same basic sport, regardless of whether it's played on a little league or a professional playing field, the size of the field may vary.

## MATERIALS NEEDED: (PER STUDENT)

- o Dimensions of SRP Park (field) and a regulation little league field
- o Rulers
- o Paper
- o Pencil
- o Protractors (optional)
- o Graph Paper

## PROCEDURE:

1. Instruct the students to compare the dimensions of the GreenJackets field with those of a regulation little league field (see diagrams 1& 2). Make bar graphs comparing:

- o The outfield distances
- o The distance from base to base
- o The distance from mound to home
- o The distance from home to the backstop
- o The distance from the pitcher's mound to the grass line of the infield
- o The distance from third base line to the coaches' box.
- o The Right Field, Center Field, and Left Field distances

Note: Little League outfield dimensions: Left Field 210 ft.; Center Field 210 ft.; Right Field 210 ft. SRP Park outfield dimensions: Left Field 330 ft.; Center Field 395 ft.; Right Field 318 ft.

2. Using their scale drawings, calculate the following:

	SRP PARK FIELD	LITTLE LEAGUE FIELD
Area of infield square feet		
Area of infield square inches		
Distance from pitchers' mound to home plate (in feet)		
Distance from pitchers' mound to home plate (in inches)		
Distance from base to base in feet		
Distance from base to base in inches		

3. How many square inches larger is SRP Park's field infield compared to the little league infield?

4. Find the perimeter of each infield. What is the difference in perimeter between the two fields?

5. If a runner is traveling at 10 ft/sec., how long will it take to get from home plate to first base? Determine for both the little league field and SRP Park

# SIZE/DIMENSIONS OF A BASEBALL FIELD

## GRADES 6-8

6. Now instruct the students to convert their measurements to the metric measurements. Explain to the students why it is important to understand both systems of measurement. This is important to know as baseball continues to expand into international markets.

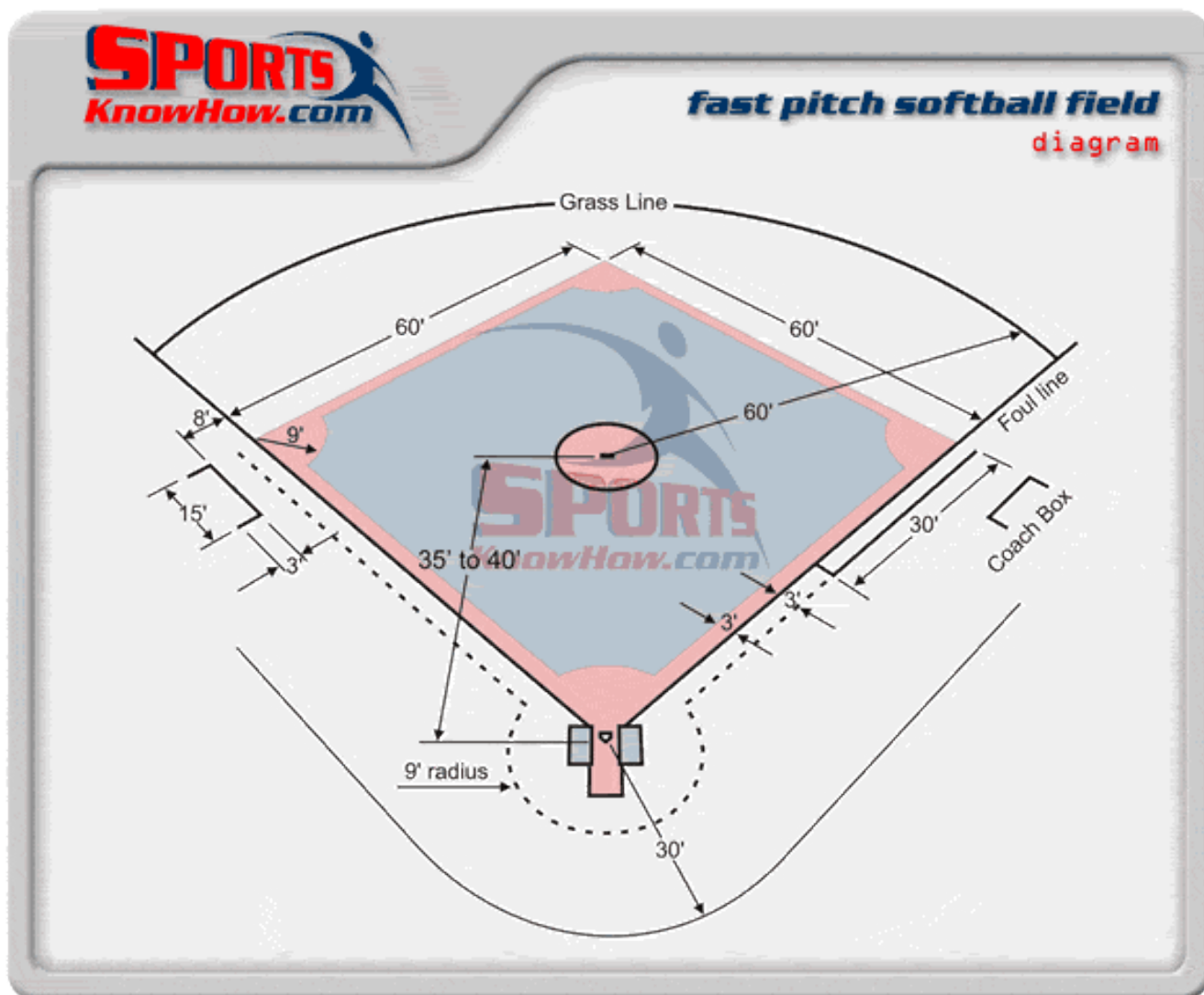
### 7. AT THE GAME:

