

Module Three:

Components of Physical Fitness

Background Information

Physical fitness is defined as the capacity for the human body to function efficiently and effectively in a variety of activities. In order to reach optimal physical fitness one must do activities that include the five components of physical fitness. These five components include aerobic capacity, flexibility, muscle strength, muscle endurance, and body composition.

Aerobic capacity is the ability of the heart and lungs to deliver oxygen to the muscles and is an important component of physical fitness because muscles need oxygen to generate energy for movement. Activities that build aerobic capacity, like running and bicycling, tend to increase heart rate and breathing rate.

Flexibility is the range of motion that is possible across joints in the body and varies between individuals. Stretching and yoga are exercises that can improve flexibility.

Muscular strength is the ability to push or pull against something and is important for many different things in daily life as well as being able to perform exercises. Activities like push-ups and squats can help build muscle strength.

Muscular endurance is the ability to do repetitive movements using muscles many times without fatigue and the ability to hold muscles in a fixed position for a long time. Activities like push-ups, squats, and planks are examples of exercises that can help build muscular endurance. Although strength and endurance are different components of physical fitness, muscular strength and muscular endurance can often be improved by doing the same types of activities.

Body composition is the amounts of fat, muscle, and bone that make up a person's body. This component of physical fitness is typically estimated by calculating a youth's body mass index (BMI). Any activity can have a beneficial effect on body composition.

Activity 3.1 : Classroom Activity

Time Required
60 to 75 mins

Suggested Groupings
Small teams of 3 to 4

- Materials Needed
- Flip chart paper, one for each team
- Markers or writing utensils, one for each youth
- Four yardsticks
- Masking tape
- Stopwatches, one for each team
- *Activity Cards (Appendix 3A)
- *Team Observations (Appendix 3B)
- *Average Team Heart Rate Graph (Appendix 3C)
- *Components of Physical Fitness (Appendix 3D)
- *Improper Form Guide (Appendix 3E)
- *Warm-Up Activity (Appendix 3F)
- Pedometers or physical activity monitors (optional)

Concepts and Vocabulary

- **Aerobic capacity:** the ability of the heart and lungs to get oxygen to the muscles
- **Body composition:** the amounts of fat, muscle, and bone that make up a person's body
- **Flexibility:** the range of motion possible at a joint
- **Joint:** a spot where two or more bones in the body meet that allows movement
- **Muscular endurance:** the ability to use muscles many times without getting tired or the ability to hold muscles in a fixed position for a long time
- **Muscular strength:** the ability of muscles to push or pull against something
- **Physical fitness:** the capacity for the human body to function efficiently and effectively in a variety of activities

Getting Ready

1. Make copies of Activity Cards (Appendix 3A), one set for each team.
2. Make copies of Team Observations (Appendix 3B), one for each team and one for the facilitator to reference.
3. Make copies of Average Team Heart Rate Bar Graph (Appendix 3C), one for each team.
4. Make copies of Components of Physical Fitness (Appendix 3D), one for each team.
5. Set up a designated spot for youth to do the sit and reach. Place the yardsticks on the ground at least three feet apart. Position the yardsticks on the ground with the 0 closest to you and tape them to the ground by placing masking tape across the yardstick at the 15-inch mark. Position them far enough apart so that the teams of youth can be at each yardstick at one time.

6. Optional: provide each youth with a pedometer or physical activity monitor. Explain to the youth they can use these devices to track the amount of physical activity.

7. Organize the class into small teams of 3 to 4 youths.



Facilitator tip: These can be the same teams that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same team members.

8. Provide each team with a sheet of flip chart paper and markers to answer opening questions.

Journal Review

1. Have the youth share their completed Module 2 journal reflections (Journal Page 8).

2. Follow the youth's lines of thinking developed through their thoughts and observations. If necessary, ask more targeted questions/prompts:

- Explain what you noticed about the physical activity that you graphed.
- Describe the amount of physical activity that your family members need.
- Explain how you went about deciding the types of activities you can do in the next week to increase your physical activity.

Opening Questions

- Explain what you know about the benefits of physical activity.
- Explain what you know about physical fitness.

Procedure (Experiencing)

1. Explain to the youth that they will be investigating different components of physical fitness.

2. Provide each team with a stopwatch, one set of the Activity Cards, and one copy of the Team Observations.

3. Explain to the youth that they will begin with the first part of the activity, which is called "Resting." Explain that we are considered to be resting when we are not doing any physical activity. Ask the youth to sit down and be quiet for a few minutes so that they can measure their resting heart rate.

