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| **Objectives:** BASIC & ACADEMIC SKILLS INSTRUCTIONAL COURSE | • Students will explain how geometry is applied to the batter/runner in baseball/softball. |
| **Focus:** | • STEMS—Applying Geometry to Baserunning |
| **Essential Question:** | • What does a baseball/softball strike zone look like on the field? |
| **Common Core Standards** | • 4.) Identify properties of motion, including change of position and change of speed (Grade K). |
| **Warm-Up**<br>(Before—Goal & Action)<br>Estimated Time (15 minutes) | **Action:**<br>• Instructor introduces words to know.<br>• Instructor explains the size of the diamond as measured and set at the age appropriate distance as per standardized usage in youth baseball. Instructor will review the concept of maximizing running velocity between two points by running in a straight line—the shortest distance between two points.<br>• Teacher will show a clip of a first base runner to demonstrate. |
| **Get Moving**<br>(During—Active Learning Goal & Action)<br>Estimated Time (30 minutes) | **Action:**<br>• After proper warm up, students form a line at home plate. In turn each hits a ball off a tee positioned at home plate and runs through 1st base, touching the base with either foot and then touching a second marker placed 1.5 meters in the foul line. Using a stop watch the instructor times the run from the instant that the bat touches the ball until the student's foot touches first base. Each student's time is recorded.<br>• Imagining a hit that goes between the outfielders, students in turn hit a ball off a tee and run to second base making a double. Students run through second base. Instructor records each time. If two stop watches are available, have one aide take the time to run from home plate to first base, on the way to second base. The runner might have made an arch in the run to get to second base faster but will have run longer to reach 1st base.<br>• Imagining a hit that goes between the outfielders, students in turn hit a ball off a tee and run to second base making a double. Students must run straight lines to each base. Students run through second base. Instructor records each time.<br>• Instructor demonstrates technique arching to runner's right and then touching first base with left foot while making turn toward second base. Students repeat exercise and times are recorded. Compare all three runs to second base.<br>o Straight line times will be slower to 2B than arched runs due to decrease in velocity needed to make the 90 degree turn to run a straight line to 2B. Although the shortest distance between two points is a straight line, when running bases sometimes you need to sacrifice distance to conserve speed and decrease overall time.<br>• Play a game with home plate and only first base and second base. Give each hitter one point per base achieved. Once runner stops, the play ends and runner returns to hitting line. All hits, grounders and fly balls are treated the same, as defense attempts to get batter/runner out. Give raffle tickets to members of winning team. |

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| **Cool-Down**<br>(After—Goal & Action)<br>Estimated Time (15 minutes) | **Action:**<br>• Students will write a summary of how geometry applies to base running. |

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