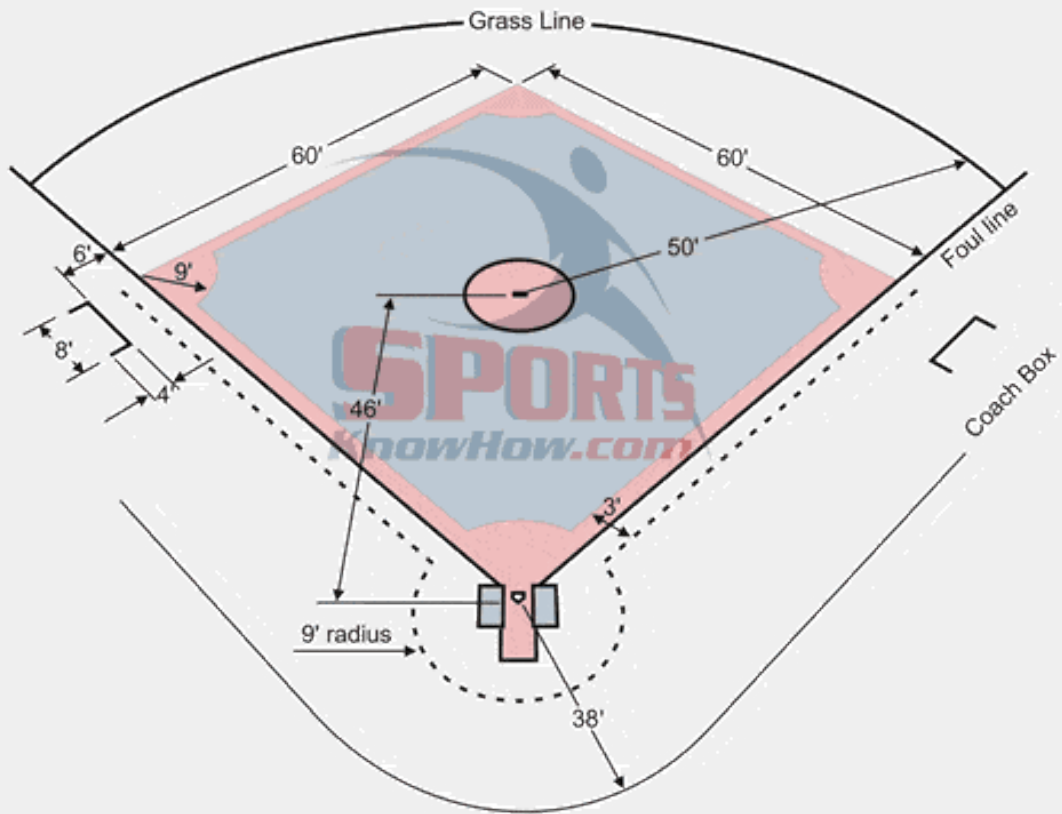
Use diagram 3 (blank baseball field) to plot where each GreenJackets player hit the ball in each inning. Estimate the distance the ball traveled by using the following scale: 1 inch. =20 ft. What is the total distance the ball traveled per inning?

