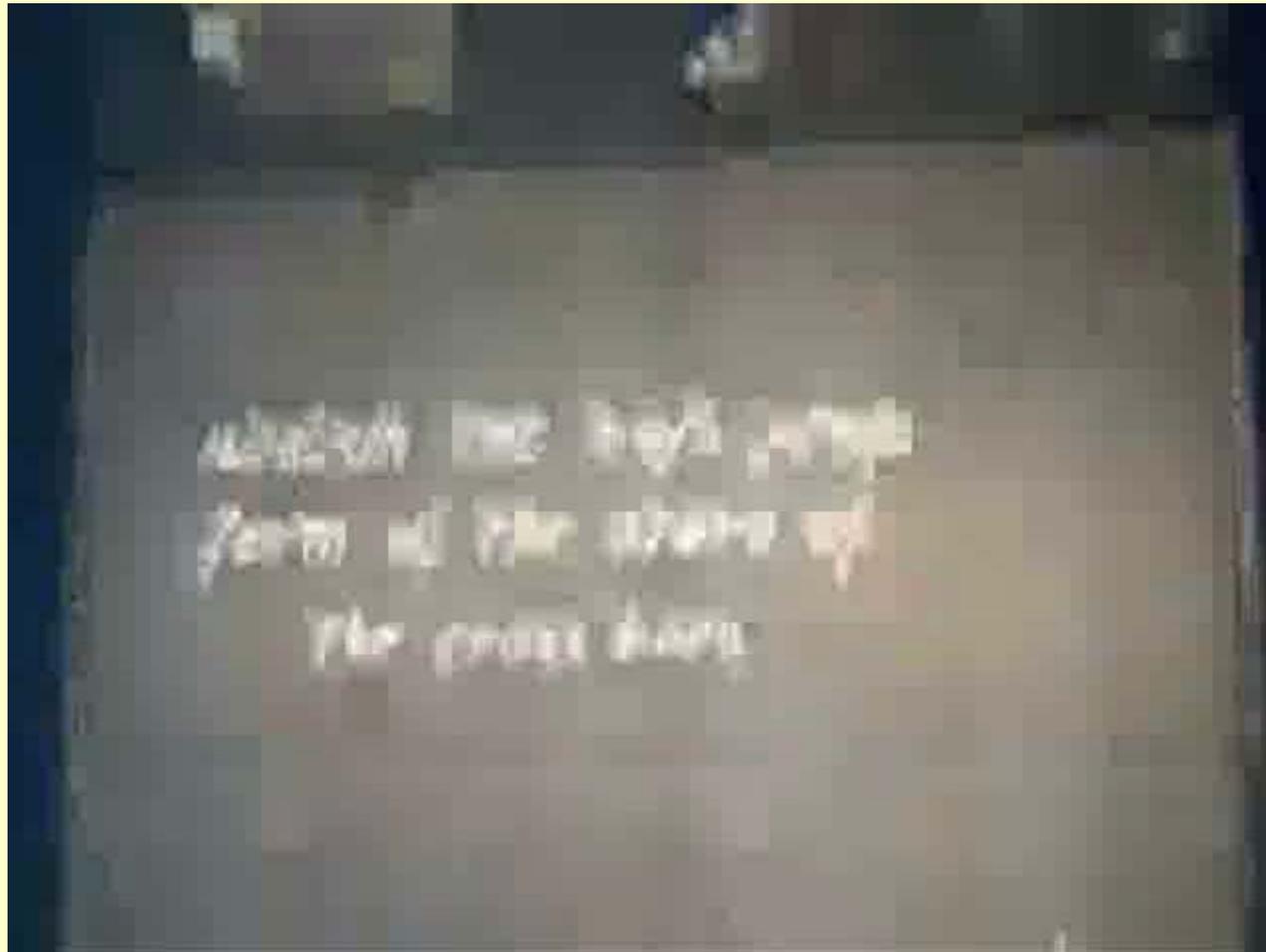


**High Jump**

**Austin McQuary  
Tomball High School**

# The Early Years



# **Basic Components of the High Jump**

- 1. Marks**
- 2. Approach**
- 3. Transition in the curve**
- 4. Transition into Take-off**
- 5. Bar Clearance**

