

## LESSON 1: USING PEDOMETERS WITH THROWING AND CATCHING ACTIVITIES

### Grade-Level Outcomes

#### Primary Outcome

**Fitness knowledge:** Participates in moderate to vigorous aerobic physical activity that includes intermittent or continuous aerobic physical activity of both moderate and vigorous intensity for at least 60 minutes per day. (S3.M6.6)

#### Embedded Outcomes

**Catching:** Catches with a mature pattern from a variety of trajectories using different objects in varying practice tasks. (S1.M3.6)

**Passing and receiving:** Throws, while stationary, a leading pass to a moving receiver. (S1.M5.6)

**Safety:** Uses physical activity and fitness equipment appropriately and safely, *with the teacher's guidance*. (S4.M7.6)

### Lesson Objectives

The learner will:

- explore moderate to vigorous aerobic physical activity that is intermittent or continuous in nature.
- track pedometer steps to determine whether various activities are of moderate or vigorous intensity.

### Equipment and Materials

- Variety of throwing implements (e.g., rag balls, foam footballs, rubber animals), enough for every student
- Pedometers
- Pedometer worksheet
- Pencils (1 per group of 2)
- Clipboards (1 per group of 2)
- Cones
- Grass field
- Stopwatches (1 per small group)

### Introduction

*Today, we will begin our lessons on physical activity participation. Through throwing and catching, we will explore exercise intensity. Who has used a pedometer before? Who knows what it does? Those who don't will by the end of today's lesson.*

### Instructional Task:

#### Explanation of Pedometers and Pedometer Tool

#### ■ PRACTICE TASK

Pass out pedometers, clipboards, pencils, and pedometer worksheets to students.

**EMBEDDED OUTCOME: S4.M7.6.** Make sure that students are using pedometers appropriately (check for safety, validity, reliability, etc.).

The worksheet will help students calculate steps per minute and determine their physical activity intensity.

## Guiding questions for students:

*Today, you will use pedometers to count your steps while you practice throwing and catching. That will help you determine your level of physical activity during class.*

- How many steps do you think you will take during this class period?
- Do you think you will engage in moderate physical activity or vigorous physical activity?
- What are some numbers that you have come up with from the moderate amounts of activity?
- What about vigorous?
- Why do you think the numbers are different?
- What are some things that you could do to increase or decrease the amounts of activity?

## Student Choices/Differentiation

Students may work by themselves or with a partner on this task.

## What to Look For

- Students are attaching pedometers in the correct location.
- Students are following along with how the pedometer steps per minute worksheet works.

## Instructional Task: Throwing and Catching Warm-Up

### ■ PRACTICE TASK

Students practice throwing and catching, starting off throwing from a short distance to warm up the major muscles involved in the activity.

Using the worksheet provided, students track their times to determine steps per minute and exercise intensity, so that they can determine proper warm-ups.

Remind students to warm up at a lower intensity than the main activity.

## Extension

If time permits, students can increase the distance of their throws as they warm up.

## Student Choices/Differentiation

- Students can choose various objects to throw.
- Students can choose various distances to start off the activity.

## What to Look For

- Students are catching the object with proper hand positions below the waist, at the waist, or above the waist.
- Students are filling out the worksheet properly.

## Instructional Task: Throwing to a Moving Target and Catching While on the Move

### ■ PRACTICE TASK

Students practice catching with a mature pattern from a variety of trajectories using different objects in varying practice tasks. Students take turns in the roles of thrower and catcher.

Using stopwatches, students time each of their turns at throwing and catching to determine steps per minute and moderate to vigorous physical activity.

Ask students to predict steps per minute and either moderate or vigorous physical activity while throwing and again while catching.

Stationary students throw to partners, who move back and forth in a grid formation.

# PHYSICAL ACTIVITY PARTICIPATION (GRADE 6)

**EMBEDDED OUTCOMES: S1.M3.6: S1.M5.6.** The purpose of the activity is to provide students with an opportunity to track activity with a pedometer. You also should make sure that students are making accurate lead passes and are catching from a variety of trajectories using different objects. Feedback can focus on both catching and throwing, as well as pedometer use.

## Extensions

- Partner fakes one way and then goes the other way.
- Willie Mays catch: Partner catches the object over the shoulder while running away from the thrower.
- The long pass: Ball is thrown as far as possible toward the partner, who catches it on the run (Hichwa, 1998).

## Guiding questions for students:

- Is this a constant or varied practice schedule for the throwing person?
- What kind of feedback can you give your partner based on what you saw?

## Student Choices/Differentiation

Students can choose which throwing objects to use and at what distances.

## What to Look For

- Students are catching the object with proper hand positions below the waist, at the waist, or above the waist.
- Students are using a variety of trajectories and throwing distances.

## Formal and Informal Assessments

Please note that all of the assessments for this lesson are formative, because underlying content is being practiced for the standards addressed.