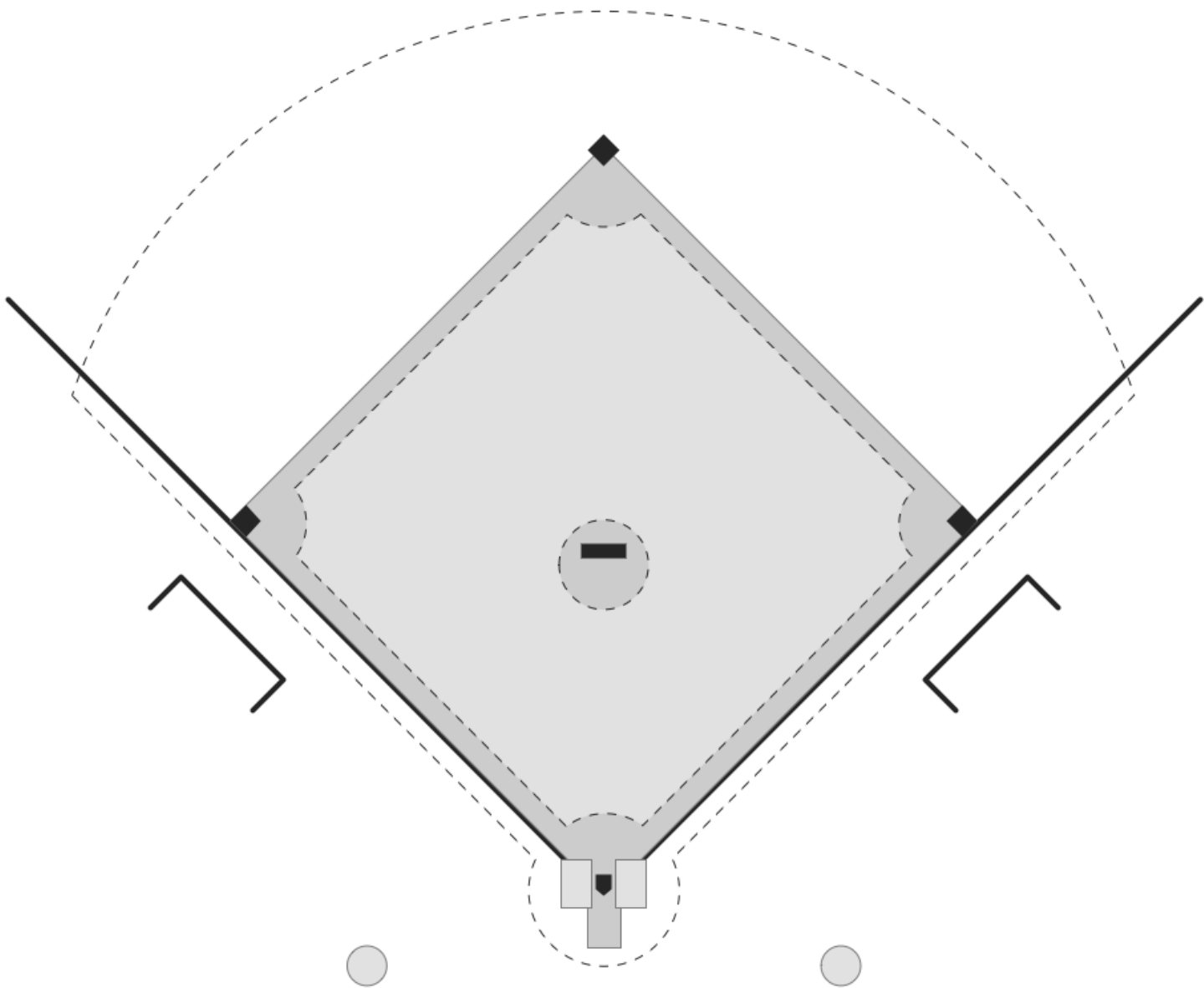
### 8. BEYOND THE GAME:

There is a plot of land near school where a baseball field could be constructed; if the perimeter of the available land is 400 ft. by 400 ft. would you be able to construct a little league field or a professional field the size of SRP Park's field? Draw the field with the correct dimensions.

