AGILITY & SPEED DEVELOPMENT

SPEED DEVELOPMENT

Launch Speed Trainer

JUMPSOLES

TERMINOLOGY

- SPEED – The ability to achieve a high velocity.

- AGILITY – The ability to change direction without the loss of speed, strength, balance, or body control.

MORE TERMINOLOGY …

- FORCE - The ability to change an object's state or rest or motion.
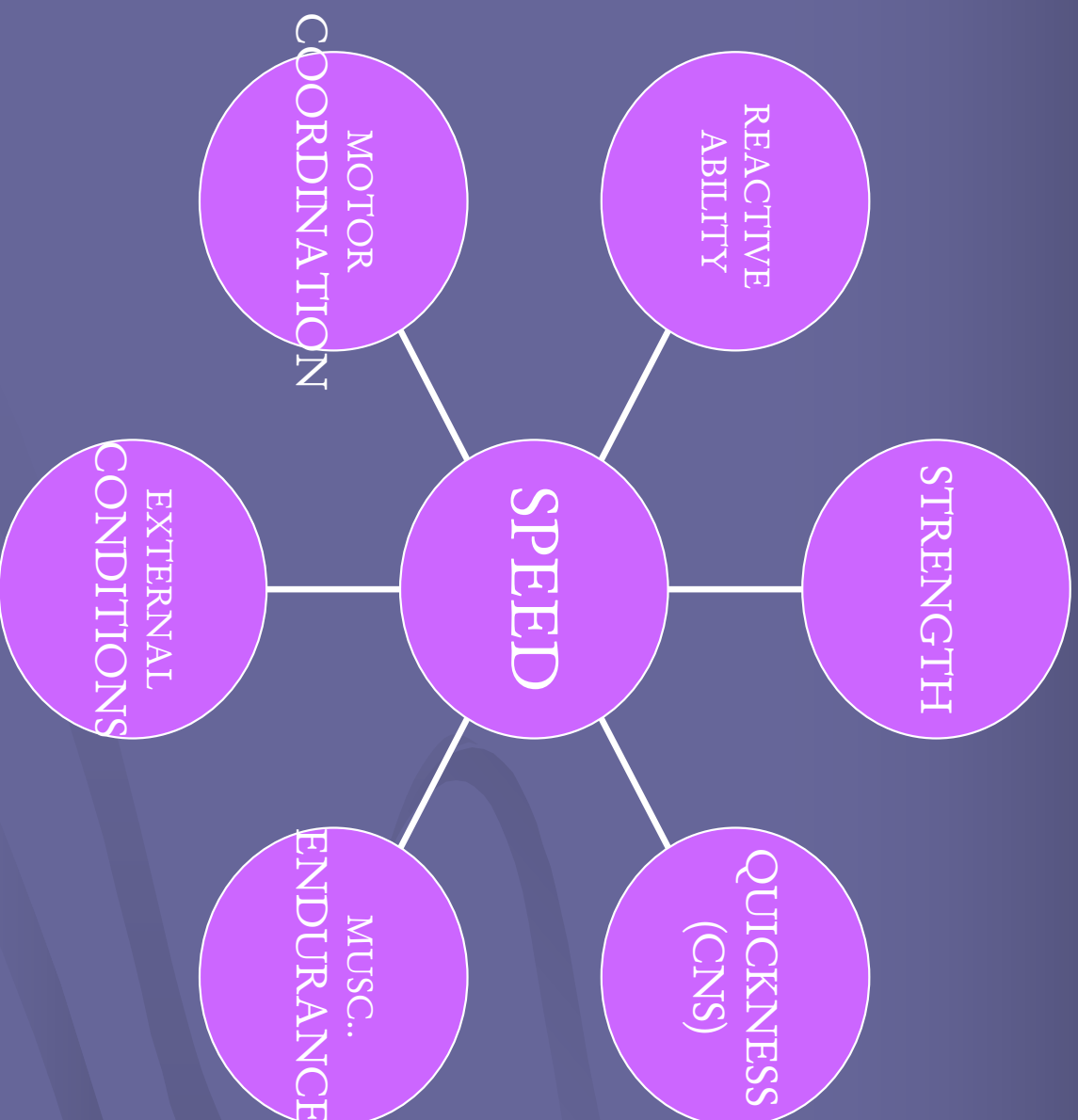
- STRENGTH – The ability of a person to exert force on physical objects using their muscles.