## Marks:

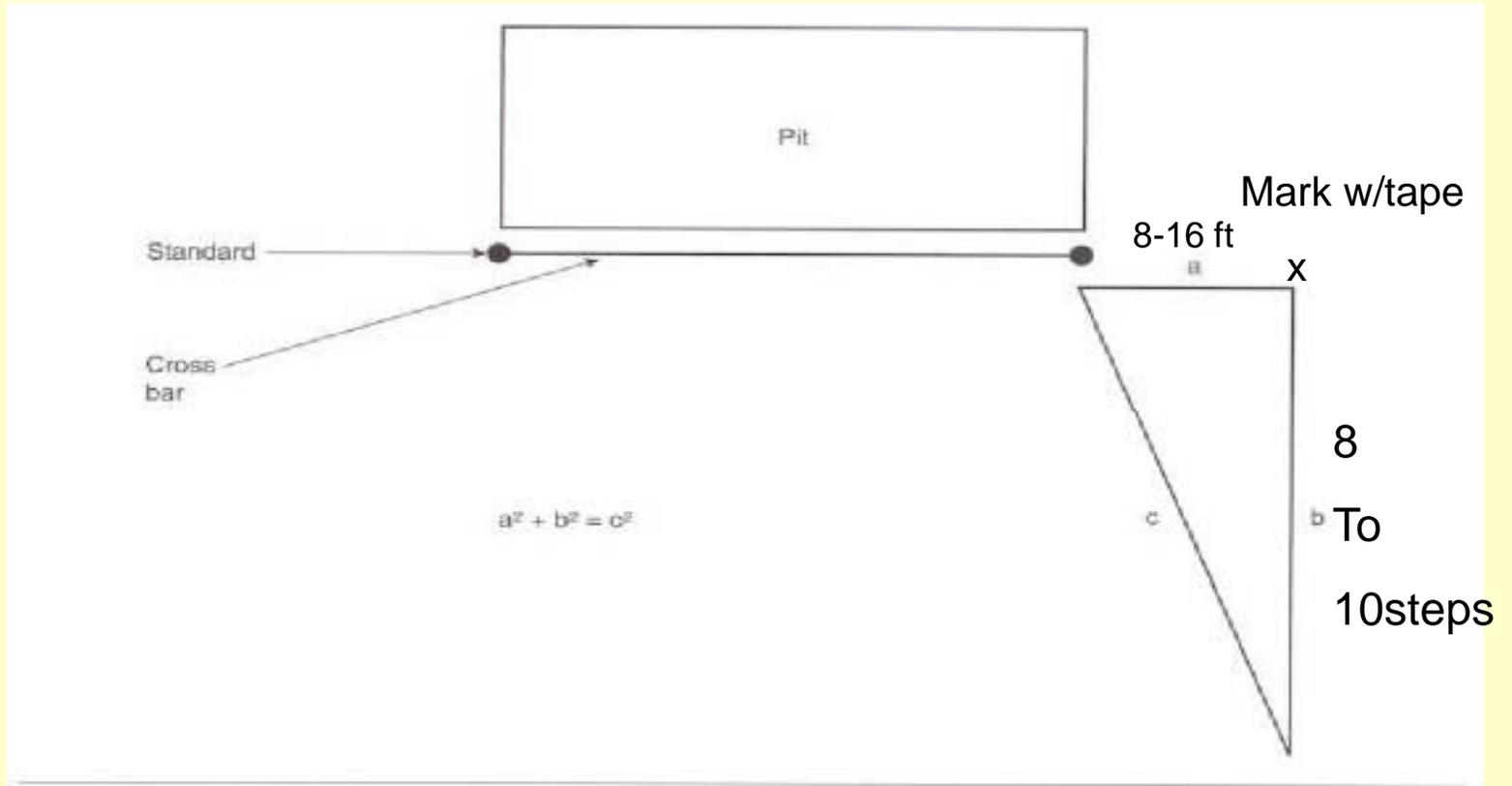


Figure 10.1 Using the Pythagorean theorem to find the starting point ensures the proper angle of approach.