4. Ask the youth to find their pulses and record that under “Resting” on the Team Observations sheet. Ask the youth to count the number of pulses they feel for 6 seconds. Using a clock with a second hand or a stopwatch, tell the youth when to start and stop. To find the number of beats per minute, have them multiply that number by 10. This number is their heart rate. Have them record their heart rate on the Observation Sheet.



Facilitator’s tip: The youth may need a reminder of how to measure their pulses in order to determine their heart rates. Note: Pulses can be found by using the tips of the index and middle fingers of the left hand and pressing gently on the left side of the throat, just below the jaw; or by placing the tips of the index and middle fingers of their right hand on the inside of their left wrist below their left thumb. Refer to Diagram to Find Pulse (Appendix 1B).

5. Introduce the activities on the Activity Cards. Explain that the youth will complete all four activities and collect data for each one. Each activity card has information about what to measure. After each activity is completed, the youth will record the data they collected on the Team Observations worksheet.

6. Ask the teams to select one person to be responsible for keeping time with the stopwatch or keeping count of repetitions as stated on the Activities Cards. Ask them to also select a person to be responsible for recording the measurements on the Team Observations sheet. The remaining team members will perform the activity on the card while the person with the stopwatch keeps track of time or repetitions and the recorder will write down the measurements. After the first members complete the activities, the team members will switch roles so that all youth complete the activity. The youth who were performing the activity will become the recorder and timekeeper and the youth who were responsible for keeping time and recording will then perform the activity.

7. Ask the youth to form a large circle. Each youth should be standing and be able to extend their arms to their sides without touching the person next to them.

8. Lead the youth through the Warm-Up Activities (Appendix 3F) before starting the activities. Complete the exercises in order, 1-3. As you begin the warm-up, explain to the youth that doing warm-ups before engaging in physical activity increases our blood flow and raises our body temperature. Doing these warm-up exercises before engaging in physical activity helps to prevent injuries.

9. Tell the youth to begin performing the activities and collecting the data that is listed on the Activity Cards. Observe youths while they perform the activities. Correct improper form of the activities using the Improper Form Guide (Appendix 3E) as a reference.

10. After the youth have completed the activities and collected the data, ask the youth to calculate team averages for activity measurements and heart rates and record them on the Team Observations worksheet. Encourage youth to use their flip chart paper to carry out their calculations.

11. Provide each team with a copy of the Average Team Heart Rate Graph and ask them to graph their average team heart rates for resting and each activity.

12. Give each team a copy of the Components of Physical Fitness and ask teams to review the handout together.

13. Explain to the youth that the activities they just experienced represent the five components of physical fitness. Then ask the teams to use their data and handout to determine which of the five components match the activities. Teams should record their choices in the “Components of Physical Fitness” section of their Team Observations worksheets.

Sharing, Processing, and Generalizing

- Have the youth share the data they collected on the Team Observations worksheet and the Average Team Heart Rate Graph. Ask them to describe which components of physical fitness they identified for each activity on the worksheet.
- Follow the lines of thinking developed through the youth’s thoughts, observations, and questions. If necessary, ask more targeted questions.
 - o Describe the similarities and differences you noticed about the data you collected between resting and the different activities.
 - o Explain what you noticed about the similarities and differences between the components of physical fitness.

Concept and Term Discovery/Introduction

Youth should understand that in order to be physically fit we need to do physical activity that represents all five components of physical fitness, including aerobic capacity, muscular strength, muscular endurance, flexibility, and body composition. Youth should also recognize that the activities can be categorized into multiple components of physical fitness and that all physical activity contributes to body composition.

Activity 3.2 : Journal Activity

Time Required
10-15 mins

Materials Needed

1. *Healthy Choices in Motion Journal (Appendix 1F)

Concepts and Vocabulary

- **Aerobic capacity:** the ability of the heart and lungs to get oxygen to the muscles
- **Body composition:** the amounts of fat, muscle, and bone that make up a person's body
- **Flexibility:** the range of motion possible at a joint
- **Joint:** a spot where two or more bones in the body meet that allows movement
- **Muscular endurance:** the ability to use muscles many times without getting tired or the ability to hold muscles in a fixed position for a long time
- **Muscular strength:** the ability of muscles to push or pull against something
- **Physical fitness:** ability for the human body to function efficiently and effectively in a variety of activities.

