



## Strike Zone Teacher Instructions

**Description:** Students learn how to measure their strike zone.

**Objectives:**

Level	Objective (verb in <b>bold</b> )
1	Students will <b>define</b> strike zone. Students will <b>identify</b> the shape of a strike zone. Students will <b>measure</b> the height and width of a strike zone. Students will <b>identify</b> the formula for calculating area.
2	Students will <b>calculate</b> their own strike zone using the formula for area of a rectangle.
3	Students will <b>modify</b> the rules of baseball to increase strikeouts. Students will <b>justify</b> their modifications.

**Terminology:**

- Strike Zone: The area over home plate through which a pitched baseball must pass to be called a strike
- Square Units: The metric unit used to measure area.
- Decimal: Expressed by utilizing a decimal system especially with a decimal point.

**Standards:**

California Common Core Math Standards

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

3.MD.5a – A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.



3.MD.5b – A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

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

3.MD.7a – Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

3.MD.7b – Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

## Worksheet 2.1 Answers will vary

### Assessment Questions

1. What geometric shape is your strike zone?

Answer: Rectangle

2. How does a player's height affect the shape of their strike zone?

Answer: Taller players have larger strike zones, shorter players have smaller strike zones.

3. What is the formula to find the area of your strike zone?

Answer:  $\text{length} \times \text{width} = \text{area}$

(multiply the distance between the batter's knees and chest by the width of home plate (17"))