



Activity Plan

TITLE: Hill Training

KEY SKILLS(S) and CONCEPT(S): Building muscular power and strength

SUGGESTED GRADE LEVEL(S): Grades 4-8

OBJECTIVES(S): Students will be able to:

- Increase muscular power and strength by running up hills.
- Strengthen hamstrings, calves, glutes, hip flexors, and Achilles tendons.
- Develop muscle elasticity.
- Improve stride frequency and length.
- Increase strength endurance.
- Develop control and stabilization through downhill running.
- Develop coordination through proper use of arm action during driving phase.

SUPPORT NATIONAL STANDARDS FOR PHYSICAL EDUCATION (NASPE, 2004):

- 1 - Demonstrate competency in motor skills and movement patterns needed to perform a variety of physical activities.
- 2 - Demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.
- 4 - Achieves and maintains a health-enhancing level of physical fitness.

MATERIALS NEEDED: Running shoes, stopwatches, hills: short, medium, long

DESCRIPTION:

Hill running is an excellent training and fitness strategy to increase strength and power. In hill running the student/athlete uses their body weight as resistance to push against.

- **Short hills:** should take no more than 30 seconds to run up and has an inclination between 5 and 15 degrees gradient. This energy source is entirely anaerobic.
- **Medium hills:** should take between 30 to 90 seconds to run up. Energy source is both anaerobic and aerobic. Youth should do 6-8 runs of 45 seconds each.
- **Long hills:** should take from 90 seconds to 3 minutes. Primary energy source will be aerobic.

TEACHING SUGGESTIONS/TIPS:

- Maintain proper posture while running hills, lean slightly forward.
- Hill training should be used no more than once or twice a week.
- Run with a slightly higher knee lift.
- To keep your body upright, keep your head up and fix your eyes directly ahead, not at your feet.
- Jog slowly and controlled on each descent (downhill).
- Running on soft surfaces, grass and chip trails are best.
- Run with shorter strides.

VARIATIONS AND/OR SUGGESTIONS:

- **Stairwell:** In the absence of hills, run on the steps in between floors at the school site.
- **Bridges:** In addition to hills, inclines on bridges can be a good substitute. Be sure that the bridges have appropriate pedestrian paths or shoulders.
- **Treadmill:** Recommended for students in grades 6 or higher under the supervision of a qualified adult. Run on a treadmill at an 8 percent incline for 90 seconds with 2 minute flat recovery jogs in between.

REFERENCES:

<http://www.runnersworld.com>

<http://www.mamashealth.com/run/downhill.asp>

<http://www.brianmac/co.uk>

<http://www.runningplanet.com/training/hill-training-overview.html>

On your mark, get set, give them a healthy start.