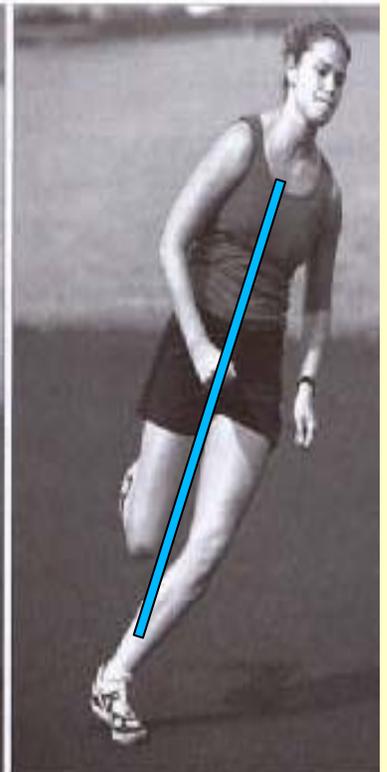
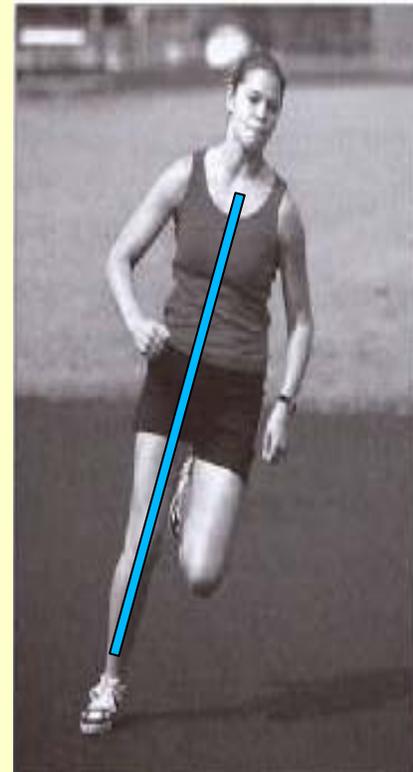
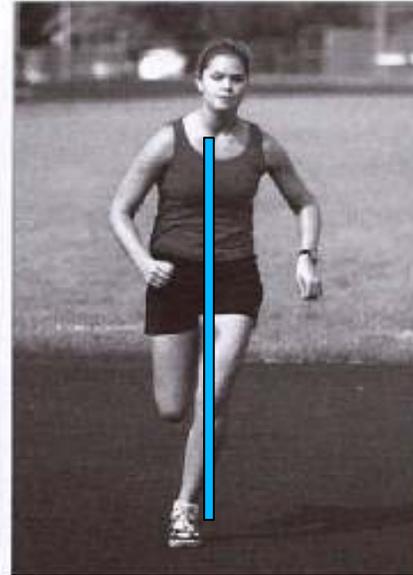
- \*The faster and better the jumper, the wider the mark.
- \*Teach your athlete how to measure out their mark.
- \*Have it written on a card to keep

