

Some Hitting Facts:

1. A hitter has a limited amount of time to react to the pitch
 - 90 mph = Approx. 0.45 sec.
 - 80 mph = Approx. 0.50 sec.
 - 70 mph = Approx. 0.55 sec.
 - 60 mph = Approx. 0.60 sec.
 - 50 mph = Approx. 0.65sec.
2. The average fastball crosses the plate at a 6 degree downward angle (pitched from a sloped pitchers mound)

Hitting Metrics the High School Program Uses:

- **Attack Angle:** Attack Angle is the angle of the bat's path, at impact, relative to horizontal. A positive value indicates swinging up, and a negative value indicates swinging down, where zero is perfectly level. The average fastball crosses the plate at a 6 degree downward angle. In order to hit a line drive, the hitter needs an Attack Angle between 6 – 14 degrees. The ideal Attack Angle for a high school hitter (and youth hitter) is 0 to 15 degrees.
- **Time to Contact:** Time to Contact is measured from the start of forward motion to the moment of impact. Time to Contact measures the total time it takes to complete your swing. A fastball takes approximately 0.4 to 0.65 seconds from pitcher to home plate (see hitting facts list above). In that time, you must recognize the pitch, decide whether to commit, and execute your swing. The quicker your Time to Contact, the more time you have to recognize and commit to good pitches. The ideal Time to Contact for a high school hitter is 0.14 to 0.18 seconds and for a youth player 0.17 to 0.23 seconds.

High Program “Hitting Cues”

“Feet” - When in the proper set up position the **“feet”** should be shoulder width apart and the player should be on the balls of their **“feet.”** Unless there is a justifiable reason, the players feet should be lined up with all 10 toes pointed towards home plate. We check this by using the cue **“feet.”**

*Deeper Understanding: In order for athletes to be successful they must be able to move quickly. Being on the balls of their **“feet”** makes this happen. As shown above hitters have a limited amount of time to react to the pitch - Being on the balls of their **“feet”** ensures their body is able to rotate as quickly as possible.*

“Fingers” - In the proper set up position a hitters top knuckles should be relatively lined up. We check that the hitters knuckles are lined up by using the cue **“fingers.”** Have the hitter grip the bat. Then have the hitter point his two index fingers - If his fingers are pointing to the sky it means his knuckles are lined up. This cue should ultimately remind the hitter that his hands should have a **loose grip** on the bat to ensure they are able to snap their wrists with maximum efficiency at contact.

*Deeper Understanding: In order for a hitter to successfully hit the ball their hands (“fingers”) need to be as loose as possible. As shown above hitters have a limited amount of time to react to a pitch - We want our hitters to keep their hands in the hitting zone for as long as possible - What this means is the hitters hands are ready & available to drive **to & through the baseball** - If a hitter does not release their wrists - Their hands are “ready” & “available.” In the 0.4 to 0.6 seconds a hitter has to react to the pitch they must recognize if the pitch is high/low, in/out, fastball or off-speed. If the hitter does not have their knuckles lined up it likely means they are gripping the bat too tight - If they grip the bat too tight their hands, wrists, and forearms are tight (in the high school program we describe this as being **“locked”**). When these body parts are “locked” by default the hitter locks all the body parts in the upper half of their body. If all these body parts are locked the hitter will not be able to snap their wrists with maximum efficiency at contact. To “unlock” these body parts simply say **“fingers”** which in turn loosens the hitters grip. A loose grip ensures the hitters whole upper half is loose and able to react to the pitch in a timely manner.*



“Stance” - In the proper set up position a hitters **“stance”** should include the following: In addition to all of the information listed above in “feet” & “fingers” the hitter should have the shaft of the bat approximately 6 inch off the shoulder, their top hand should be lined up with their ear, the barrel should be approximately 4 to 6 inches from their head at an approximate 45 degree angle. The barrel should be visible to the hitter (not wrapped behind their head). The hitter should have a “hitters triangle” pointed slightly towards the catcher (the 3 points of the triangle include the knob of the bat forms the apex, the right & left elbows form the other 2 points). Finally, the hitter should have 50% of their weight on their front foot & 50 % of their weight on their back foot.

Deeper Understanding: As referenced several times in this resource, a hitter has limited time to react to a pitch. As a hitter we want to be in a position where we can get to the point of contact ASAP. This “stance” or set up position ensures this can happen.



“Load” - Once again, a hitter has limited time to react to a pitch. As a hitter we want to get to the point of contact ASAP. For most hitters in the program the **“load”** needs to be as efficient as possible. We simply want most hitter to have their hands go straight back a few inches (2 to 4 inches). We want a slight coil of the front shoulder (to ensure the hitter stays on the baseball and/or does not pull the front shoulder out). At the same time we want the front foot to slightly come off the ground - Land the front foot softly & pointing towards the the 2nd baseman for a righty or SS for a lefty (or thereabouts - Definitely not towards the pitcher and/or any position beyond that) Approximately 40% of the hitters weight should be on the front foot when the front foot lands (60% of their weight should now be on the back side) - When doing this make sure the hitter maintains level shoulder (watch to make sure they do not dip the back shoulder, drop their hands, or wrap the barrel around their head).



“Snap, V, Finish” - When it comes to actually hitting the ball - The hands go straight to the inside of the baseball. Although the naked eye often can not pick this up, we want the back side rotation to happen first (rotate the back hip/back foot). The hands should be slightly behind this action - As stated earlier we want the hands in the hitting zone as long as possible - We do not want to release the wrists too early. You can help the hitter keep their hands in the hitting zone by coaching them to maintain the “hitters triangle” for as long as possible. From a **“hitters triangle”** position the hitter should **“Snap”** their wrists, **“staying back of center”** as they attempt to go to the ball then through the ball - If they successfully go through the ball you will see a **“Power V”** which should be the hitters elbows fully extended out in front of them as the bat is on a path to **“Finish”** over the front shoulder. Something that really slows a hitter down is when they **“Cast”** their hands - This means their hands go towards home plate THEN towards the ball - Often when hitters do this they release their wrists too soon and/or commit their hands too soon - When a hitter does this often they will have a higher **“Time to Contact”** number 0.20 to 0.30 seconds