Determine the area of a chalkboard eraser. How many chalkboard erasers would it take to cover SRP Park's field playing surface (just the infield, infield and outfield)?







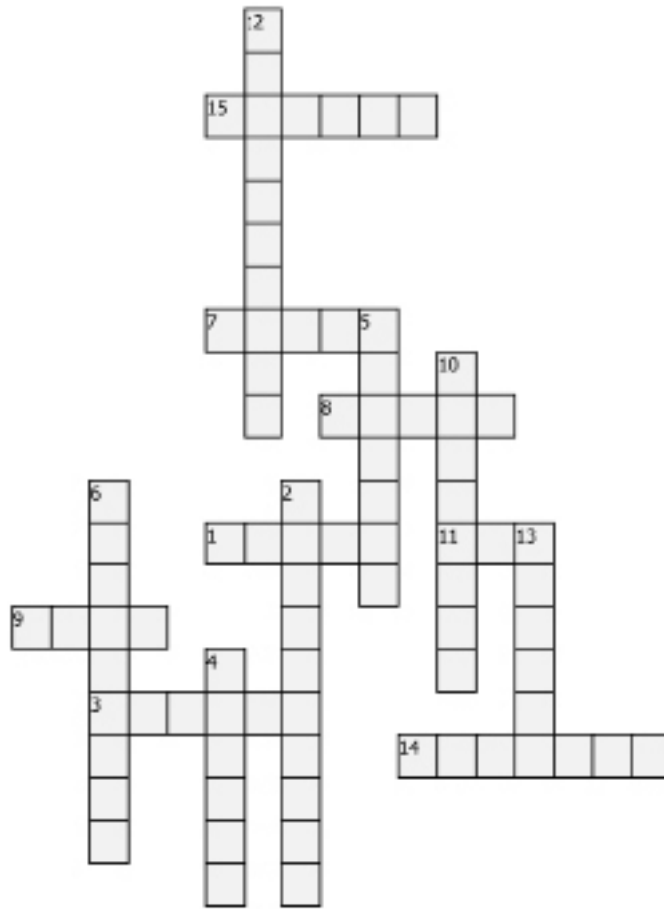
# **FUN FOR ALL!**

## **BASEBALL'S PAST WORD SCRAMBLE**

**DIRECTIONS: UNSCRAMBLE THE FOLLOWING JUMBLES TO FIND TEN FAMOUS PLAYERS.**

- 1) **DET LILIMSAW** \_\_\_\_\_
- 2) **NTAS SUAIML** \_\_\_\_\_
- 3) **YT BOBC** \_\_\_\_\_
- 4) **ELWILI AYMS** \_\_\_\_\_
- 5) **NOUSH GNAREW** \_\_\_\_\_
- 6) **OOKRSB BORISNNO** \_\_\_\_\_
- 7) **LCA PKIRIN RJ.** \_\_\_\_\_
- 8) **YSRTHCI EWTAHMONS** \_\_\_\_\_
- 9) **ZIOZE TSHMI** \_\_\_\_\_
- 10) **ENK EYFRFIG RJ.** \_\_\_\_\_





## BASEBALL TERMS AND PHASES

### **ACROSS:**

1. WHAT YOU CATCH THE BALL WITH
3. THE GUY THAT CALLS YOU OUT OR SAFE
7. GET 4 OF THESE AND YOU GET FIRST BASE FREE
8. WHEN A FIELDER BOBBLES THE BALL
9. WHEN YOU TRY TO HIT THE BALL WITHOUT SWINGING
11. WHAT YOU HIT THE BALL WITH
14. TOUCH 'EM ALL!
15. A HIT FOR TWO BASES

### **DOWN:**

2. IF YOU GET TWO OUTS IN ONE PLAY
4. A HIT FOR ONE BASE
5. GET 3 OF THESE AND YER OUT!
6. WHEN YOU PITCH IT 'UP AND IN'
10. WHEN THE PITCH IS NOT HIT IN FAIR TERRITORY
12. SWIPING SECOND GETS YOU ONE OF THESE
13. A HIT FOR THREE BASES