## **The Approach:** (Developing horizontal velocity towards the pit)

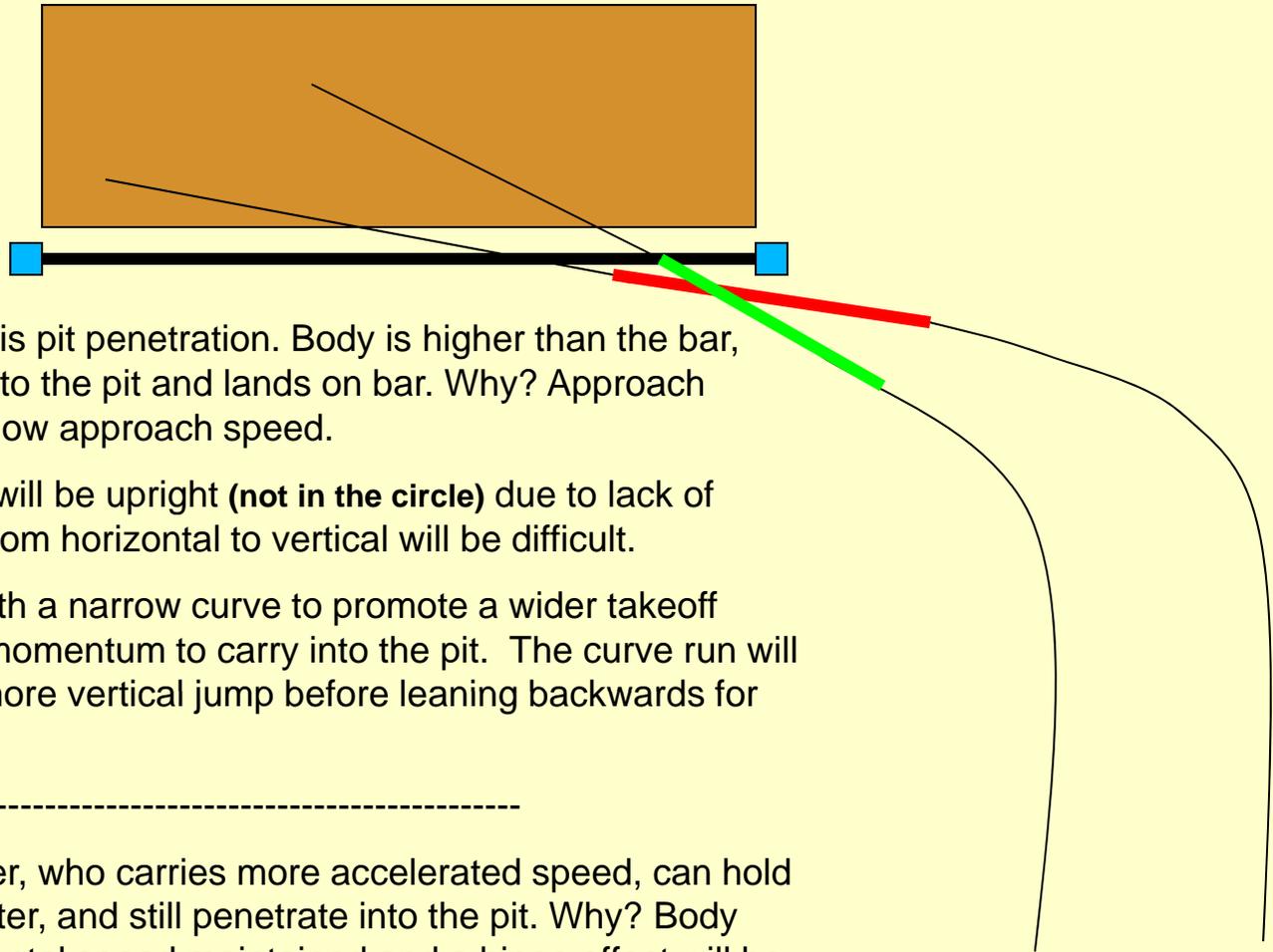
- The start is a critical component to a proper jump
- Stand tall
- Focus on straight line mark
- Visualize the total jump
- 2-3 Rocking motions
- 1<sup>st</sup> step must be consistent
  - \*Push out
  - \*High Knee lift
- 1<sup>st</sup> step sets up tempo
- Speed in steps 2-5 is the result from pushing out on the 1<sup>st</sup> step
- Concentrate on developing controllable velocity and a smooth rhythmical stride pattern as you enter the run.

## **Transition in the curve: (Transitioning Horizontal velocity into Vertical velocity at takeoff)**

- Steps 1-4 are straight
- Step 5 is transitioning into the curve
- Steps 6-10 are in the turn ( J-curve )
  
- As you push out, keep knees up.
- Accelerate with each step (focus on 1<sup>st</sup> check mark)
  
- High heel recovery as a sprinter
- Continue straight line until 5<sup>th</sup> step, which lands on 2<sup>nd</sup> check mark ( if using )
- The fifth step should be turned slightly inward with an outward push.
  - \* Don't step out of line on 5<sup>th</sup> step
- Steps 6-10 will fall in front of the previous step
- Body lean will be from the ankle, not hips, in the circle
- The inside shoulder will be lower than the outside
  - \* This will help create a hinge motion at takeoff\*
- Continue accel. and focus eyes on the bar



# Approach Angle- beginning and experienced jumpers



-A problem for young jumpers is pit penetration. Body is higher than the bar, but fails to carry momentum into the pit and lands on bar. Why? Approach angle is narrow or flat with a slow approach speed.

