

LESSON 1: MUSCULAR STRENGTH AND ENDURANCE STATIONS

Grade-Level Outcomes

Primary Outcome

Engages in physical activity: Plans and implements a program of cross-training to include aerobic, strength & endurance and flexibility training. (S3.M4.8)

Embedded Outcomes

Nutrition: Describes the relationship between poor nutrition and health risk factors. (S3.M17.8)

Fitness knowledge: Participates in moderate to vigorous aerobic and/or muscle- and bone-strengthening physical activity for at least 60 minutes per day at least 5 times a week. (S3.M6.8)

Lesson Objectives

The learner will:

- reflect on and discuss the importance and benefits of physical activity.
- record aerobic activities in which she participates during the week outside of class.
- compare her activity level to physical activity guidelines for aerobic activity.
- make a basic plan for aerobic activity participation outside of class that meets the physical activity guidelines based on frequency.
- review and practice muscular strength and endurance (MSE) exercises.

Equipment and Materials

- Copies of the Physical Activity Questionnaire for Older Children (PAQ-C, for children 8 to 14 years of age)
- Copies of weekday and weekend physical activity logs
- Clipboards
- Resistance bands
- Sand bells
- Hand weights
- Aerobic steps
- Cones
- Shoulder folders for station cards
- Station cards
- Index cards
- Pencils
- Whiteboard easel
- Video device for peer evaluations

Introduction

Today, we start work on implementing a basic cross-training plan that will include aerobic fitness, muscular strength and muscular endurance, and flexibility training. During class, we'll focus on muscular strength and endurance, but you will need to include the aerobic and flexibility component outside of class. You will track your activities in a log (or by using a device) that you will bring to class every day. The goal is to meet physical activity guidelines in aerobic and muscle- and bone-strengthening activities.

These lessons will challenge you to integrate physical activity into your daily life in a meaningful way.

EMBEDDED OUTCOME: S3.M6.8. During class, focus on muscular strength and endurance. Students will track their activities in a log (or by using a device) that they will bring to class every day.

Instructional Task: Discussion on Importance and Benefits of Physical Activity

■ PRACTICE TASK

Give a PowerPoint presentation on the importance and benefits of physical activity, covering material not mentioned in the class discussion.

Guiding questions for students:

- What is the importance of physical activity?
- What are some benefits of physical activity?
- Why is it important to be physically active as teenagers?

Extension

The discussion can move into recommendations for physical activity.

EMBEDDED OUTCOME: S3.M17.8. Students describe the relationship between poor nutrition and health risk factors (especially with regard to physical activity).

Student Choices/Differentiation

- Students select own partners to discuss with.
- Videos and handouts can reinforce material.

What to Look For

Students' ability to come up with the importance and benefits of physical activity.

Instructional Task: Muscular Strength and Endurance Stations

■ PRACTICE TASK

After a proper warm-up, students rotate through various muscular strength and endurance stations (bench press, standing press, biceps curl, reverse lunge, calf raise, upright row, bent-over row, and abdominal curl-up) focusing on major muscle groups of the body, performing one set of 6 to 15 repetitions.

Extensions

- If time permits, a second set can be included.
- Peers can use a video device and a checklist to assess correct form at each of the stations.

Refinement

Refine any of the skills in the stations as needed.

Student Choices/Differentiation

Students can choose 10 to 20 repetitions. (Note: since there is not consensus in the field as to the optimal number of reps for resistance training with middle school aged children.)

What to Look For

- Students are using proper form.
- Students are following the instructions on the station cards.

Instructional Task: Aerobic Activity Recall

■ PRACTICE TASK

On the whiteboard easel, write the following guideline for children and adolescents: Aerobic: Most of the 60 minutes or more a day should be either moderate- or vigorous-intensity aerobic physical activity, and should include vigorous-intensity physical activity at least three days a week.

Students write down on an index card the aerobic physical activity they participated in last week. They should include the amount of time for each activity.

Students compare their physical activity to the guideline.

Extension

On the back of the card, students write a basic plan to either maintain or meet the guideline for the upcoming weeks.

Refinement

Make sure students are choosing aerobic activities (moderate or vigorous).

Student Choices/Differentiation

- Students can choose various aerobic physical activities in their basic plans.
- Have examples for students to view if needed.

What to Look For

- Students are identifying aerobic activities of moderate or vigorous intensity.
- Students are writing a realistic plan based on their current fitness level and current participation in physical activity.

Instructional Task: Physical Activity Log

■ PRACTICE TASK

Distribute and go over the log students will be using to record their physical activity in class and outside of class.

Extensions

Provide a sample log for students to view.

Student Choices/Differentiation

Students can choose to use a device or app as a log instead.

What to Look For

Students are recording all of their in-class physical activity.

Formal and Informal Assessments

- Peer checklist: students' form at activity stations
- Exit slip: What is your definition of aerobic activity?

Closure

Today, our focus was on muscular strength and endurance activities. These types of activities typically do not burn a huge number of Calories, and additional physical activity is necessary outside of class.

