

Baseball Positions

Growing Mathletes

Baseball Positions Overview

Key Ideas in This Session: Youth learn the defensive and offensive positions on the field and calculate area of the field covered by each player. Youth also discuss the unique value and role of each player.

Driving Questions:

1. How can we calculate the amount of the field each position needs to cover to ensure a strong defense?
2. What different skills and abilities are important to the success of a baseball team?

Math Standards:

3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.

3.MD.6 Measure areas by counting unit squares (e.g., square cm, square m, square in, square ft, and improvised units).

4.MD.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.

7.G.B.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

Activity	Time	Description
Activity 1	35 minutes	Youth will list baseball player positions and work with a partner to place those players on a diagram of a baseball field. Youth will learn about each player's strengths and how they help the team, and reflect on the strengths that you bring to school, your family and sports.
Activity 2	25 minutes	Youth will identify the area on the field that each player covers and then determine which players have the most and least area to cover.

Materials

- Pencils, markers
- Sentence strips or paper strips (1-2 per youth)
- Stapler or masking tape for sentence strips
- Scotch tape or glue stick (1 per pair)
- Player position cards (copy and cut out ahead of lesson; 1 set of cards per pair)
- Field Map (copy ahead of lesson on 11x14 paper, 1 field map per pair)
- **Worksheet 1 and 2** (1 copy per youth)

Set-Up

Before the lesson, prepare all copies. Cut out player position cards on Worksheet 2. Place tape or glue sticks and pencils/markers at each small group table.

Growth Mindset Connection

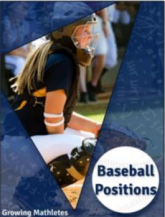
The value of collaboration. Everyone has unique strengths to contribute to the team.

Baseball Positions Introduction

Start the session by providing youth with an overview of the key activities.

Baseball Positions

Activity	Time	Description
Activity 1	35 minutes	Youth will list baseball player positions and work with a partner to place those players on a diagram of a baseball field. Youth will learn about each player's strengths and how they help the team, and reflect on the strengths that you bring to school, your family, and sports.
Activity 2	25 minutes	Youth will identify the area on the field that each player covers, and then determine which players have the most area to cover and which have the least.




Baseball Positions Youth Slides, Slide 1

Next, share and discuss this quote.

“The way a team plays as a whole determines its success. You may have the greatest bunch of individual stars in the world, but if they don't play together, the club won't be worth a dime.”
 – Babe Ruth

Baseball Positions



“The way a team plays as a whole determines its success. You may have the greatest bunch of individual stars in the world, but if they don't play together, the club won't be worth a dime.”
 – Babe Ruth

What does this quote mean to you?
 What message is Babe Ruth trying to send?

Activity 1

Baseball Positions Youth Slides, Slide 2

Activity 1 - Baseball Player Positions

(1 of 6)

Description: In this activity, youth list baseball player positions and work with a partner to place those players on a diagram of a baseball field. Youth learn about each player's strengths and how they help the team, and reflect on the strengths that you bring to school, your family and sports.

Background Information on Baseball Concepts:

Unlike most games, a running clock does not limit the length of a baseball game. The two competing teams play over a period of innings, which are subdivided into halves (e.g., top half and bottom half). Professional and college games are generally nine innings long.

During the first half of each inning, the visiting team bats and attempts to score points, called runs, while the home team players take their respective defensive positions on the field. The defense's goal is to get the offensive team's players "out" in a variety of ways. After three outs are recorded, the teams switch - the offensive team moves to defense, and the defensive team moves to offense. The batting team sends one player at a time to try and hit the ball.

TIP:

If you are able to play a game of wiffle ball before this lesson as an energizer it may help youth connect to the baseball player positions

The focus of the sport is on two players - the pitcher and the batter. The pitcher stands on a raised mound of dirt, called the pitcher's mound, which is 60 feet 6 inches from home plate in Major League Baseball. The batter stands on either side of the home base, called "the plate," holding a bat and facing the pitcher.

The pitcher sets the game in motion by throwing the ball past the batter into the catcher's glove or into play when the batter strikes the ball with the bat. When the ball is put in play, the defensive players, called fielders, try to catch it or throw out the batter so he cannot get on base and score a point (a run). The batter's goal is to put the ball in play so that the nine fielders cannot catch the ball or throw it to another fielder to record an out.