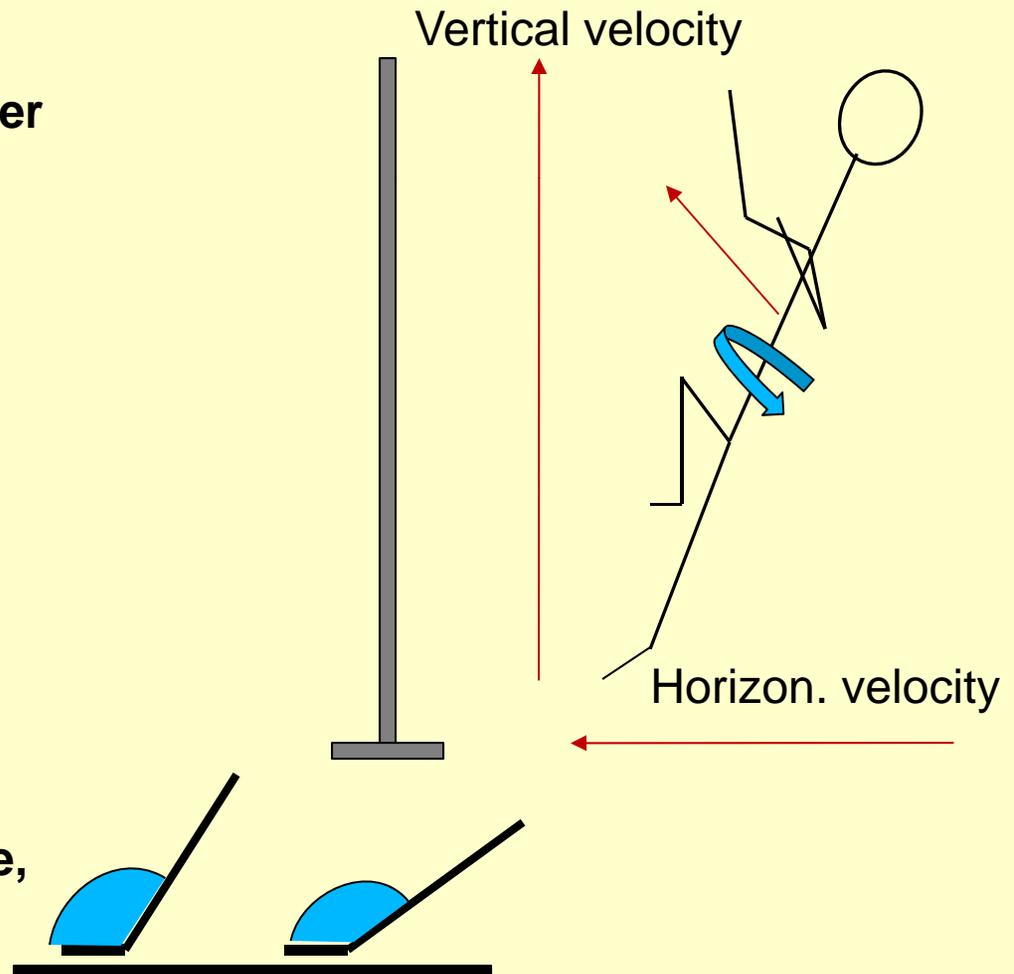
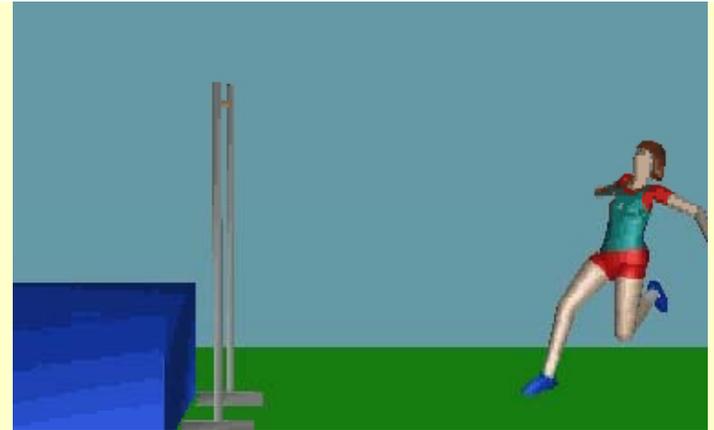
-Also, a young jumper's body will be upright (**not in the circle**) due to lack of speed. Therefore, transition from horizontal to vertical will be difficult.

-Young jumper should work with a narrow curve to promote a wider takeoff angle, which allows for more momentum to carry into the pit. The curve run will be less. This will allow for a more vertical jump before leaning backwards for the arch.

-----  
- The more experienced jumper, who carries more accelerated speed, can hold a wider curve and come in flatter, and still penetrate into the pit. Why? Body lean will be in the circle, horizontal speed maintained and a hinge effect will be created at take-off causing vertical lift.

