

STRIKE ZONE

Description

Students learn about a baseball strike zone and how to measure their own strike zone.

Objectives

Level 1

- Students will define strike zone.
- Students will identify the shape of a strike zone.
- Students will measure the height and width of a strike zone.
- Students will identify the formula for calculating area.

Level 2

- Students will calculate their own strike zone using the formula for area of a rectangle.

Level 3

- Students will modify the rules of baseball to increase strikeouts.
- Students will justify their modifications.

Discussion Questions

1. How can a player change the size of their strike zone?
2. What is the difference in strike zone areas between tall people and short people?
3. What effects do genetics have on a baseball player's body dimensions?
4. How could baseball rules be changed to increase the number of strikeouts?

Assessment Questions

1. What geometric shape is your strike zone?
 - a. Answer: Rectangle
2. How does a player's height affect the shape of their strike zone?
 - a. Answer: Taller players have larger strike zones, shorter players have smaller strike zones.
3. What is the area of your strike zone?
 - a. Answer: multiply the distance between the batter's knees and chest by the width of home plate (17")

Key Concept

Area of a rectangle = Length × width

Materials (if applicable):

- Tape measure (5 ft.)
- Whiffle Balls
- Baseball
- Markers, crayons, etc
- Butcher paper or paper



STRIKE ZONE

Set Up

1. Watch the Strike Zone and How to Measure Your Strike Zone videos below:

<https://youtu.be/dpUKGFwMh0g>

<https://youtu.be/mAqyFS4HtEw>

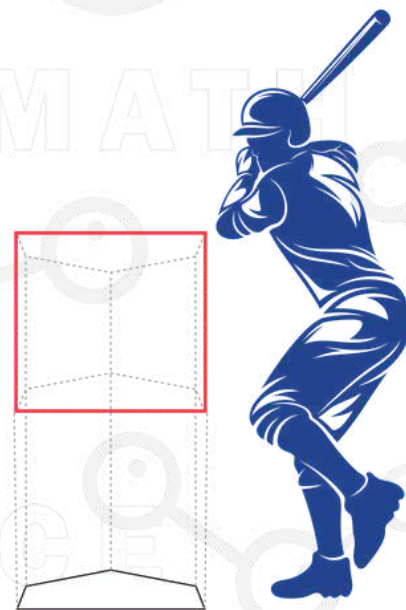
2. Refer to the strike zone diagram in [Strike Zone Worksheet](#). Give each group (approx. 4-6 students) a tape measure, markers, and butcher paper. Cut pieces of butcher paper so that students can draw their strike zone (butcher paper must be at least 17" wide). Student should be holding the whiffle bat and pretending to swing when their strike zone is measured.

Procedure

1. Watch the Strike Zone video below and explain the concept of a strike zone:

https://youtu.be/7W_nsvnjqVM

- The strike zone is the area over the plate above the hitter's knees, below the midpoint between the hitter's waist and shoulders.
 - The strike zone is an invisible rectangle of unique area for each player based on their height and batting stance.
2. Using the tape measure (100 ft.), determine the height of the strike zone, which is the distance between the batter's knees and their chest (specifically the midpoint between their shoulders and waist).
 - Note: The strike zone in professional baseball is slightly different than in Little League baseball. In pro baseball, the top of the strike zone is marked by the batter's chest while in Little League it is marked using the batter's armpits.
 - The width of the strike zone is based on the width of home plate (17 inches).
 3. Calculate the area of the strike zone using $\text{area} = \text{height} \times \text{width}$.
 - Draw the strike zone on butcher paper and label the height and width.
 - Ask each student to calculate their own strike zone.



Source: http://mlb.mlb.com/mlb/official_info/

Procedure for Athletic Activity

1. Go outside and throw at the strike zone.
2. Use worksheet to tally how many strikes you get.
3. Turn it into a fraction, decimal, percentage.