6th-8th Grade Lesson 6:
BALANCE

Overview

In this lesson, students will learn how proprioception, the vestibular system, and vision work together to keep the body upright and help prevent someone from falling over. All three systems integrate sensory information from the environment (sight, hearing, touch, joint position) to the brain. Then the brain sends messages to the muscles to contract or relax to help keep our body upright. For example, if we started to slip on ice, the brain would take that sensory stimulus and tell the leg muscles to contract in a way to help prevent us from falling. The activities portion teaches students about footwork and body position to best maintain balance. The activity portion starts with a general warm up using the "General Warm Up" video and is followed by the "Footwork Balance lesson" video. Following the video, the students will go through a final activity that combines all the different exercises that they have learned the past few weeks in the "Final Combined Activity" video.

Behavior Change Objective:

As a result of this lesson, students will be able to understand what balance is, how we become balanced, and why it is important. Students will be able to understand how the vestibular system integrates sensory information from the environment and sends messages via the nervous system to the muscles to respond appropriately.

Learning Objectives:

Students will be able to:

- Understand the role that senses play in relaying information about the environment to maintain balance.
- Understand how balance is involved in activities and ways one can improve balance.
- Know how to position one's body to prepare best for movement in a range of directions.

Keywords

Balance, Proprioception, Vestibular System

Educational Standards:

NJSLS for Comprehensive Health and Physical Education: 2.5.8.A.1; 2.5.8.A.2; 2.5.8.A.4
NHES: 1.8.5; 1.8.7; 6.8.2; 6.8.3; 6.8.4; 7.8.2

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Materials

- Videos & AV Equipment:
  - Balance: 4:22
  - General Warm-Up: 4:33
  - Footwork Balance Lesson Video: 5:53
  - Final Combined Activity Video: 4:43
- Water, comfortable clothing, sneakers

Before You Begin

- Ensure students have space to move and a wall they can bounce and kick a ball gently against
- Review entire lesson - look through and see appropriate places to pause the video and engage students with a question for students to answer in pairs, small groups, or to the whole class
- Review Classroom Management techniques (suggested tutorials below)
  - How to Handle an Out of Control Middle-School Classroom (start at 2:03)
  - How to Make a Noisy Class Quiet (start at 2:40)
  - SPARK Classroom Management Strategies – specific to PE classes
- Gather your materials
- Ensure students have space to move
- Set up AV equipment and provide space for film viewing.
- **TIP:** It is helpful to have the instructor model movements in between circulating, coaching, and cueing students

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Procedure

1. **Activate Prior Knowledge:** what do we need power for, what kinds of sports require coordination, etc.?
2. **Introduce the Lesson:** Today we are going to learn about a concept called "balance" and its role in protecting our body and helping us in activities.
    a. Show video entitled Balance (Video 1)
        i. Pre-Video Questions:
            1. What do you think of when you hear balance? Balance can mean a lot of different things, i.e., is your life in balance? Stress balance, the balance of a stack of objects, the balance of your body (prevention from falling)
            2. What activities require good balance?
            3. Now we are going to watch a video explaining what balance is in relation to movement. This video teaches students about the concept of balance and how the vestibular system integrates sensory information from the environment to help our bodies stay upright and avoid falling. It explains how balance is used in a variety of everyday activities along with different sports skills.
        ii. Post-Video Questions:
            1. Now that you have watched this video, can you think of specific sports or activities that require good balance? (Just about any sport requires balance)
            2. What other system besides the musculoskeletal system is needed to help maintain balance? (The vestibular system: visual/auditory/proprioception)
3. General Warm-Up (Video 2)
4. **Teaching/Skill:** Have students stand up, close their eyes, and try to feel where their body weight is over their feet. Use the following prompts for discussion:
    a. Do you notice your weight on one leg more than another?
    b. Is your weight more forwards over your toes or backward over your heels?
    c. Try shifting your weight forward, feel how your weight changes and how your muscles contract to support you
    d. What does your upper body do when you lean your hips forwards or backward?
    e. All of these movements require [our vestibular and proprioceptive systems] balance.
5. **Activity:** The next component will be a series of balancing activities. Each student will need some space to exercise (about 5-10 yards).
    a. Footwork Balance (Video 3). This video teaches students about the "ready position" which is important for all sports and activities. The students will also learn basic footwork so that they can transition from the ready position to moving forward, backward and side-to-side. The students will practice balance activities like standing on one leg. Then these concepts will be progressed to more dynamic activities like single-leg reaches, closed eye balancing, balancing while tossing a ball, double-leg forward and backward hops, side to side hops, single-leg forward and backward hops, and lateral skater hops.

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Procedure, cont.

b. Final Combined Activity (Video 4). This last activity integrates several of the exercises and skills that the students have learned about in previous lessons. It is set up as a "follow the leader" style where the instructor will demonstrate and call out different exercises for the students to follow along.

6. Cool Down - Yoga & Meditation

- Pre-Cool Down Question: why might it be important to do something like yoga or mindful breathing after a hard workout?

6th-8th Grade Lesson 6:
EXTENSION ACTIVITIES

Single Leg Balance

Sets: 2 **Reps:** 20-30" **Resistance:** -- **Hold:** -- **Rest:** -- **Times Per Day:** -- **Times Per Week:** --

Description: Begin in a standing position with your feet shoulder width apart. Lift single leg off of ground and hold this position for the duration indicated. You may alternate which foot you are balancing on as directed.

Tandem Balance

Sets: 2 **Reps:** 20-30" **Resistance:** -- **Hold:** -- **Rest:** -- **Times Per Day:** -- **Times Per Week:** --

Description: Begin in a standing position with your feet shoulder width apart. Place one foot in front of the other so the toes of one foot touch the heel of your opposite foot. Maintain your balance in this position for indicated duration. You may alternate which foot is placed in front as directed.

Single Leg Balance on Pillow

Sets: 3 **Reps:** 10" **Resistance:** -- **Hold:** -- **Rest:** -- **Times Per Day:** -- **Times Per Week:** --

Description: Begin by stepping onto pillow with feet shoulder width apart. Slowly raise one leg, maintaining balance on affected leg for as long as possible. Repeat as directed.

Single Leg Balance with Ball Toss

Sets: 2 **Reps:** 10 **Resistance:** -- **Hold:** -- **Rest:** -- **Times Per Day:** -- **Times Per Week:** --

Description: Begin in a standing position with your feet shoulder width apart. Lift single leg off of ground. While balancing toss ball back and forth while maintaining the single leg balance for the indicated duration. You may alternate which foot you are balancing on as directed.

Walk on Balance Beam

Sets: 2 **Reps:** 10 **Resistance:** -- **Hold:** -- **Rest:** -- **Times Per Day:** -- **Times Per Week:** --

Description: Begin by standing in front of balance beam. Step onto beam and slowly walk across while maintaining your balance. Once at end turn around and repeat in opposite direction. Continue as directed.

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