Procedure (Experiencing)

1. Ask the youth to refer to their Healthy Choices in Motion Journal.
2. Explain to the youth that they will use this journal to record and reflect on their physical activity by recording the minutes of activity every day. Optional: provide the youth with pedometers or physical activity monitors. Ask them to use the data collected by these devices (steps/minutes/distance) to track and monitor physical activity in their journal.
3. Explain that after tracking the activity for the week the youth will complete the questions at the end. Explain that they will use the data they recorded to create a graph of the physical activity they did over the course of one week, to reflect on their progress, and set goals for the next week.
4. Ask the youths to bring their journals to class with the Module 3 section completed and share their graphs and their answers to the questions.

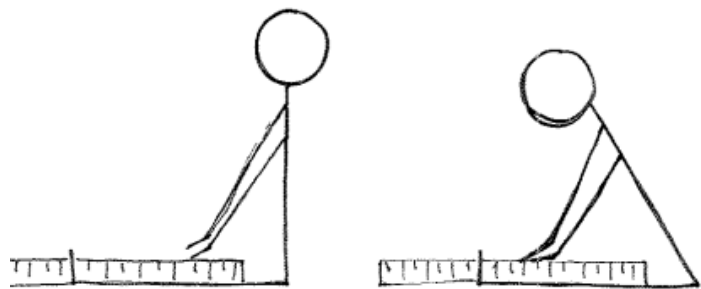


Facilitator Tip: Sharing their journal recordings can be done as a way to review the content before facilitating Classroom Activity 4.1.

Sit and Reach

How to do the sit and reach:

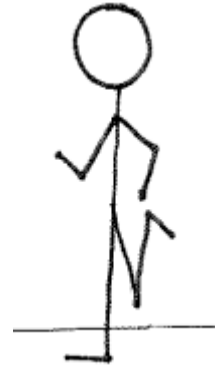
1. At the 0 end of the yardstick, sit on the ground with your legs extended out in front of you with your feet on either side of the yardstick so that your heels line up with the tape on the yardstick.
2. Extend your arms out in front of you and place one hand on top of the other so that your middle fingers are lined up.
3. With your toes pointed up and without bending your knees, reach forward as far as you can along the yardstick.
4. Hold this position while your teammate records the distance on the Team Observations worksheet.
5. After you complete the sit and reach: Using the stopwatch, find your **heart rate** and record it on the Team Observations worksheet.



High Heel Run

How to do the high heel run:

1. Stand with your legs shoulder-width apart.
2. When ready to begin, ask your teammate to start the stopwatch.
3. Bend your left knee and leg back so your heel touches your behind, as shown to the right.
4. Return your left foot to the ground.
5. Bend your right knee and leg back so your heel touches your behind.
6. Return your right foot to the ground.
7. Do steps 2-5 over and over as quick as you can. This should feel like you are running in place.
8. Continue doing the high heel run for as long as you can, but stop if you get to 60 seconds. Your teammate should stop the stopwatch when you stop running.
9. **Record your time** on the Team Observations worksheet.
10. **After completing the high heel run: Using the stopwatch, find your heart rate and record it on the Team Observations worksheet.**



Push Ups

How to do a push up:

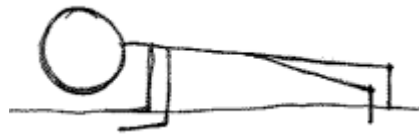
1. On the ground, stretch your arms straight down in front of you with your shoulders over your wrists.
2. Straighten your legs out and dig your toes into the ground, as shown in Position 1.
3. Lower your upper body down by bending your elbows until they form an L shape, as shown in Position 2.
4. Raise yourself back up to Position 1 by pushing against the ground.
5. Repeat steps 5 and 6, taking your time.
6. Do as many push-ups as you can.
7. **Record how many you did** on the Team Observations worksheet.
8. **After you complete the push-ups: Using the stopwatch, find your heart rate and record it on the Team Observations worksheet.**



Plank

How to do a plank:

1. Put your elbows down on the ground and bend them into an L shape.
2. Resting your weight on your forearms, stretch your legs back and dig your toes into the ground, as shown below. Your teammate should start the stopwatch once you are in the correct position.
3. Your body should be in a straight line with your shoulders over your elbows.
4. Hold this position for as long as you can. Your teammate should stop the stopwatch when you fall out of position.
5. **Record your time** on the Team Observations worksheet.
6. **After you complete the plank:** Using the stopwatch, find your **heart rate** and record it on the Team Observations worksheet.

