

Peter Rattigan, Ph.D., Asst. Professor, Rowan University
rattigan@rowan.edu
PERFECTLY PRACTICAL Pedometer Perambulations

Pedometer Lesson Ideas and Links

Elementary

1. **Estimation Activities:** In pairs, students estimate the number of steps in the gym (length of the gym, perimeter, number of laps of the gym for 100 steps, 1000 steps, etc.), in the school from the gym or classroom to a variety of places (i.e. cafeteria, office, playground). After they record their estimation, they use the pedometers to measure the number of steps for each challenge. They can also answer a few questions about their estimations (i.e. “How close was your estimate from the gym to the office?” This incorporates subtraction and multiplication, percentages). Then they can be asked to calculate the total number of steps from the gym to each area. Good math integration.
2. **Jog & Jump partner Game:** Uses one pedometer per pair and jump ropes. Assign the students to a numbered cone as they enter the gym. The cones should be set up in numerical order on the perimeter of the boundaries of a large rectangle. The students need room to jog clockwise around the outside of the cones. Have equipment at each cone or have the students get the equipment on the way to the cone. On signal, one partner will jog clockwise around the perimeter of the area while the other partner practices their jump rope skills (There could be a skills sheet with jump rope skills for them to practice on it). The jumpers need to stay within the rectangle while their partners jog around the outside of the area. After 2-3 minutes, have the joggers stop and check their pedometer steps, and go back to their cone. The jogger records his/her steps while the other partner puts the pedometer on and resets it to zero. On signal the new jogger jogs and the other partner jumps rope.
3. **Fitness Stations:** Set up several fitness stations, alternating cardiovascular endurance, strength and flexibility. Split the class into equal groups of about 3-5 students each. If there is limited number of pedometers, have one or two to each group. Those two wear the pedometer for the entire circuit. The next time class meets and/or this activity is done, another two students in the group wear the pedometer. After completion of the stations record the pedometer steps for the group, multiplying the average pedometer step count by the group score. After both partners complete the warm-up/fitness exercises, have them add their scores together for a group score. The same can be done for the entire class
4. **Pedometer partner passing challenge:** Set up an obstacle course of cones with periodic “goals”. Each pair of students has one soccer ball and one pedometer (or one each). The dribbler puts on the pedometer and resets it to zero. On signal, the dribbler starts and the partner jogs throughout the challenge course. To earn a point they must pass the ball through a target to their partner and their partner must return the pass through the same target. If the ball hits the target no points are earned. If either partner knocks over a target they have to take away one point from their total score and set it back up. The dribbling partner stays the same for each round. After two minutes, signal the students to stop. Have the student with the pedometer record his/her steps. Then the jogging partner becomes the dribbler. Alternate every round. Can be done with other game skills (basketball, pillow polo, toss and catch objects)
5. **Personal Fitness Routine:** Have students develop a personal fitness routine with a partner, alternating cardiovascular elements with strength and flexibility. While one does the cardiovascular activity, the other partner does a flexibility/strength exercise. Alternate every 30 – 60 seconds. Set a group goal (say, 1,000 steps). Have partners keep going until they reach their group goal. One partner may have done 550 steps and the other 450 – thereby showing that although it is a group exercise, fitness goals are personal.
6. Students can log miles at the PE Central Log It web site: <http://www.peclogit.org/>. Teachers have to register their school and classes and then students have to register. Students can walk across the USA, view their log, set a goal, print certificates for meeting daily goals, etc. The teacher cannot enter the steps for the students the students need to do that (they can do this at home also). Students can log as many times as they wish throughout the day but they cannot exceed 25,000 steps or 12.5 miles: Pedometers do not have to be used for Log It. Registration directions for both teachers and students can be found at:
<http://www.peclogit.org/regdirections-logit.html>

Secondary

7. Kangaroo Relay: Have students in relay groups with a cone set out 5-10 yards in front of the group. The first person in the group carries a rope or wand out to the cone and back. The second person takes one end of the rope or wand, and both carry this across the rest of the group about 6" off the ground. Each group member has to jump over it. The first person joins the back of the line and the second person runs out to the cone and back, joins with the next person in line and repeats the process until everyone has carried the wand/rope once.
8. Other relay games: Do relay/skill relay activities using pedometers. Ask students if they can modify the relays to maximize steps. The Pangrazi et al. text (see below) has other relay ideas.
9. Tactical movement with pedometers: Have winners of games in PE classes decided not by score but by steps (most movement off the ball or most team movement, for example).
10. Non dressers: Have non-dressers just walk during PE class with pedometer on.
11. Invent a game: students can invent a game which maximizes participation (steps) for everyone and inclusion (everyone can play and be involved).
12. Modify a game: Students can modify a game which may have a lot of standing around (such as kickball) and modify it so that all students are more active. The Pangrazi et al. text (see below) has game ideas.
13. Student designed obstacle or orienteering pedometer course (or parcourse): Have students design a course to maximize steps and other fitness elements, with teacher input/modification, then have classes try it out. This could be a temporary, indoor course, or even a permanent outdoor course.