In this session, youth focus on learning the nine defensive player positions, and locating those players on the baseball field. Youth also discuss the strengths, skills and abilities of each player. The focus is not on the "order" or "rank" of the players, or deciding which player is "most" important. Discussions focus on how all players contribute to the team success.

LAUNCH Connection to Prior Knowledge:

Start out by asking youth to describe their experience with baseball:

- What do you know about the rules of baseball?
- What do you know about different baseball positions?
- Can you and a partner name 9 baseball player positions?

Activity 1 - Baseball Player Positions (2 of 6)

Video and Whole Group Discussion:

Show youth two short videos. Ask youth to watch and listen carefully to learn about different player positions. Ask youth to notice where each player is on the field.

VIDEO 1:
<https://www.youtube.com/watch?v=tOIXdXUnddE>
 (Stop at 25 seconds)

VIDEO 2:
<https://www.youtube.com/watch?v=zswJl4V7bmQ>
 (play from 6:32 - 6:46)


Following the video, ask youth to turn and talk to a partner about:

- different baseball field locations they noticed in the video
- different player positions they noticed in the video

After youth share what they noticed in the video, ask them to work with a partner to list as many baseball player positions as they can.

(Optional) For youth who are new to baseball, share Slide 5 (outfield location) and Slide 6 (infield location) to clarify the different baseball field locations.

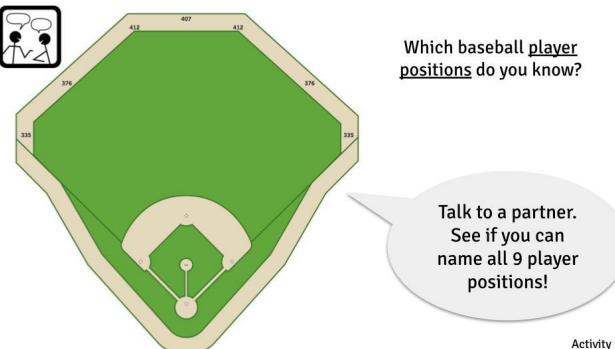
Watch and listen carefully to get clues about where the players are in the field. Take note of the size of the field.



Kurt Suzuki races around the bases for an inside-the-park home run *MLB Stadiums 2019 | Spectacular Aerial View (#27: Chase Field)*

Activity 1

Baseball Positions Youth Slides, Slide 3

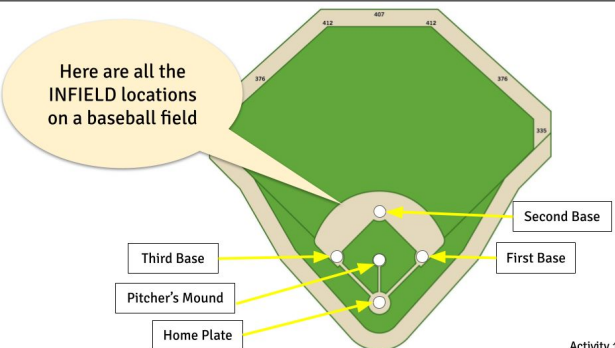


Which baseball player positions do you know?

Talk to a partner. See if you can name all 9 player positions!

Activity 1

Baseball Positions Youth Slides, Slide 4

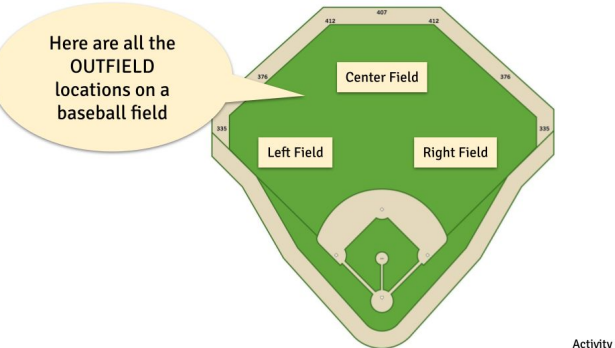


Here are all the **INFIELD** locations on a baseball field

Home Plate, Pitcher's Mound, First Base, Second Base, Third Base

Activity 1

Baseball Positions Youth Slides, Slide 5



Here are all the **OUTFIELD** locations on a baseball field

Left Field, Center Field, Right Field

Activity 1

Baseball Positions Youth Slides, Slide 6

Activity 1 - Baseball Player Positions (3 of 6)

Activity for Youth With LESS Experience With Baseball:

NOTE:

For simplicity, if needed, youth can write in the positions. Instead of using the **Player Position Cards** on Slide 14 that need to be cut out.