## Transition into the take off

- Accelerate through takeoff
- Next to last step is longer, lowering the hips
- Body is into the circle and behind the foot on last step
- Last step is shorter and quicker
  - Allows for hip rise
  - Brings free leg through faster
  - COM comes over takeoff foot
  - Come off the ground quicker
- The prior bullets allow for the “hinge moment” effect and proper takeoff
- The greater the plant leg angle, the longer it takes for COM to move over takeoff foot.



## Transition into the takeoff

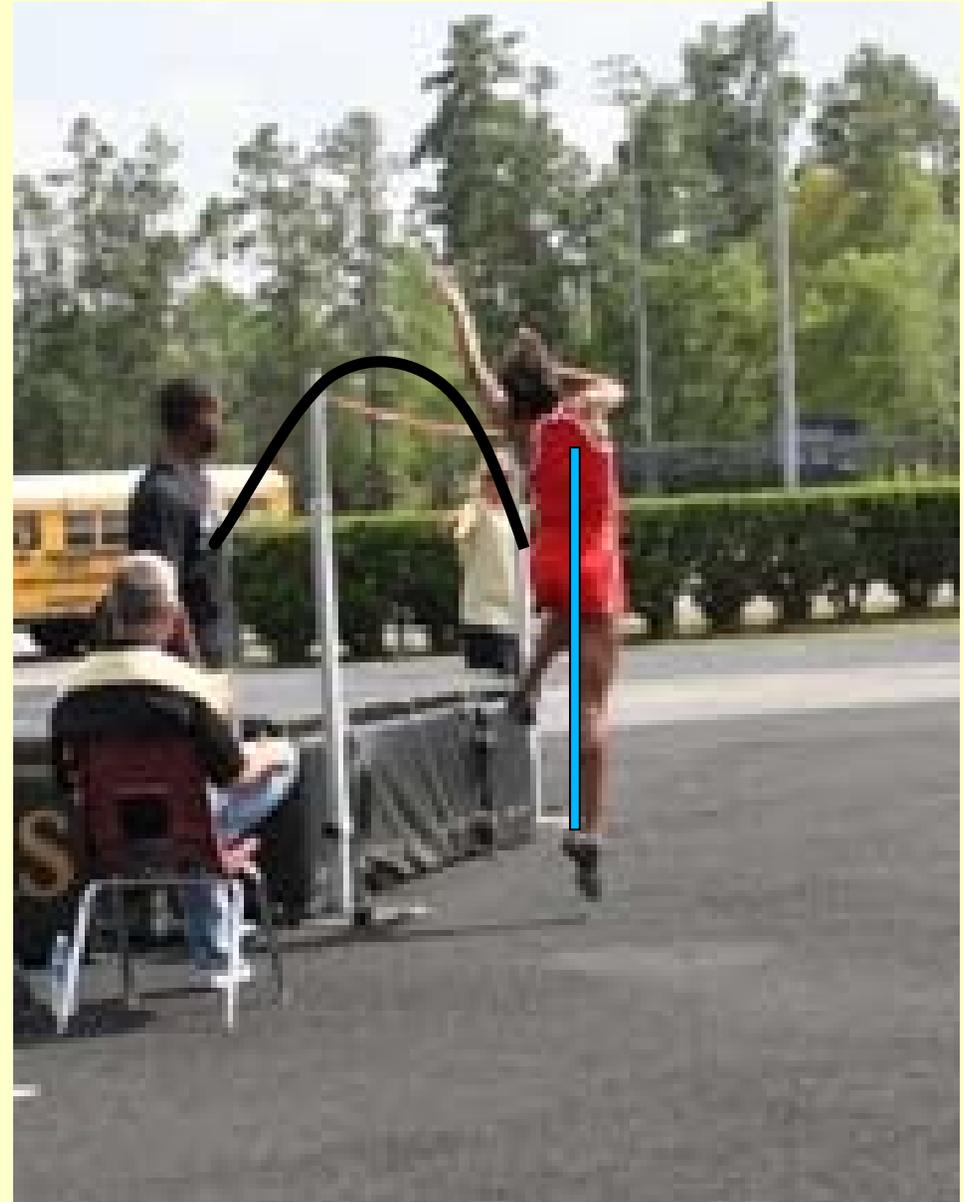
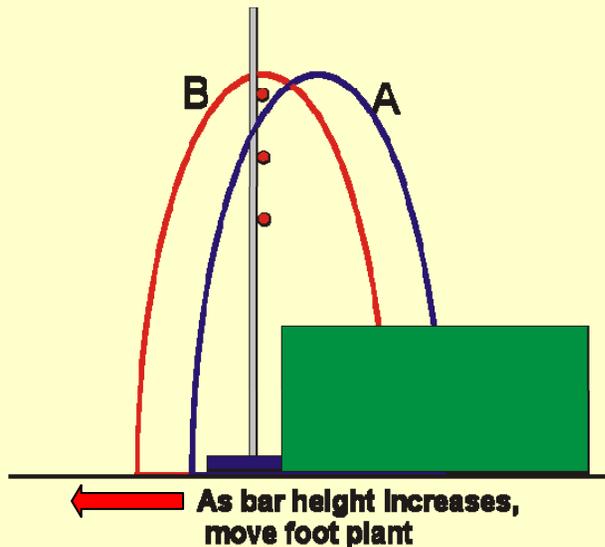
- Foot in front of COM
- Foot pointing inside of far standard \*\*\*
- Keep belly button pointed up towards bar
- Shoulders turned slightly inward
- Free leg foot, low heel recovery
- Upper body is behind hips, while still leaning into the circle from ankles, not hips
- The greater the force applied to the ground at plant, the higher the jump.

