



**Figure 11.2**

## Sample Lesson Plan

Outline		
10 min	Warm-up	<b>Cool-down</b> <b>Upper-body flexibility</b> <ul style="list-style-type: none"><li>• Chin-to-chest stretch</li><li>• Neck rotation</li><li>• Neck side stretch</li><li>• Shoulder roll</li><li>• Chest stretch</li><li>• Lateral shoulder stretch</li><li>• Trunk rotation</li></ul> <b>Lower-body flexibility</b> <ul style="list-style-type: none"><li>• Ankle circle</li><li>• Calf stretch</li><li>• Hamstrings stretch</li></ul> <b>Breathing and relaxation</b> <b>Homework assignment</b>
10 min	MST somatosensory	
10 min	• Seated balance with voluntary arm movements	
	• Seated balance with voluntary trunk movements	
	GPEV	
10 min	• Introduction to walking pattern	
	• Walking with directional changes and abrupt starts and stops	
	• Walking with altered base of support	
10 min	PST	
10 min	• Voluntary ankle strategy	
	Strength	
10 min	• Seated lower body	
	Cool-down	

### Warm-up

Select appropriate warm-up exercises that can be performed while seated and standing. Emphasize large body movements that are rhythmic and continuous.

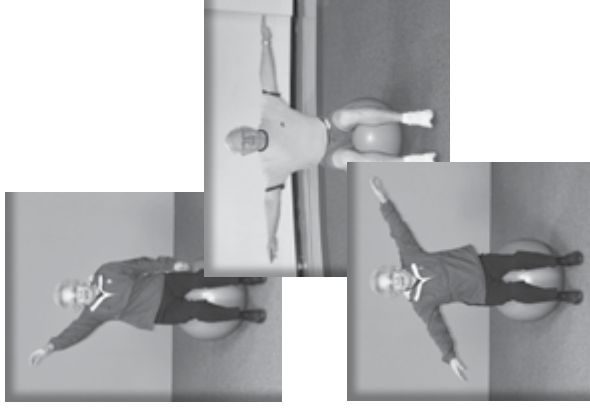


## MST somatosensory

All COG activities to be performed with vision distracted, reduced, or removed. All cues must focus on somatosensory inputs.

### Seated balance with voluntary arm movements (level 2)

- ☐ Single arm-raise
  - Raise one arm to as close to a vertical position as possible. Inhale.
  - Hold for 3 slow counts, then lower the arm back down to the starting position. Exhale.
  - Repeat with the opposite arm.
  - Perform three repetitions each side.
- ☐ Double-arm raise
  - With palms down, raise both arms up to a lateral and horizontal position and hold for 3 counts. Inhale.
  - Turn the palms up and continue raising the arms until they reach a vertical position with palms. Exhale.



## Cues

- Sit tall on the ball or chair.
- Can you sense that your ears are directly above your shoulders?
- Can you sense that your shoulders are directly above your hips?
- Can you feel that you have equal weight on both sides of your buttocks?
- Can you sense the angle of your knees?
- Can you feel your feet in contact with the floor?
- Can you feel that the pressure is evenly distributed under both feet?
- Does the pressure change under your feet or your seat when you lift the arm?

## Challenges

- Reduce vision by lowering lights or wearing dark glasses.
- Remove vision by turning off all the lights or closing eyes.
- Engage vision by asking participants to read aloud or reach for and catch objects.
- Distract vision by performing activities in front of a busy visual pattern or by moving a busy pattern through the visual field.

## Key Point

There are several available clinical and field tests that provide valid and reliable information, require little or no equipment, and are quick and easy to administer in community-based settings.

## MST somatosensory

### Seated balance with voluntary trunk movements (level 3)

- ☐ Lateral trunk rotation
  - Rotate the trunk *slowly* to one side, keeping the hips directed forward.
  - Try to look over turning shoulder at the wall behind.
  - Hold position for 3 counts, then return to the starting position at midline. Repeat in the opposite lateral direction.
  - Perform three repetitions each side.
- ☐ Trunk lean in forward and backward directions
  - Lean the trunk forward, beginning at the hips until the nose is above the knees.
  - Maintain an extended upper-body position throughout the lean.
  - Hold for 3 counts, then return to an upright starting position.
  - Lean the trunk backward while keeping the upper body extended.
  - Hold for 3 counts, then return to an upright starting position.
  - Perform three repetitions each.
- ☐ Trunk lean in a diagonal forward and backward direction
  - Lean the trunk diagonally forward until the nose is above one knee.
  - Maintain the upper body in an extended position throughout the lean.
  - Hold for 3 counts, then return to an upright starting position.
  - Repeat the movement in the opposite forward diagonal direction.
  - Repeat the diagonal trunk movements to both sides of the body but now lean the trunk in a backward direction.
  - Perform three repetitions each.



## Verbal Cues for Lateral Direction

- Feel the pressure increase under the foot on the side opposite to the rotation.
- Feel the tension increase in the leg on the side opposite to the rotation.
- Can you feel a change in the weight on either side of your buttocks?

## Verbal Cues for Forward and Backward Direction

- Feel the pressure increase under the front of both feet as you lean forward.
- Feel the pressure move to the heels as you lean backward.
- Does the pressure under the buttocks change?
- Can you feel a difference in the tension in your thighs?