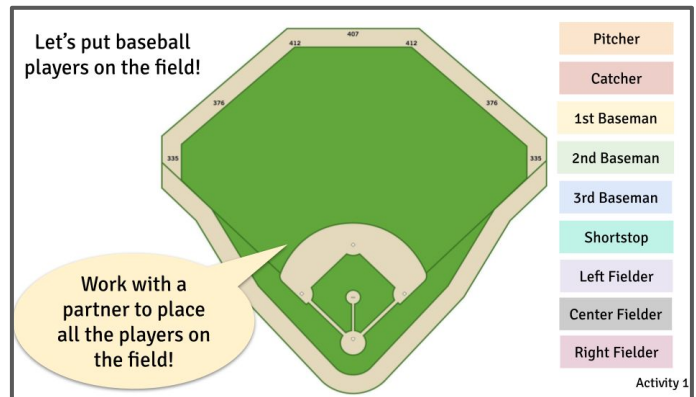
Distribute a **Baseball Field Map** and a set of **Player Position Cards** to each pair of youth.

In pairs: Ask youth to work in pairs to place the *player position* on the baseball field to show where each player is located.

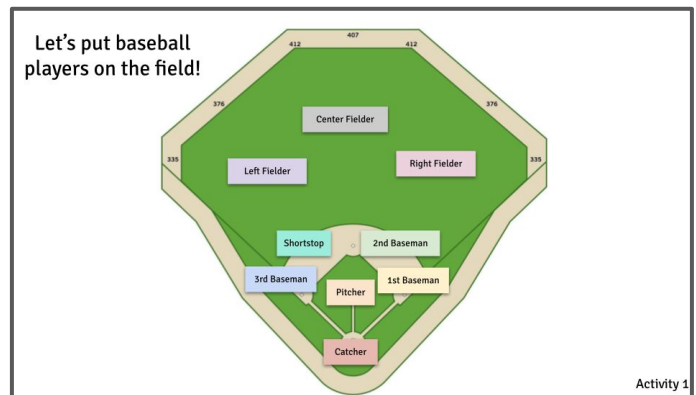
Whole group: Call on different youth to share player positions and where they are located on the field with the group.

As youth share, show player positions on a large version of the field map. During the discussion, youth can adjust their field maps.

At the end of the activity, all youth should have nine defensive positions labelled on the field.



Baseball Positions Youth Slides, Slide 7



Baseball Positions Youth Slides, Slide 8

Activity for Youth With MORE Experience With Baseball:

Place player position cards in a jar. Draw one card at a time and have youth share what they know about the position including:

- if they have played that position
- what skills and/or strengths that player needs

Activity 1 - Baseball Player Positions

(4 of 6)

Optional Activity: Player Positions Activity on a Baseball Field

Use this optional activity if you have access to an outdoor baseball field, or space to set up a scaled-down version of a baseball field inside. For a scaled down version, place the bases 30 feet apart.

Call out different player positions on the baseball field and have youth move to this area of the field. You can call out a couple of positions at a time, and indicate a subgroup of youth to run to each position. For example:

- If you have white shoes on, go to the center fielder's position. If you have black shoes on, go to the pitcher's position. Everyone else, go to third base.
- If your birthday is in January through May, go to the left fielder's position. If your birthday is in June, July, or August, go to the right fielder's position. Everyone else, go to the catcher's position.

Once youth reach their player position, ask them to share the skills that their player needs to be successful in baseball. Invite 1 or 2 youth from each group to share ideas with the whole group. If youth don't know each other, have them say their name, too!

Another option is to pass out player position cards to youth. (Make sure you have several copies of each player position so that each youth receives a card.) Next, ask all youth to go to their player position on the field. (There should be at least 2 youth at each position). Ask youth to discuss what they know about the position with their partner/small group, including what skills or strengths players need for that position.

