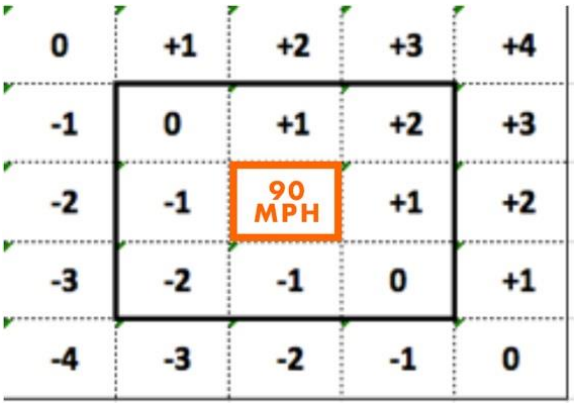
Pitching Effective Velocity

What is effective velocity?

Effective velocity refers to how a pitcher can use location of pitches in the strike zone to affect the perceived velocity of a hitter. Perceived velocity is how hard the hitter perceives the pitch to be coming in at. Generally, the closer the pitch gets to the hitter's eyes/body the harder the pitch is perceived to be coming in. The further away the pitch gets from the hitters eyes the slower the pitch is perceived to be coming in.

For example, let's say a pitcher throws a fastball down the exact middle part of the strike zone at 90 MPH. Let's also assume that the hitter is a right-handed hitter. If that pitcher has a good idea of what a 90-mph fastball looks like, when he sees it come right down the middle he will see a 90-mph pitch. But, if that same 90-mph fastball was to be thrown up and in at the highest point of the strike zone, the perceived velocity of that 90-mph fastball to the hitter might actually look like 92-93 mph. Remember, the radar gun still reads 90, but the hitter is seeing 92-93. If that same 90-mph fastball is thrown low and away at the furthest point in the strike zone, that same 90-mph fastball the radar gun says might actually look like 87-88 to a hitter. Below is a chart put together by Perry Husbands who brought effective velocity to light. This chart is based on a right-handed hitter.



A pitcher can use the knowledge of effective velocity to challenge the hitters timing, balance, and approach pitch to pitch. Below is a sequence of pitches where a hitter would have to make massive adjustments each pitch in order to stay on time and balance. Let's also take into consideration the different speeds in different pitches thrown.

RAWLINGS TIGERS REGIONAL BASEBALL CLUB

2015 MLB Average Pitch Speeds:

4 Seam Fastball: 92.9 MPH

2 Seam Fastball: 91.9 MPH

Change-Up: 83.9 MPH

Slider: 84.6 MPH

Curveball: 78.2 MPH

Pitch sequence example to a right-handed hitter below:

1st Pitch: 90 mph fastball inside for a strike: EV (Effective Velocity) = 91 MPH

2nd Pitch: 83 mph slider low and away for a strike: EV = 81 MPH **-10 off of last pitch**

3rd Pitch: 92 mph fastball up and out of the zone for a ball: EV = 94 MPH **+ 13 off of last pitch**

4th Pitch: 82 mph change up low/out of the zone for swinging strike 3: EV = 80 MPH **– 14 off of last pitch**

In that sequence, a hitter would have had to adjust -10, +13, -14 mph from pitch to pitch and would have had to adjust to different spins of each pitch in different parts of the zone. This makes hitting very difficult.

If the catcher & pitcher can be on the same page and both understand how to use effective velocity to their advantage, it can be a big help in terms of pitch selection from pitch to pitch. The idea of being a good pitcher is to force change into a hitter's approach, timing, and balance. If you challenge those areas of a hitter, then you have a good chance to get that hitter out.