General ideas, K-12 and beyond

14. Pedometer calibration: Have students calibrate pedometers by counting 100 steps and seeing how far off their pedometers are in terms of percentage. They can then factor this in to their step totals. Some pedometers can be adjusted/recalibrated.
15. Estimating stride length: Stride length can be estimated using the "wet shoe" method (outside). Have students wet the sole of their shoe and walk/jog/run at normal pace. They can then measure their stride length using a tape measure. Be sure to have them measure heel to heel or toe to toe.
16. Test strip: Set out a "test strip" of 17.6 yards. Have students walk/jog/run a distance of which the test strip is in the middle. Multiply the number of steps taken to traverse the strip by 100 to get an estimate of steps per mile.
17. Use pedometers right away to help students see how active they are in different parts of the PE class or school day. Have them put them on at the start of class or day and provide each with an index card or 1/2 sheet of paper – where they'll put their name and class and record the number of steps they take in different activities (warm-ups, stretching, games or skill work). Pedometers can also be checked out to the classroom teachers to have them record their steps throughout the day – and see which ones meet the 10,000 steps a day goal (do music teachers? Art teachers? Custodians? Principals? Parents? Food service workers? Kindergarten teachers? Recess supervisors?)
18. Pedometers can be effective for instant activity and for encouraging constant movement until the last moment of class. Tracking the path of the Olympic Torch across the USA, or the world, Cruising through the State or area (for example, going through the local area by map and photos to get a sense of local geography where students live). Students can also run or walk across the USA, other countries, the world, etc., based on the same idea
19. Use pedometers to track daily activity and have students set their own personal goals. Instead of making arbitrary goals for students, let them monitor daily activity and then set their own goals based on the data they have collected.
20. Set up a spreadsheet and have the students log their own steps (miles, calories, etc.) Several math and computer skills can be reinforced in this way. This can also be combined with data on daily calorie output and intake. Teachers and parents can do this too!

21. Use pedometers daily. Students have to record their totals and convert them to mileage. Every five miles recorded they earn a token or some other recognition. Teachers and parents can do this too!
22. Consider checking pedometers out over the weekend to students and their families (the library system for check outs can help). Pedometers can be purchased for as little as \$3-4 each.

OTHER INFORMATION ON PEDOMETER LESSONS

Lesson plans and ideas incorporating pedometers can be found at PE Central's pedometry link and at the New Lifestyles web site:

<http://www.pcentral.com/pedometry/index.html>

<http://www.new-lifestyles.com/>

Human Kinetics has published a book of 67, K-12 pedometer lesson ideas, some of which are described above: Pangrazi, R., Beighle, A., & Sidman, C. (2003) *Pedometer Power: 67 Lessons for K-12*. Champaign, IL: Human Kinetics.

Keeping and maintaining pedometers:

- Thread the pedometers through rip flag belts for students to wear
- Number each pedometer and assign students a specific pedometer in each class
- Establish some kind of rule about shaking pedometers
- Consider using the most basic and convenient models

Basic pedometer information

- The more functions a pedometer has, the more expensive they are
- Functions include steps, distance, calories burned, stop watch, time of day
- One function (steps) are inexpensive and robust, and other functions can be estimated
 - Estimating the other information is a good way to incorporate interdisciplinary elements
- Two function (step and distance) pedometers can provide instant information for classes
- Some teachers like to have stop watch functions for students to incorporate information on activity time

Some Pedometer Purchase Web Sites:

<Http://www.pedometersusa.com>

<Http://www.vkrshop.com>

<http://www.walk4life.com>

<http://www.new-lifestyles.com/>

Pedometers may also be purchased through the major PE catalogs such as Gopher, Sporttime, and FlagHouse.

Good source for pedometer reviews:

<http://walking.about.com/cs/measure/tp/pedometer.htm>

Estimating Calorie output using steps:

“In slow walking--2.5 mph--every 30 steps burns about one kilocalorie (Calorie) of energy. That figure is for a person who weighs about 130 pounds (60 kg). Someone smaller (like a child) will burn less, as he/she is transporting a smaller mass. For fairly fast walking--3.5 mph, it takes about 27 steps to burn one kilocalorie (Calorie) of energy. That, again, is for a person weighing about 130 pounds. Therefore, how fast one is walking and how much mass a person is transporting influences the number of steps that it takes to burn one kilocalorie (Calorie) of energy. I usually say that it takes anywhere from 20-50 steps to burn a kilocalorie (Calorie) of energy. For someone who weighs as little as 70 pounds it may take 50 steps to burn one kilocalorie and for someone who weighs as much as 300 pounds it may only take 20 steps to burn one kilocalorie.”
(Teresa Vollenweider, Fitness & Pedometer Expert – taken from PE Central's pedometer FAQ page).