Let's Practice the Positions

You will each receive a card that states the name of one baseball player position.

When we say "Go!", run to your player's position on the field.



Activity 1

Baseball Positions Youth Slides, Slide 9

Activity 1 - Baseball Player Positions (5 of 6)

Growth Mindset Connection:

Each player contributes skills and abilities that support the success of the team. Players that collaborate with one another and draw on each player's strengths make for a better team! While individuals bring different skills, all strengths are important and contribute to the success of the group.

Whole Group Discussion:

Ask youth to discuss the role of different players on a baseball team.

What strengths do different players have?
(What are they good at?)



Activity 1

Baseball Positions Youth Slides, Slide 10

Video and Discussion:

Play these two videos and discuss:

- What strengths do different players bring?
- What skills do different players have?

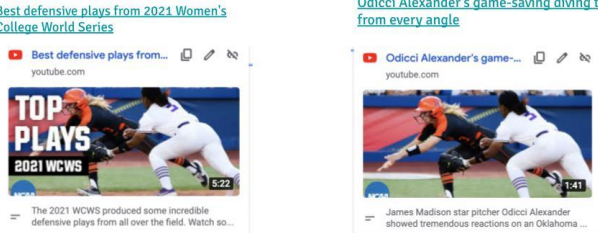
VIDEO: [Best defensive plays from 2021 Women's College World Series](#)

VIDEO: [Odicci Alexander's game-saving diving tag, from every angle](#)

OPTIONAL VIDEO: Learn more about the players' strengths
https://www.youtube.com/watch?v=Q2_jlvzW6I

NOTE: videos are also linked in Youth Slides 11 & 12

Watch the players in these videos...
What positions do they play? What are their strengths?



Activity 1

Baseball Positions Youth Slides, Slide 11

OPTIONAL VIDEO: Learn more about each player's strengths!
https://www.youtube.com/watch?v=Q2_jlvzW6I



Activity 1

Baseball Positions Youth Slides, Slide 12

Activity 1 - Baseball Player Positions (6 of 6)

Whole Group Activity: Making a Strengths Chain:

Ask youth to consider their own strengths, either in baseball, in other group/team activities, at school, or at home.

Ask youth to take several sentence strips (or strips of paper) and to record one strength that they bring to a group activity on each strip.

Ask youth to share their strengths out loud (in small groups or whole group). Link youth's strengths together into a chain to make a "strengths chain". Youth can first link their strengths together in small groups, and then connect their chain with chains from other groups.

The strength chain is a visible reminder that the strengths of all group members work together to benefit the group.

Discuss:

- What does each link in the chain represent?
- Do we need all the links in the chain?
- What happens if one of the links breaks?

Wrap up the activity with a reflective discussion.

- How do you use your strengths to contribute to a group activity (baseball or another group/team activity)?

CLOSURE Reflection:



Our Strengths!

- Think about YOUR strengths, in baseball, in another sport or activity, in school, or with friends.
- Take 2 or 3 strips of paper.
- Record 1 strength on each sentence strip.

I am very positive. I like to cheer on my teammates.

I am a good listener. I listen to my friends ideas.

I am very accurate when I throw the ball.

Activity 1

Baseball Positions Youth Slides, Slide 13

Our Strengths!

Connect all the strips at your table group to make a chain. Then connect your group's chain to another group's chain. Continue until you have 1 long chain!

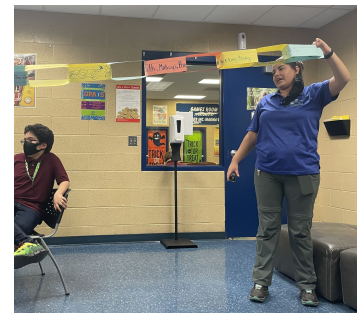
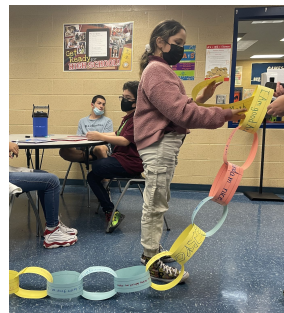
What does each link in our chain represent?

Do we need all the links in our chain?

What happens if one of the links on our chain breaks?