- Pedometer tool worksheet
- Informal throwing and catching
- Exit slip: What is a pedometer? What can we measure while using one?

## Closure

Debrief students on the lesson while pedometers and worksheets are being collected.

- How did your steps per minute and exercise intensity compare when you were in the roles of throwing and catching?
- How did your steps per minute and exercise intensity for your throwing warm-up compare with the rest of practice?
- Were today's activities enough to give you 60 minutes of physical activity for the day?
- What can you do to reach 60 minutes of physical activity for the day?
- How could we redesign today's learning experience so that the throwing person gets more steps per minute?

Note: Because this is a convergent guiding discovery, students should realize that their steps per minute should be lower when they are the stationary thrower. Also, students should realize that they could redesign the learning experience so that the thrower is on the move also.

## Reflection

- How are students' throwing and catching skills improving over the course of the school year?
- How engaged were students in tracking their physical activity using pedometers?

## Homework

Continue practicing throwing and catching at home, during recess, and at lunch. If you can, try tracking this information and figuring out your steps per minute. A number of smart phone apps can track your steps (i.e., turn your phone into a pedometer).

## Resources

- Hichwa, J. (1998). *Right fielders are people too: An inclusive approach to teaching middle school physical education*. Champaign, IL: Human Kinetics.
- Schmidt, R.A., & Wrisberg, C.A. (2008). *Motor learning and performance: A situation-based learning approach*. 4th ed. Champaign, IL: Human Kinetics.
- Wickstrom, R.L. (1983). *Fundamental movement patterns*. 3rd ed. Philadelphia: Lea & Febiger.

## PEDOMETERS

Some pedometers now track activity time. Some simply measure steps. If your pedometer measures only steps, you will need to use a stopwatch or watch to track your time.

Caution: Beginning exercisers and people who have health issues should not try to reach the 120 to 140 steps per minute range. They should remain patient, working up slowly to a higher exercise intensity over a couple of months.

Steps per minute (SPM)	Intensity	Definition
120-140	Moderate	Activity of an intensity equal to brisk walking
	Vigorous	Movement that expends more energy or is performed at a higher intensity than moderate-intensity activity

Source: Graser, S.V., Vincent, W.J., & Pangrazi, R.P. (2009). Step it up. *Journal of Physical Education, Recreation & Dance*, 80(1), 22-24.

### Formula: Determine exercise intensity by dividing number of steps by time.

**Step 1:** Measure the time of exercise or physical activity. (Time of exercise or physical activity is 30 minutes.)

**Step 2:** Use the pedometer to track how many steps are taken. (Total number of steps taken is 4,000.)

**Step 3:** Calculate exercise intensity using this formula: steps taken ÷ minutes of exercise = steps per minute. *Example:* You take 4,000 steps over 30 minutes; so, 4,000 steps ÷ 30 minutes = 133 steps per minute.

**Step 4:** Calculate your own exercise intensity using the formula, perhaps involving a parent or guardian.

**Step 5:** Record your steps per minute on your physical activity log.

### Instructions

Use the stopwatch to track your time as the thrower and catcher. Also, record your total steps in each role. Clear the pedometer of steps when you switch roles, if possible. Otherwise, track your steps so that you know how many you took for each activity.

### Practice Schedule

Warm-up: Stand close to each other and throw your object back and forth while you warm up your throwing muscles.

Practice the following throws randomly, with the thrower choosing which patterns the catcher will take. Attempt each throw about three or four times before trading off with your partner. (Adjust based on allotted class time.) The thrower stays stationary, while the catcher moves.

### Throws (Hichwa, 1998):

- Catcher fakes one way and moves the other way.
- Willie Mays catch: Catcher catches the ball on the run and over the shoulder.
- The long pass: Thrower throws the ball as far as possible, and the catcher catches it on the run.

### Record the following:

Student 1: Name: \_\_\_\_\_

Time throwing: \_\_\_\_ Steps taken: \_\_\_\_ Steps per minute: \_\_\_\_ Moderate/Vigorous (circle): Yes No

Time catching: \_\_\_\_ Steps taken: \_\_\_\_ Steps per minute: \_\_\_\_ Moderate/Vigorous (circle): Yes No

Student 2: Name: \_\_\_\_\_

Time throwing: \_\_\_\_ Steps taken: \_\_\_\_ Steps per minute: \_\_\_\_ Moderate/Vigorous (circle): Yes No

Time catching: \_\_\_\_ Steps taken: \_\_\_\_ Steps per minute: \_\_\_\_ Moderate to vigorous (circle): Yes No

From R.J. Doan, L.C. MacDonald, and S. Chepko, eds., 2017, *Lesson planning for middle school physical education* (Reston, VA: SHAPE America; Champaign, IL: Human Kinetics).