(Transfer good horizontal velocity to vertical velocity)



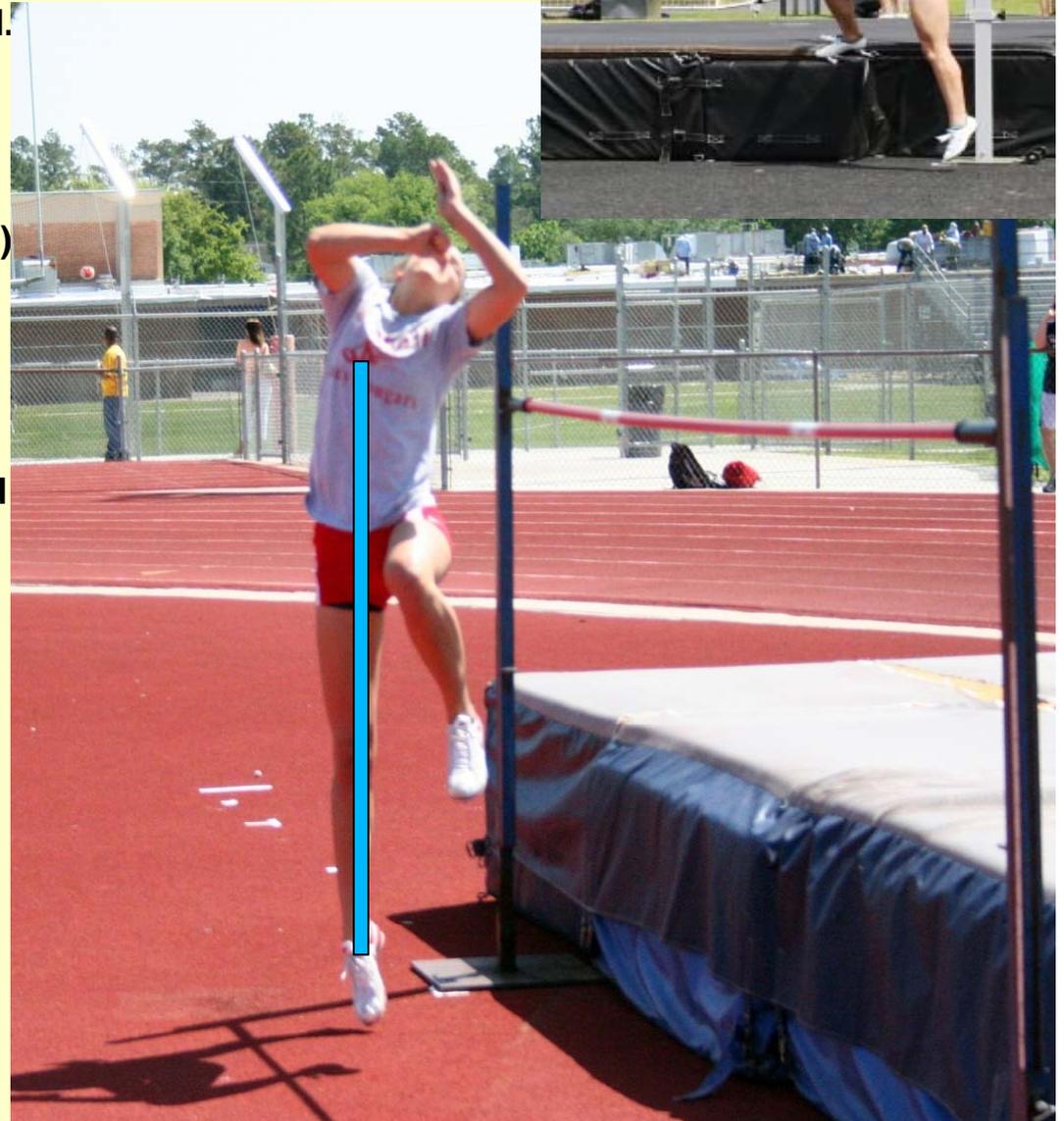
## Takeoff

- Takeoff is usually 1 arms length out from inside near standard
- This distance can adjust as the bar is raised.
- Reason: More time to get more vertical lift (parabolic curve will change with regard to pathway of COG and passing over bar )
- You can get by taking off closer to bar at low height.



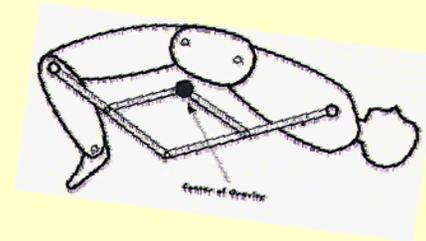
# Takeoff

- Toe of take off foot pointing to inside of far standard.
  - Drive free leg knee vertically upward and hold. (Work on high knee lift, high ankle at practice)  
Let takeoff leg come up to meet it.
  - Simultaneously, timing the arm(s) upward as well.
  - The combined efforts of knee drive and arm(s) results in lift.
  - Lean into the circle and a knee drive that comes in front of belly button (thigh just beyond parallel to the bar) will result in rotation.
  - I stress to athletes to “toe off” the ground and be in a straight line
  - Bar side shoulder, which is higher, shouldn't go toward bar until toe off.
  - Don't throw lead arm to pit to soon, eliminating early layout/flat path
  - Raise COM to highest point
  - BE PATIENT
- \*\*\* After take off, nothing can be done about line of flight



## Bar Clearance

- Appropriate distance from bar at takeoff
- Must be “patient” for high bar clearance
- Head is balanced on shoulders. If head is looking at the bar, shoulder and hip will drop on that side.
- Lowering head (facing up) will keep hips up, allowing the body to arch
- Keep head and legs below hips  
(Hips can actually be above COG)
