Urban Poling/Nordic Walking

Physical Education Lesson Plan

Senior High School, Grades 10, 11 & 12

General and Specific outcomes focus for this lesson:
(Reference: Alberta Education Curriculum https://education.alberta.ca/teachers/program/pe.aspx)

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<td>Application of Basic</td>
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<td>Body Image</td>
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<table>
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<tr>
<th>Cooperation</th>
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**General Outcome:**
Students will understand, experience and appreciate the health benefits that result from physical activity.

**Specific Outcome:**
Demonstrate, monitor, analyze and reflect upon ways to achieve a personal functional level of physical fitness (specifically the cardiovascular component of functional fitness)

**Equipment/Set-up/Preparations:** Outdoors (large flat field next to a gradual hill).
Pylons, stop watches or electronic timing devices, recording sheets, pencils or electronic recording programs, Urban Poles (Fitness Series 300 or 4Life), Target Heart Rate charts and Perceived Rate of Exertion charts.

**Safety guidelines:** Refer to page #107, running and walking guidelines.
Lesson Introduction/Review:

**Purpose of the Lesson:**
1) to compare the heart rate response to walking without poles and walking with poles.
2) to experience how heart rate changes in relation to the terrain we are walking on and monitor the intensity of the activity.
3) to analyze and reflect on how to improve on the cardiovascular fitness according to the F.I.T.T. formula and CSEP – Physical Activity Guidelines. [Guidelines]

**Review:** Previous lessons will have covered: Urban Poling fitness walking techniques, P.R.E. (Perceived Rate of Exertion), Heart Rate Zone Training [HR Zones]

Heart rate monitoring techniques. [HR Monitor Techniques]

**Preparations:** Ensure that there are enough Urban Poles for each student. They may work in partners and share poles if there are not enough poles. Place pylons on a field in a varied pattern to create an obstacle or varied course that is approximately 200 meters in length.

**Warm-up:** Gather students together on the outdoor field and explain the purpose of the lesson. While lesson instructions are being reviewed have students participate in joint mobility exercises. Partner students up and pass out poles. Demonstrate and have students follow pole specific stretching: twisting with poles above the head (poles together and holding onto handles/tips), side lunges and forward lunges (10 times/each). Refer to stretching exercises for examples: [Stretching]

**Main Learning Activity:**
- Students will be timed on the flat obstacle course by their partners.
- The first time through they will walk briskly without poles and then the second time through try to maintain the same pace with Urban Poles.
- As soon as the student completes the course they will monitor their pulse for 10 seconds, calculate pulse per minute and partners will record the pulse on the chart. Partners switch and record for each other.
- Once completed with the flat course, partners will be directed to a hill and Urban Pole walk up and down the hill several times. (number of repeats will depending on the hill available – so that the duration is approximately 2 – 4 minutes).
- Immediately after completing the hill walk record pulse and then switch roles.

**Cool down:** Form a circle or semi-circle and complete some active stretching exercises for the upper and lower body muscles.

**Reflection:**
1. Students will take their recorded data and evaluate their heart rate’s response. They will evaluate their data as it relates to their cardiovascular heart rate zone.
2. Student’s will set personal goals for improving their cardio vascular fitness based on the F.I.T.T. formula, and if they were using Urban Poling or Nordic Walking as an activity to improve their fitness.
# Urban Poling Exercise Recording Chart

## Reflection Application:

1. Describe what the difference was between the heart rate response without poles and with poles when walking on flat terrain. What would cause the difference?

2. Based on the FITT formula and The Physical Activity Guidelines, design a fitness program using Urban Poling to improve your cardiovascular fitness.

   **Frequency:**

   **Intensity:**

   **Time:**

   **Type:** (flat terrain, hills, or a combination)

<table>
<thead>
<tr>
<th>Name</th>
<th>Flat Terrain Without poles</th>
<th>Flat Terrain With poles</th>
<th>Hill Walking Terrain With poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
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<tr>
<td>Pulse</td>
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Research and Background information for teachers

- The physiological responses to walking with and without Power Poles™ were studied by Hendrickson (1993) and by Porcari et al. (1997). It was found that the use of poles significantly increased oxygen uptake, heart rate and energy expenditure by approximately 20% compared to the walking without poles in fit subjects.
- In high intensity poling Nordic walking heart rate increased by 35 bpm on an average compared to regular walking. (Jordan et al. 2001)
- Nordic walking increases both energy expenditure and oxygen consumption on average of 20%, with some subjects as high as 46%. (Morse et al., 2001, Church et al., 2002)
- Heart rates were 5-12 and 5-17 bpm higher for moderate and vigorous Nordic walkers compared to walkers not using poles. (Laukkanen, 1998)
- To summarize the acute physiological effects of Nordic walking, it increases the energy consumption of the body compared to regular walking with the same speed without poles both in women and men and in fit and less fit individuals. The increase is due to larger working muscle mass in the upper body. (Dr. Raija Laukkanen, Docent, University of Oulu, Department of Medicine; Director, Exercise Science)

References


Resources:

- Heart Health This resource may be used with General Outcome B & D in the grade 10 Program of Studies. https://education.alberta.ca/media/618568/heart.pdf
- Physical Education online site: http://www.education.gov.ab.ca/physicaleducationonline/teacherresources