Activity 1

Baseball Positions Youth Slides, Slide 14



How do you use your strengths to contribute to a team or another group activity?

Activity 1

Baseball Positions Youth Slides, Slide 15

Activity 2 - Area of the Field (1 of 4)

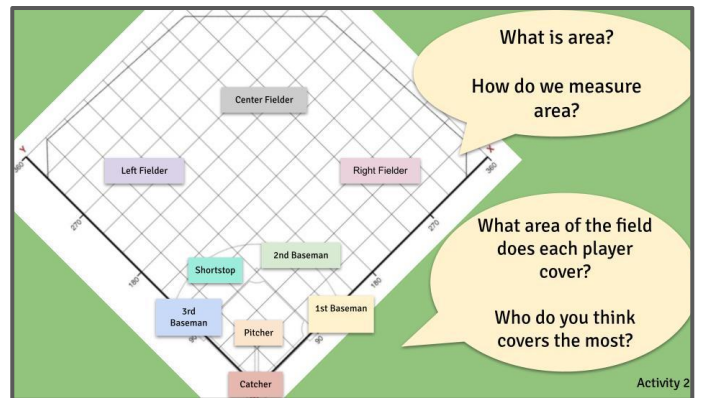
Description: Youth identify the area on the field that each player covers and then determine which players have the most area to cover, and which have the least.

Math Ideas: Area is the amount of space occupied by flat shape or surface. We can measure area using unit squares (squares of a uniform size). With rectangular shapes, we can also measure area by measuring the length and the width of the rectangle, and then multiplying the length by the width to find the area.

LAUNCH Connection to Prior Knowledge:

Ask youth to look at the baseball field image and to share what they know or notice about the area of field that each defensive player must cover.

- Which players have to cover large areas?
- Which players have smaller areas to cover?



Baseball Positions Youth Slides, Slide 16

Encourage youth to think about the area of the field that players cover in different sports. For example, show an image of a soccer field and ask youth to discuss what area of the field each soccer player covers.

Sharing Prior Knowledge About Measuring Area:

Next, ask youth to share what they know about measuring area.

- What does “area” mean?
- How can you measure area of a small space, like the area of a table? What tools might you use?
- How can you measure the area of a large space, like a field? What tools might you use?



Baseball Positions Youth Slides, Slide 17

Activity 2 - Area of the Field (2 of 4)

Partner Activity: Calculating the Area Defensive Players Cover on the Field

Youth will work in partners to estimate the area that each defensive player must cover on a baseball field.

On **Worksheet 1**, ask youth to use the shaded regions to count the number of squares on the field each defensive player must cover.

Strategies for Calculating Area:

Youth can count individual unit squares to find the area, or they can subdivide the area into rectangular areas, and use area formulas to calculate the number of unit squares.

On **Worksheet 2**, in the first column, youth record the area (number of unit squares) covered by each player.

Option for older youth: Youth can figure out how many square feet each player covers (each unit square on the baseball field diagram measures 30 feet by 30 feet, or 900 square feet) and record the area on **Worksheet 2**, in the second column.

Next, ask youth to compare how much area each player must cover.

- Which players cover the greater amount of area?
- Which players cover a smaller area on the field?

Baseball Positions Youth Slides, Slide 18

Worksheet 1

Player Position (nine defensive positions)	# of unit squares the player must cover on the field	# of square feet the player must cover (each unit square is 900 square feet)
Pitcher		
Catcher		
First Baseman		
Second Baseman		
Third Baseman		
Shortstop		
Left Fielder		
Center Fielder		
Right Fielder		

Worksheet 2

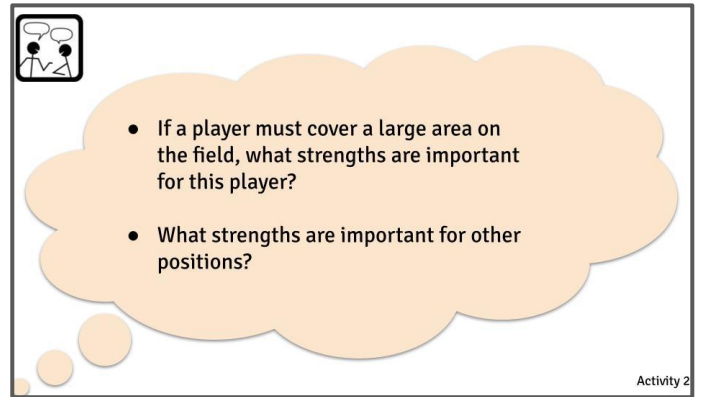
Activity 2 - Area of the Field (3 of 4)

When working with 6-8th graders, continue with the Extension section then return to the CLOSURE section below.