## **CASEY AT THE BAT** **BY ERNEST LAWRENCE THAYER**

The outlook wasn't brilliant for the Mudville nine that day;  
The score stood four to two, with but one inning more to play,  
And then when Cooney died at first, and Barrows did the same,  
A pall-like silence fell upon the patrons of the game.  
A straggling few got up to go in deep despair. The rest  
Clung to that hope which springs eternal in the human breast;  
They thought, "If only Casey could but get a whack at that –  
We'd put up even money now, with Casey at the bat."  
But Flynn preceded Casey, as did also Jimmy Blake,  
And the former was a hoodoo, while the latter was a cake;  
So upon that stricken multitude grim melancholy sat;  
For there seemed but little chance of Casey getting to the bat.  
But Flynn let drive a single, to the wonderment of all,  
And Blake, the much despised, tore the cover off the ball;  
And when the dust had lifted, and men saw what had occurred,  
There was Jimmy safe at second and Flynn a-hugging third.  
Then from five thousand throats and more there rose a lusty yell;  
It rumbled through the valley, it rattled in the dell;  
It pounded on the mountain and recoiled upon the flat,  
For Casey, mighty Casey, was advancing to the bat.  
There was ease in Casey's manner as he stepped into his place;  
There was pride in Casey's bearing and a smile lit Casey's face.  
And when, responding to the cheers, he lightly doffed his hat,  
No stranger in the crowd could doubt 'twas Casey at the bat.  
Ten thousand eyes were on him as he rubbed his hands with dirt.  
Five thousand tongues applauded when he wiped them on his shirt.  
Then while the writhing pitcher ground the ball into his hip,  
Defiance flashed in Casey's eye, a sneer curled Casey's lip.  
And now the leather-covered sphere came hurtling through the air,  
And Casey stood a-watching it in haughty grandeur there.  
Close by the sturdy batsman the ball unheeded sped –  
"That ain't my style," said Casey. "Strike one!" the umpire said.  
From the benches, black with people, there went up a muffled roar,  
Like the beating of the storm-waves on a stern and distant shore;  
"Kill him! Kill the umpire!" shouted some one on the stand;  
And it's likely they'd have killed him had not Casey raised his hand.  
With a smile of Christian charity great Casey's visage shone;  
He stilled the rising tumult; he bade the game go on;  
He signaled to the pitcher, and once more the dun sphere flew;  
But Casey still ignored it, and the umpire said, "Strike two!"  
"Fraud!" cried the maddened thousands, and echo answered, "Fraud!"  
But one scornful look from Casey and the audience was awed.  
They saw his face grow stern and cold, they saw his muscles strain,  
And they knew that Casey wouldn't let that ball go by again.  
The sneer has fled from Casey's lip, the teeth are clenched in hate;  
He pounds with cruel violence his bat upon the plate.  
And now the pitcher holds the ball, and now he lets it go,  
And now the air is shattered by the force of Casey's blow.  
Oh, somewhere in this favored land the sun is shining bright,  
The band is playing somewhere, and somewhere hearts are light,  
And somewhere men are laughing, and little children shout;  
But there is no joy in Mudville – mighty Casey has struck out.



# SOUTH ATLANTIC LEAGUE BASEBALL



## NORTHERN DIVISION

## SOUTHERN DIVISION



**DELMARVA SHOREBIRDS**  
(BALTIMORE ORIOLES)

**GREENSBORO GRASSHOPPERS**  
(PITTSBURGH PIRATES)

**ASHEVILLE TOURISTS**  
(COLORADO ROCKIES)

**AUGUSTA GREENJACKETS**  
(SAN FRANCISCO GIANTS)



**HAGERSTOWN SUNS**  
(WASHINGTON NATIONALS)

**HICKORY CRAWDADS**  
(TEXAS RANGERS)

**COLUMBIA FIREFLIES**  
(NEW YORK METS)

**CHARLESTON RIVERDOGS**  
(NEW YORK YANKEES)



**KANNAPOLIS INTIMIDATORS**  
(CHICAGO WHITE SOX)

**LAKEWOOD BLUECLAWS**  
(PHILADELPHIA PHILLIES)

**GREENVILLE DRIVE**  
(BOSTON RED SOX)

**LEXINGTON LEGENDS**  
(KANSAS CITY ROYALS)



**WEST VIRGINIA POWER**  
(SEATTLE MARINERS)

**ROME BRAVES**  
(ATLANTA BRAVES)

## APPENDIX B

### LARRY DOBY

Larry Doby (a native of Camden, SC) was an American professional baseball player in the Negro leagues and Major League Baseball. He was the second black player to break baseball's color barrier and the first black player in the American League. At age 17 he began his professional career with the Newark Eagles as the team's second baseman. Doby joined the U.S. Navy during World War II and after completing his Military service, returned to baseball in 1946 where he helped the Eagles with the Negro League World Series.

