

LESSON 5: LOWER-BODY MACHINES

Grade-Level Outcomes

Primary Outcomes

Fitness activities: Demonstrates competency in 1 or more specialized skills in health-related fitness activities. (S1.H3.L1)

Fitness knowledge: Demonstrates appropriate technique on resistance-training machines and with free weights. (S3.H7.L1)

Fitness knowledge: Designs and implements a strength and conditioning program that develops balance in opposing muscle groups (agonist/antagonist) and supports a healthy, active lifestyle. (S3.H7.L2)

Safety: Applies best practices for participating safely in physical activity, exercise and dance (e.g., injury prevention, proper alignment, hydration, use of equipment, implementation of rules, sun protection). (S4.H5.L1)

Rules & etiquette: Exhibits proper etiquette, respect for others and teamwork while engaging in physical activity and/or social dance. (S4.H2.L1)

Embedded Outcomes

Working with others: Uses communication skills and strategies that promote team or group dynamics. (S4.H3.L1)

Movement concepts, principles & knowledge: Applies the terminology associated with exercise and participation in selected individual-performance activities, dance, net/wall games, target games, aquatics and/or outdoor pursuits appropriately. (S2.H1.L1)

Lesson Objectives

The learner will:

- demonstrate proper safety practices for using machines, spotting during free weights, and moving around the room during physical activity.
- exhibit proper etiquette in the gym.
- demonstrate proper form and technique for two different machines for the lower body.
- calculate the 10-rep-max weight a peer should use.
- identify lower-body exercises with agonist/antagonist pairings.

Equipment and Materials

- Copies of classroom rules and gym etiquette
- Lower-body exercise machines (identified by name)
- Peer assessment grading form and rubrics
- 10-rep-max progression worksheets
- Lifting straps
- Lifting belts

Introduction

How are you doing on your at-home resistance routine? In today's class, we'll start your introduction to the weight room, starting with machines for lower-body exercises. I will review safety procedures, provide directions on how to adjust the machines, give cues for performing the activities correctly, and identify common mistakes you might see along the way. In addition, you will determine your 10-repetition max for selected machines.

Instructional Task: Safety Demonstrations

■ PRACTICE TASK

Review basic safety precautions and spotting technique. Point out where errors in safety can occur. Students should practice spotting for a selected lift.

Refinement

Since not all students will be familiar with the equipment in the weight room, everyone should attempt to pick up the bars and plates so they get a feel for how much they weigh and the amount of effort needed to handle each piece and not drop it.

EMBEDDED OUTCOME: S4.H3.L1. Spotting is essential in lifting. Students should focus on safety and also building trust through clear and supportive communication.

Student Choices/Differentiation

Students choose their partners.

What to Look For

- Students are engaged in the discussion.
- Students are using correct spotting technique.
- Partners are communicating with each other.

Instructional Task: Gym Etiquette Demonstrations and Group Discussion

■ PRACTICE TASK

Go over the guidelines for etiquette and how they are applied while on the gym floor.

Guiding questions for students:

- What is etiquette?
- What is meant by the term *gym etiquette*?

Student Choices/Differentiation

Have examples ready for students to view.

What to Look For

- Students are identifying gym etiquette events and activities.
- Students are asking good questions.

Instructional Task: Demonstration of Proper Technique and Adjusting Machines

■ PRACTICE TASK

Demonstrate technique and machine adjustments for selected equipment.

Students rotate from station to station, practicing proper technique on lower-body machines with light resistance. Students should try machines for all major muscle groups. Stations can include leg extension, leg curl, leg press, calf press, hip adduction, hip abduction, hip flexion, and hip extension machines.

Students should focus on aligning their joints with the colored dots on the machines, making sure all adjusted seats and back rests are situated so there is no additional movement or space between the body and the pad.

Partners spot as needed.

Student Choices/Differentiation

- Experienced students may perform the exercises using free weights in place of machines.
- Inexperienced students may perform body-weight exercises if they are uncomfortable on the machines.
- Students choose their partners.

What to Look For

- Students are using proper technique and reviewing the safety components of each exercise.
- Students are adjusting the machines when needed.

Instructional Task: Predicting 10-Rep Max

■ PRACTICE TASK

Discuss the protocol for predicting max weight by using the 10-rep-max format. Students complete their dynamic warm-up routines before starting the 10-max-rep protocol.

Students follow the protocol for establishing a 10-max rep for the leg press and then cool down with their static stretching routines.

Refinement

Instruct students not to increase the weight too much from one set to the next. If the weight changes too much, it result in injury.

Student Choices/Differentiation

Students choose either the leg press or back squat for the test.

What to Look For

- Students supervise their peers and monitor for proper technique.
- Students use the protocol to proceed with the test.
- Students attempt to perform the exercise with maximum effort.

Instructional Task: Lower-Body Exercise Discussion

■ PRACTICE TASK

In pairs, students list all the lower-body machine exercises that might be included in a workout program, naming the exercises and the muscle groups that are worked.

Guiding questions for students:

- What are the benefits of using machines for resistance training as opposed to free weights?
- What are some of the disadvantages of using machines?
- Why is it important to know what your estimated max rep is?
- How can you implement the overload principle using machines?

EMBEDDED OUTCOME: S2.H1.L1 Once students create the list, have them group the exercises into pairs of exercises for opposing muscle groups (agonist/antagonist).

Student Choices/Differentiation

- Students choose their partners.
- Students decide which exercises to include.

What to Look For

- Students can identify the purpose of the different machines.
 - Students are able to group agonist/antagonist exercises correctly.
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Formal and Informal Assessments

- Discussion of gym etiquette and rules
- Student demonstration of appropriate technique for lower-body exercises
- Assessments of lower-body strength
- Exercise lists

Closure

- Today, we reviewed important safety practices and etiquette for the weight room.
- We examined a variety of lower-body exercises using machines and estimated your maximum strength in a safe manner.
- This process will be repeated using upper-body machines next.
- At the completion of these two lessons, you will have a greater understanding of the types of exercises you will want to include in your workout plans and programs.

Reflection

- Were students comfortable using free-weight exercises as opposed to the machines?
- Did students understand the overall benefit of the 10-rep max-format for safety?

Homework

- Taking your max-rep results into account, write down the exercises you might use for the muscle groups you think you need to strengthen.
- Record your body-weight exercise repetitions and exercises in a log. Include your physical activity outside of class.

Resources

Bompa, T. (2015). *Conditioning young athletes*. Champaign, IL: Human Kinetics.

School rules and policy for student behavior and conduct

Internet keyword search: “top 10 rules of lifting safety,” “weight-training and weight-lifting safety”