CLOSURE Reflection:

Wrap up the activity with a reflective discussion about the concepts in the activity and the driving questions for the lesson.

- If a player must cover a large area on the field, what strengths are important for that player?
- What strengths are important for other positions?



Baseball Positions Youth Slides, Slide 20

Activity 2 - Area of the Field (4 of 4)

Extension (For Grades 6-8) Activity: Calculating the Area of the Grass on the Baseball Field

Ask students to estimate the area of the grass at Chase Field (include outfield, infield, and foul area) in square feet.

One way to approximate this is with the formula for area of a circle - $A = \pi r^2$.

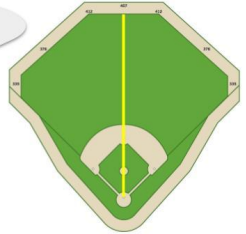
Students start with the area of a full circle (using the distance from home plate to the center field wall as an approximation of the radius). At Chase Field, this distance is 407 feet.

Next, students divide the area of the complete circle by 4 to find the area of the field. In this case, $r = 407$ (distance to center field wall) results in $A = 520,000/4 = 130,000$ sq. ft.

Grades 6-8 Extension

How can we estimate the area of the field at Chase Field?

The distance from home plate to the center field wall is 407 feet.



- Turn and talk to a partner.
- Brainstorm different ways to estimate the area of the grass field.
- How can you use what you know about finding the area of different shapes?

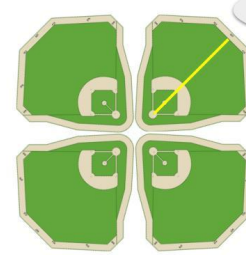
Activity 2

Baseball Positions Youth Slides, Slide 21

Grades 6-8 Extension

How can we estimate the area of the field at Chase Field?

The distance from home plate to the center field wall is 407 feet.



What if we placed 4 fields together...
What shape does this make?

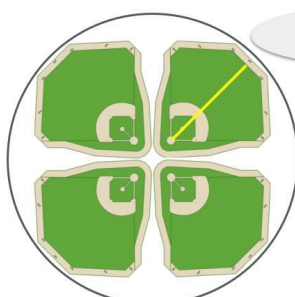
Activity 2

Baseball Positions Youth Slides, Slide 22

Grades 6-8 Extension

How can we estimate the area of the field at Chase Field?

The distance from home plate to the center field wall is 407 feet.



- What portion of the circle is one field?
- How can we find the area of the whole circle?
- If we know the area of the whole circle, how can we estimate the area of 1 field?

Activity 2

Baseball Positions Youth Slides, Slide 23

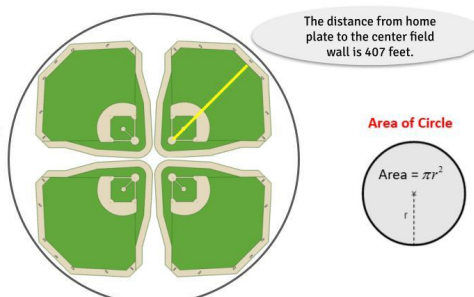
Grades 6-8 Extension

How can we estimate the area of the field at Chase Field?

The distance from home plate to the center field wall is 407 feet.

What is the radius of this circle?
How can we use the formula to find the area?