- What will you do to make sure that you get enough physical activity today?
- What was your favorite station? Why?
- What was your least favorite station? Why?

Reflection

- Do students have a good understanding of the importance and benefits of physical activity?
- Will students need additional explanations on how to complete the physical activity log?
- Do students have a general understanding of aerobic activities?

Homework

For homework, you will complete a physical activity questionnaire called the PAQ-C. Instructions on how to complete this questionnaire can be found on the school's physical education website.

In addition, you will take home your weekday PA log and add additional activities you have participated in or will participate in. Try to participate in moderate to vigorous aerobic and muscle- and bone-strengthening physical activity for at least 60 minutes per day, at least five times a week.

Resources

Kowalski, K., Crocker, P., & Donen, R. (2004). *The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescents (PAQ-A) manual*. Saskatoon: University of Saskatchewan College of Kinesiology.

U.S. Department of Health and Human Services. (2008). *Physical activity guidelines for Americans*. Washington, DC: Author. Available at www.health.gov.

SELF-ASSESSMENT OF PHYSICAL ACTIVITY PATTERNS OUTSIDE OF PHYSICAL EDUCATION CLASS

Directions: Review your two-week physical activity log and observe your physical activity patterns. Focus on the physical activity that you participated in outside of physical education class.

1. Did you participate in physical activity three or more times, per week outside of physical education class? Circle: Yes No
2. If yes, list the types of physical activity you did for the two weeks outside of physical education class.
3. If no, what can you do to increase the number of times you participate in physical activity outside of physical education class?

WEEKDAY PHYSICAL ACTIVITY LOG

Name: _____ Period (circle): 1 2 3 4 5 6

Date: ____/____/____

Day of the week (circle): M T W Th F

Part of day	Activities	Time (min)	Easily measurable? (circle)	Calories	Intensity	Comments (technology or app used, how did you feel?, with whom did you participate?, etc.)
Before school			Yes/No			
Nutrition (morning) break			Yes/No			
Lunch break			Yes/No			
In-class physical activity break (If so, list classes)			Yes/No			
Physical education class			Yes/No			
After school			Yes/No			

WEEKEND PHYSICAL ACTIVITY LOG

Name: _____ Period (circle): 1 2 3 4 5 6

Weekend dates: _____

Saturday

Part of day	Activities	Time (min)	Easy to measure? (circle)	Calories	Intensity	Comments (technology or app used, how did you feel?, with whom did you participate?, etc.)
Morning			Yes/No			
Afternoon			Yes/No			
Evening			Yes/No			

Totals

Total number of activities: _____

Total time (min): _____

How many of the activities were easy to measure? _____

Total number of calories expended: _____

Sunday

Part of day	Activities	Time (min)	Easy to measure? (circle)	Calories	Intensity	Comments (technology or app used, how did you feel?, with whom did you participate?, etc.)
Morning			Yes/No			
Afternoon			Yes/No			
Evening			Yes/No			

Totals

Total number of activities: _____

Total time (min): _____

How many of the activities were easy to measure? _____

Total number of calories expended: _____

Scoring Guide

Criteria for competence:

1. Lists physical activity.
2. Records time for physical activity.
3. Considers if PA was easily measured.
4. Records Calories (kcal) if easily measured.
5. Includes a measure of exercise intensity.
6. Sums the total time spent in the activity.
7. Considers if activity was easily measured.
8. Includes a total for the number of Calories (kcal).

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).

SAMPLE STATION CARDS

Bench Press

- Lie down, face up, on a stack of aerobic steps.
- Use either hand weights or sand bells.
- Extend your arms straight up to full extension.



Standing Press

- Standing straight up, lift either hand weights or sand bells straight up (over your head).
- Arms should be extended fully.



Biceps Curl

- Stand with your palms face up and lift either hand weights or sand bells.
- Curl weights up from your thighs to your chest.
- Keep your elbows in next to your body.



Reverse Lunge

- Stand with feet shoulder-width apart.
- Step backward with one foot and bend the knee of the other leg as you lower your body down; the knee of the back leg should almost touch the ground.
- Bring the back foot back up to the starting position and alternate legs. Hold hand weights or sand bells in your hands to increase resistance if needed.



Calf Raise

- Stand on the edge of an aerobic step on the balls of your feet.
- Hold hand weights or sand bells in your hands if needed.
- Lift your body by pointing your toes and contracting your calf muscles.



Upright Row

- Stand and hold hand weights or sand bells at your sides.
- Pull the weights straight up to the height of your chin using your shoulder muscles.



Bent-Over Row

- Stabilize yourself on a stack of aerobic steps (see picture).
- Hold a weight in one hand and lift it all the way up to your chest.
- Switch arms after completing one set.



Abdominal Curl-Up

- Lie on your back and bend your hips and knees.
- Your feet should be about 1 foot (30 cm) away from your buttocks.
- Hold your arms at your sides and curl up (lifting your shoulders and head off the ground).
- Use your abdominal muscles for this motion; do not lift all the way up (no sit-ups) to prevent hurting your tailbone.