SHE BLINDED ME WITH SCIENCE!

- IMPULSE – the essence of movement.
  - Force X Time
  - Greater the impulse, faster and farther the movement.
- POWER – how fast the force is applied
  - Force X Distance / Time

FACTORS DETERMINING SPEED OF MOVEMENT

THE BOTTOM LINE!

- SPEED = STRENGTH

- AGILITY = STRENGTH

- The most effective speed/agility training tool is the weight room!

  - Strength and Power are the FOUNDATIONS to speed/agility development.

WAYS TO INCREASE SPEED

- Stride Rate – How fast the foot can return to the ground, increasing the number of foot contacts in a given amount of time.

- Stride Length – The actual distance covered with each step taken.

- Starting Ability (Acceleration)

STAY GROUNDED

- Faster running speeds are achieved with greater ground forces in relationship to mass… put more force into it…. and you cover more of it!
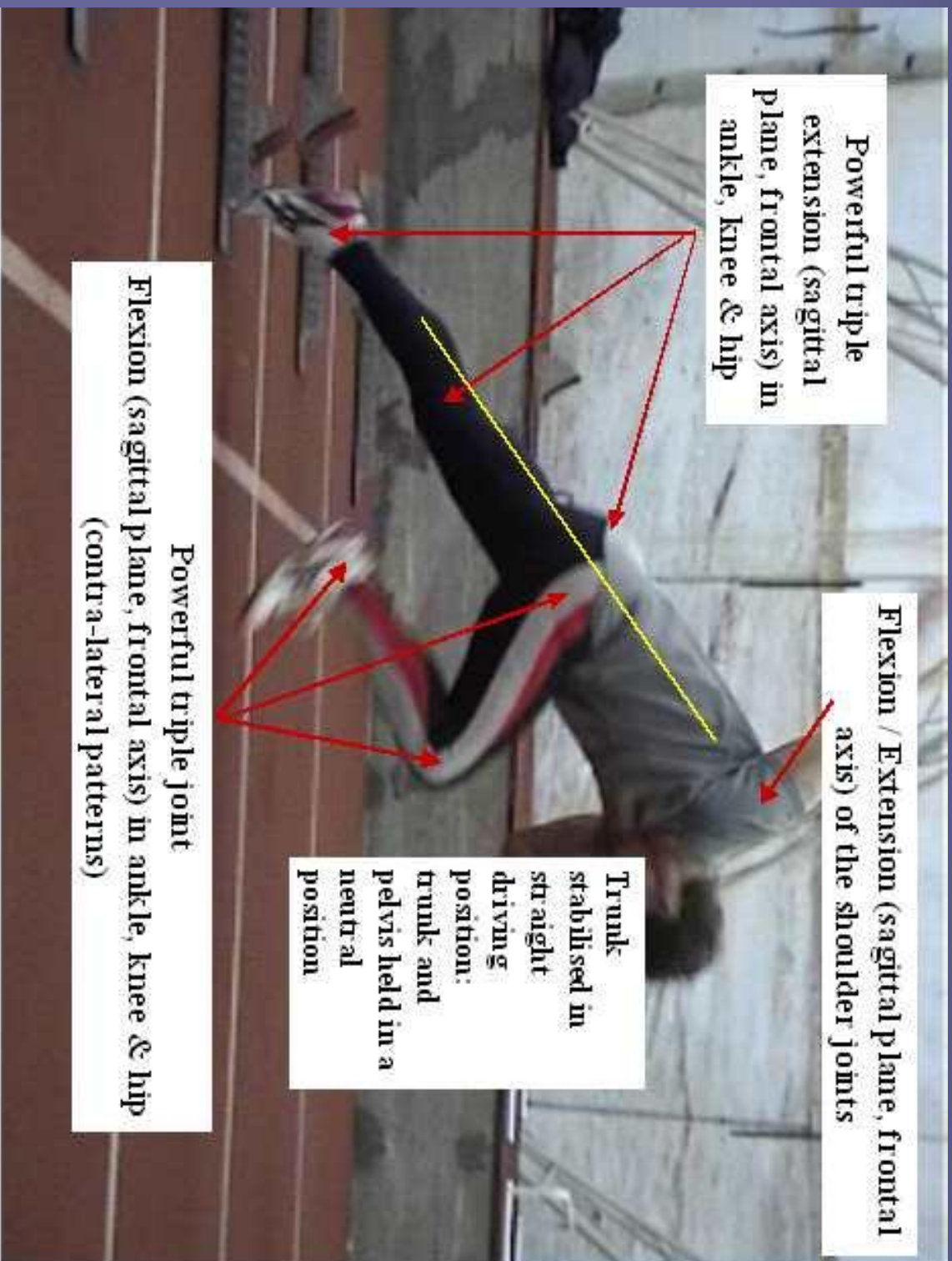
SPRINT TECHNIQUE