Area of Circle
 $Area = \pi r^2$



Activity 2

Baseball Positions Youth Slides, Slide 24

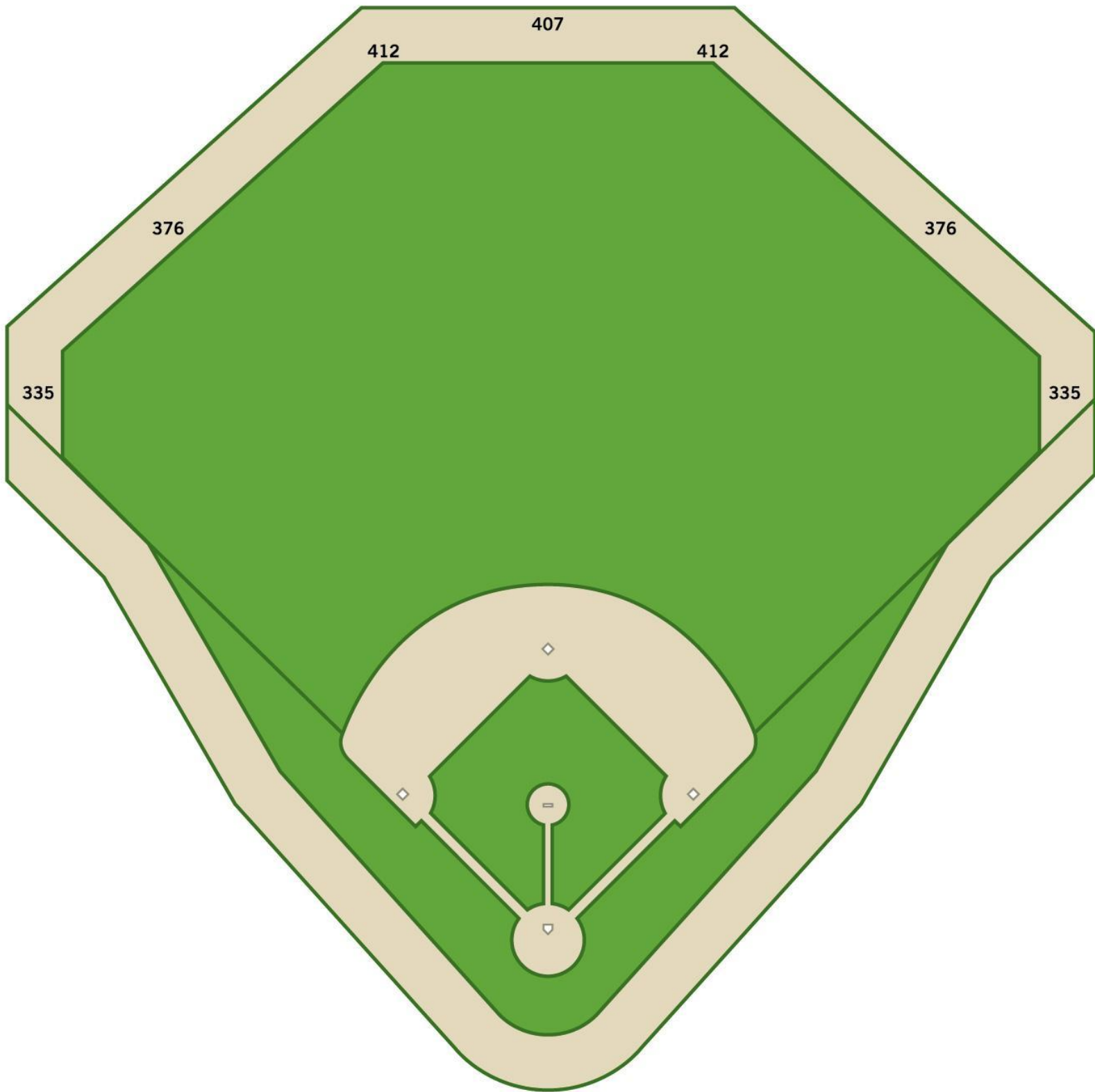
Return to the CLOSURE Reflection section on previous page.

Player Position Cards

Pitcher
Catcher
First Baseman
Second Baseman
Third Baseman
Shortstop
Left Fielder
Center Fielder
Right Fielder