- Keep heels together and knees out (this shortens the levers for better rotation)
- Body rotates around COG
- As hips clear the bar, bring chin to chest. This causes hips to lower and knees to raise allowing feet to clear bar.



# Hip Suspensions

- Keep hips up
- Heels in
- Up on toes
- Knees outward
- This shortens the overall length of the legs. Allows better rotation
- Push off the ground



# Hip Walk Backs

- Keep hips up
- Push hips up as you walk back
- Stay on toes, allowing hips to stay high
- Slide along mat



# Shoulder Backdrops Drill

- Position athlete on mat.
- Keeping hips up, knees out, heels in; slowly fall back landing on upper back



# **Back Overs (hip overs)**

- Use box for better air time**
- Turn head to side of flight at the start**
- Knees outs, heels in, hips up, head and shoulders down**
-

# Typical practice items during the week

## Approach:

Straight run start – first 4 to 5 steps

Circle Runs – run circle in middle of soccer field.

3pt. Line – Run 3 pt. line in gym ( run whole line or half way with a pop-up.)

Walk in approach

Full run approach \* No bar ( step up on mat )

Full run approach \* High bar ( keep eyes up/hips forward/shoulders turned)

## Takeoff:

Full run with scissor kick

3 or 5 step jump

## Bar Clearance:

Back Arch – head off side of mat, heels together, knees out, fingers touching each heel.

Hip suspensions

Hip walk backs

Shoulder backdrops

Standing back overs ( hip overs ) – Use plyo. Box for longer fall.

Meet day

Quality day

Endurance day

PR day

Weights

Running workouts

\*\*stop and take time to put athlete in the position you want them to be in. Muscle and motor memory