In July 1947 – three months after Jackie Robinson made history with the Brooklyn Dodger – Doby broke the Major League Baseball color barrier in the American League when he signed a contract to play with the Cleveland Indians. Doby was the first player to go directly to the majors from the Negro Leagues. Doby was a seven-time All-Star center fielder and was one of the first African-American players to win a world series when the Indians won the title in 1948. Doby also helped the Indians win a franchise-record 111 games and the American League pennant in 1954. He also finished second in the American League Most Valuable Player award voting and was the American League's RBI Leader and home run champion. He went on to play for the Chicago White Sox, Detroit Tigers and Chunichi Dragons before retiring as a player in 1962.

Doby later served as the second black manager in the Majors with the Chicago White Sox, and in 1995 was appointed to a position in the American League's executive office. He also served as a director with the New Jersey Nets (of the NBA).

He was selected to the National Baseball Hall of Fame in 1998 by the Hall's Veterans Committee. He became the first member born in South Carolina to be elected to the Hall. Although he was the first to play in Major League Baseball, Doby was the last member elected to the Hall of the four players to ever play in both a Negro League and Major League Baseball World Series.

And somewhere men are laughing, and little children shout;  
But there is no joy in Mudville – mighty Casey has struck out.

## APPENDIX C

# JACKIE ROBINSON

Jack Roosevelt Robinson was born in Cairo, Georgia in 1919 to a family of sharecroppers. His mother, Mallie Robinson, single-handedly raised Jackie and her four other children. They were the only black family on their block, and the prejudice they encountered only strengthened their bond. From this humble beginning would grow the first baseball player to break Major League Baseball's color barrier that segregated the sport for more than 50 years.

Growing up in a large, single-parent family, Jackie excelled early at all sports and learned to make his own way in life. At UCLA, Jackie became the first athlete to win varsity letters in four sports: baseball, basketball, football and track. In 1941, he was named to the All-American football team. Due to financial difficulties, he was forced to leave college and eventually decided to enlist in the U.S. Army. After two years in the army, he had progressed to second lieutenant. Jackie's army career was cut short when he was court-martialed in relation to his objections with incidents of racial discrimination. In the end, Jackie left the Army with an honorable discharge.

In 1945, Jackie played one season in the Negro Baseball League, traveling all over the Midwest with the Kansas City Monarchs. But greater challenges and achievements were in store for him. In 1947, Brooklyn Dodgers president Branch Rickey approached Jackie about joining the Brooklyn Dodgers. The Major Leagues had not had an African-American player since 1889, when baseball became segregated. When Jackie first donned a Brooklyn Dodger uniform, he pioneered the integration of professional athletics in America. By breaking the color barrier in baseball, the nation's preeminent sport, he courageously challenged the deeply rooted custom of racial segregation in both the North and the South.

At the end of Robinson's rookie season with the Brooklyn Dodgers, he had become National League Rookie of the Year with 12 homers, a league-leading 29 steals, and a .297 average. In 1949, he was selected as the NL's Most Valuable player of the Year and also won the batting title with a .342 average that same year. As a result of his great success, Jackie was eventually inducted into the Baseball Hall of Fame in 1962.

Jackie married Rachel Isum, a nursing student he met at UCLA, in 1946. As an African-American baseball player, Jackie was on display for the whole country to judge. Rachel and their three children, Jackie Jr., Sharon and David, provided Jackie with the emotional support and sense of purpose essential for bearing the pressure during the early years of baseball.

Jackie Robinson's life and legacy will be remembered as one of the most important in American history. In 1997, the world celebrated the 50th Anniversary of Jackie's breaking Major League Baseball's color barrier. In doing so, we honored the man who stood defiantly against those who would work against racial equality and acknowledged the profound influence of one man's life on the American culture. On the date of Robinson's historic debut, all Major League teams across the nation celebrated this milestone. Also that year, The United States Post Office honored Robinson by making him the subject of a commemorative postage stamp.