## Verbal Cues for Diagonal Direction

- Feel the pressure increase under the foot and in the leg of the side to which you lean.
- Feel the pressure move to the heels as you lean backward.
- Can you feel a difference in the tension in your thighs?
- Where do you feel pressure in the buttocks as you move diagonally backward?

## GPEV

- ☐ Introduction to walking pattern
- ☐ Walking with directional changes and abrupt starts and stops (level 1)
  - Have participants walk when cued (verbal, whistle, music) and stop when cued.
  - Have participants change direction on verbal or sound command.
  - Ask them to make a quarter turn, followed by a half turn and finally a full turn.
- ☐ Walking with altered base of support (level 2)

- Narrow step walking with 2 in. (5 cm) lines (one foot along each line).
- Wide step walking with 8-12 in. (20-30 cm) lines.
- Combined narrow and wide step walking.
- Increase or decrease number of steps per gait pattern to match individual abilities.
- Step-to walking. Move forward, taking a long step with one leg and bring the other leg up with the first leg. Repeat with other leg leading.
- Forward heel walking.
- Forward toe walking.
- Combination toe and heel walking.



## PST

- ☐ Voluntary ankle strategy (level 1)
  - Sway slowly forward and backward between two tactile cues (i.e., chairs).
  - Use a metronome or slow hand clap to change pace.
  - Repeat with eyes closed.
  - Repeat without tactile cues.
  - Repeat without tactile cues, eyes closed.



## Verbal Cues for Walking Pattern

- Walk tall with your head erect and your ears directly above your shoulders.
- Focus your eyes on a target directly in front of you and walk directly toward it.
- Feel the heel make contact with the floor first followed by pressure rolled up on to the toes as you push off from floor (unless toe walking).

## Verbal Cues for Voluntary Ankle Strategy

- Feel the pressure increase under the toes as you lean forward and under the heels as you lean backward.
- Feel each toe contacting the floor.
- When eyes are open, keep your eyes focused forward on a visual target at eye level.
- Do not perform exercises with eyes closed if you are unable to perform successfully with eyes open.

## Strength

### Seated lower body

- ☐ Seated hip abduction
  - Sit tall and position the feet flat on the floor and hip-width apart.
  - Wrap a resistance band once or twice around the thighs of both legs and hold the ends firmly against the thighs. Inhale.
  - Exhale and push the outside of the thighs against the band.
  - Inhale and slowly move the thighs back to the starting position.
  - Complete 5 to 8 repetitions. Increase the resistance as practice progresses.
- ☐ Toe pointing and flexion
  - Sit upright toward the front edge of a chair, keeping the trunk erect.
  - Wrap a resistance band once around the right foot, keeping the left knee flexed and the right knee extended.
  - Maintaining the tension on the band, slowly point and flex the toes.
  - Complete 5 to 10 repetitions before performing with the opposite leg.
- ☐ Seated leg extension
  - Sit tall on a ball or chair, and press the lower back firmly against the backrest if using a chair. Tuck in the abdomen and chin, and look directly ahead. Inhale.
  - Hold onto the side of the ball and tighten the muscles in the leg.
  - Extend one leg and raise it to an angle of approximately 90 degrees to the floor. Flex the ankle and point the toes toward the ceiling as the leg is raised. Exhale during the lifting phase.
  - Slowly lower the leg to the starting position. Inhale as the leg is lowered.
  - Complete 5 to 10 repetitions are before repeating the exercise with the opposite leg.
  - Add ankle weight to increase the resistance once the movement can be performed correctly and 10 repetitions are successfully completed with each leg.

## Verbal Cues

- Sit tall on chair or ball with back straight.
- Exhale as you move into the lifting phase of each exercise.



## Strength

### Seated lower body

#### ☐ Sit-to-standing squat

- Sit tall while pressing the lower back firmly against the backrest of a chair. Tuck in the abdomen and chin and hold the head erect with the eyes directed forward. The feet should be flat on the floor and hip-width apart. Inhale.
- Stand up from the chair, lifting the body about two-thirds of the way up. Exhale as the body is lifted.
- Keep the back straight and the knees slightly behind or directly above the ankles.
- Hold the position for 3 to 5 sec and then slowly return to the original seated position.
- Repeat the exercise 5 to 10 times.

## Verbal Cues

- Keep your body straight as you lift your toes.
- Feel the contraction along your shin.
- Feel the tension increase in the thighs as you lower the hips.



## Cool-down

- ☐ Upper-body flexibility
  - Chin-to-chest stretch
  - Neck rotation
  - Neck side stretch
  - Shoulder roll
  - Chest stretch
  - Lateral shoulder stretch
  - Trunk rotation



- ☐ Lower-body flexibility
  - Ankle circle
  - Calf stretch
  - Hamstrings stretch



## Verbal Cues

- ☐ Breathing and relaxation
- ☐ Homework assignment
  - Sit tall on chair with back straight.
  - Exhale as you move into each stretch, and inhale as you return to starting position.
  - For upper body, keep shoulders down and square to front.
  - Hold stretches for 60 sec.
  - For hamstrings stretch, move the torso forward from the hips, so the back remains straight. Keep the toes up and do not bend the knee.