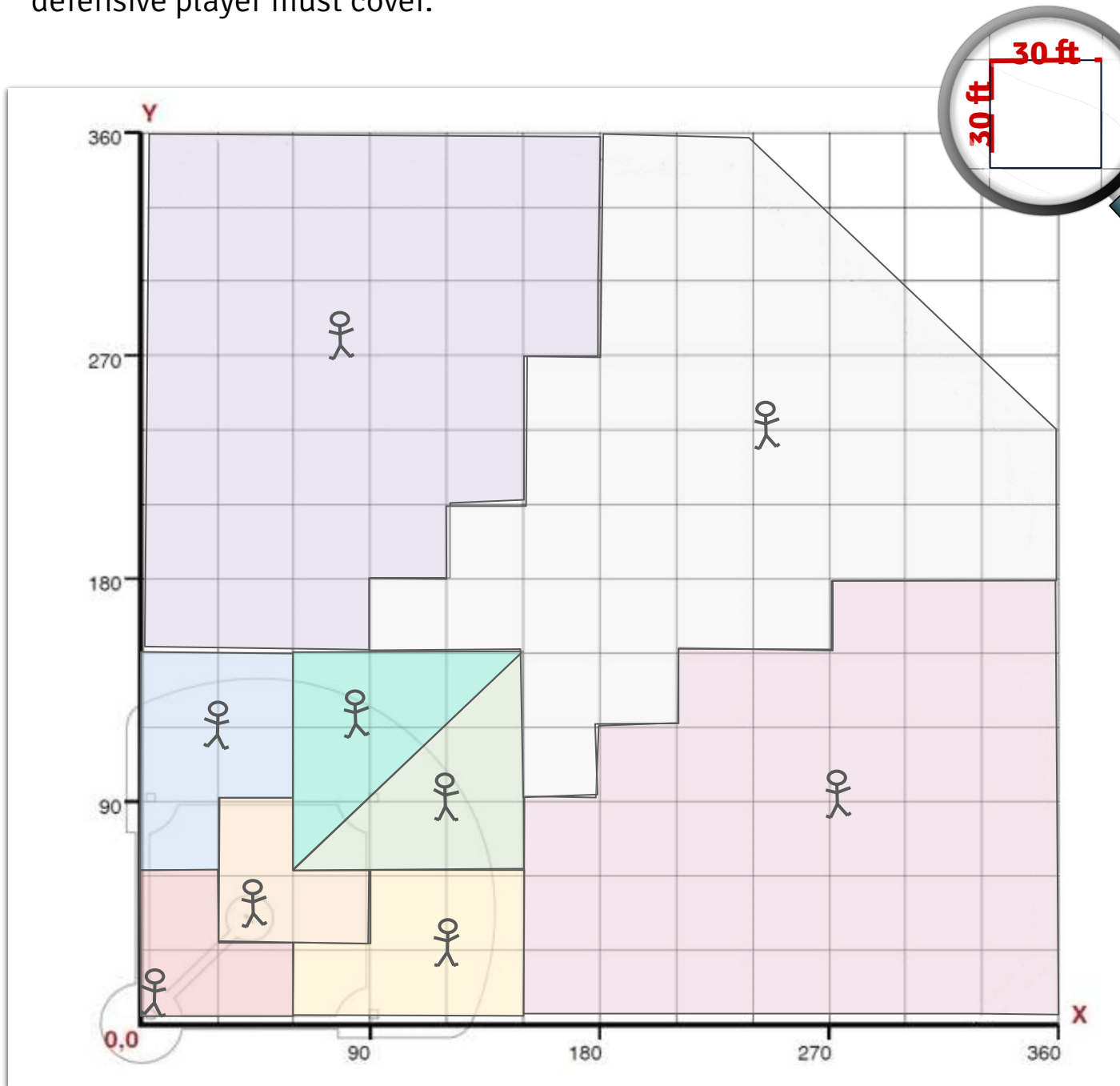
Pitcher
Catcher
First Baseman
Second Baseman
Third Baseman
Shortstop
Left Fielder
Center Fielder
Right Fielder

Baseball Field Map



Worksheet 1 - Player Field Area Coverage

Count the number of unit squares to determine the area of the field each defensive player must cover.



Key

Pitcher	Second Baseman	Left Fielder
Catcher	Third Baseman	Center Fielder
First Baseman	Short Stop	Right Fielder

Worksheet 2 - Player Field Area Coverage Table

Player Position (nine defensive positions)	# of unit squares the player must cover on the field	# of square feet the player must cover (each unit square is 900 square feet)
Pitcher		
Catcher		
First Baseman		
Second Baseman		
Third Baseman		
Shortstop		
Left Fielder		
Center Fielder		
Right Fielder		