- POSTURE
  - Eyes up
  - Shoulders ahead of hips
- ARM ACTION
  - "Relaxed hands"
  - Elbow at 90°
  - "Hammer the nail"
- LEG MOVEMENT
  - Foot strike under hips
  - Heel to butt on recovery
  - Dorsiflexion

PEDAL TO THE METAL!

- ACCELERATION – Powerful, full-range of action with the arms and legs, and a low, driving posture
  - Forceful muscular contraction at the hip, knee, and ankle.
  - Forward body lean (head to toe).
  - "Positive" shin angle, knee ahead of ankle.
  - Forcefully drive elbows back.
  - Start to get tall by 6th – 8th stride.

ACCELERATION

Powerful triple extension (sagittal plane, frontal axis) in ankle, knee & hip

Flexion (sagittal plane, frontal axis) (contra-lateral patterns)

Powerful triple joint

Flexion / Extension (sagittal plane, frontal axis) of the shoulder joints

Trunk stabilised in straight driving position: trunk and pelvis held in a neutral position

Powerful triple joint

DRILLS

- ARM ACTION
- MARCHES
- SKIPS
- BOUNDS
- ACCELERATION LADDER
  - First 2 rungs 16" apart
  - Increase distance between consecutive rungs by 4 inches.
    - 20", 24" 28", 32", etc.

PROGRAMMING

- EXERCISE TIME
  - EVERYTHING IS TIMED!

- TRAINING DISTANCE
  - 40 – 400 yards

- RECOVERY TIME
  - 10 – 40 yards, 1 : 5-6
  - 100 – 400 yards, 1 : 3-4

PROGRAMMING

- Proper design and emphasis of workout / drills for time of year
- Proper warm-up
- Each workout goes from simple to complex
- Each week builds on the preceding week (mechanics, intensity, volume)
- Perfect technique for each drill / each rep
- Complete rest for drills (time of year dependant)
- Appropriate cool-down
- Recovery strategies (ice tubs, nutrition)

PULL OR BE PULLED?

- **ASSISTED**
  - TOWING – cords
  - DOWNHILL (4% grade)

- **RESISTED**
  - UPHILL
  - SLED TOW
  - HARNESS/CHUTES

AGILITY

WHERE DOES IT FIT?

- PHILOSOPHY

- TIME

- FACILITIES

- EQUIPMENT

2 CATEGORIES

- **PROGRAMMABLE**

  - FOLLOWS A FIXED PATTERN OF MOVEMENT

    - Speed Ladder
    - 4 – Corner
    - Husky Agility

- **REACTION**

  - RESPONDS TO AN AUDITORY OR VISUAL CUE

    - Reaction Balls
    - Ball Drop
    - Wave Drill

KEEP IT SIMPLE

- **FIND THE DRILLS THAT MEET THE NEEDS OF THE PROGRAM AND GET GOOD AT DOING THEM!**

PUTTING IT ALL TOGETHER

- GET IN THE WEIGHT ROOM!
- CLEAN UP TECHNIQUE!
- FIND DRILLS THAT FIT YOUR PROGRAM!
- PRACTICE WITH A PURPOSE!