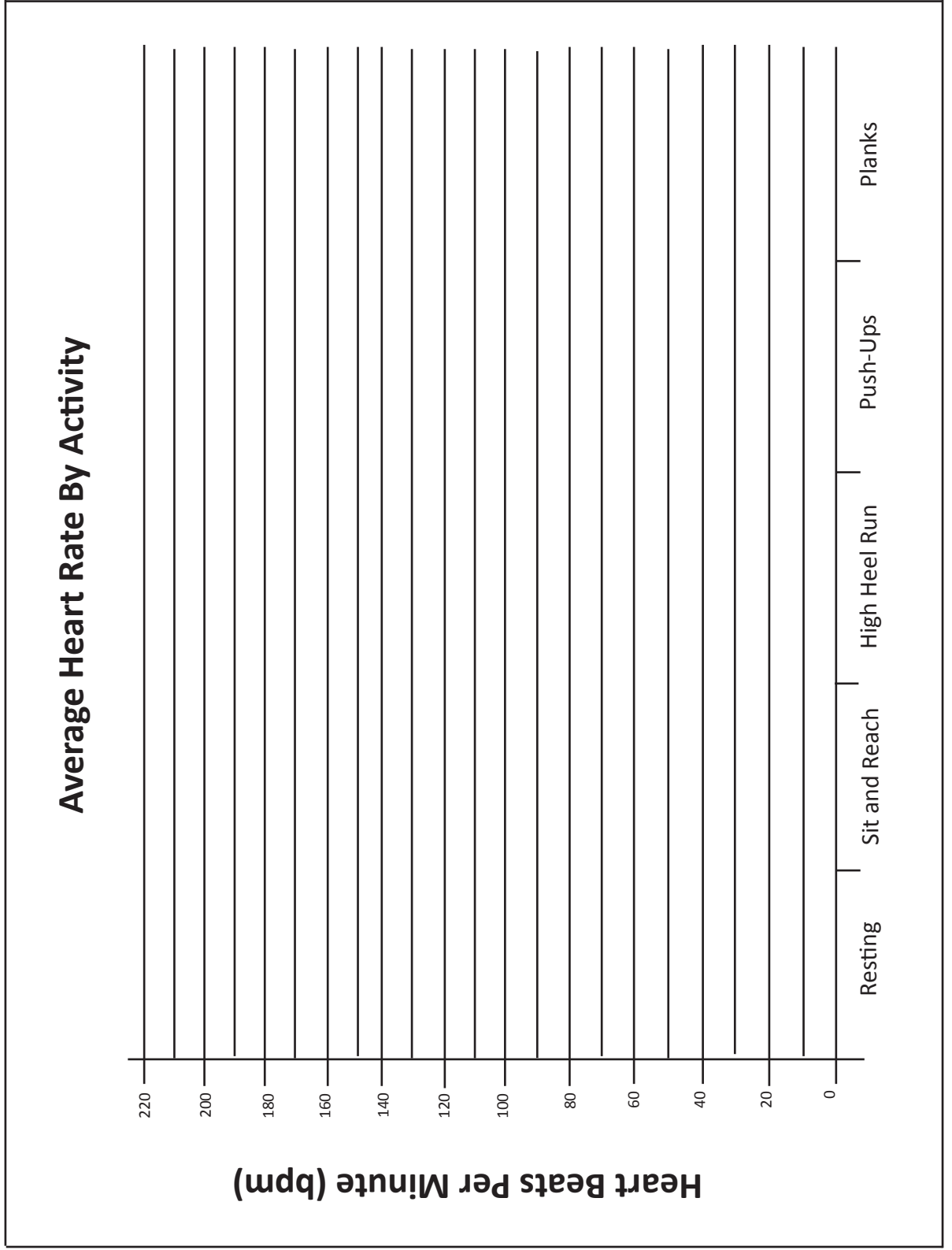


Resting			Heart Rate	Average Heart Rate	
	Distance	Average Distance			
Sit and Reach	Person 1.		Person 1.	Average Heart Rate	Components of Physical Fitness
	Person 2.		Person 2.		
	Person 3.		Person 3.		
	Person 4.		Person 4.		
High Heel Run	Time	Average Time	Heart Rate	Average Heart Rate	Components of Physical Fitness
	Person 1.		Person 1.	Average Heart Rate	Components of Physical Fitness
	Person 2.		Person 2.		
	Person 3.		Person 3.		
Person 4.		Person 4.			
Push-Ups	Total number of push-ups	Average Number	Heart Rate	Average Heart Rate	Components of Physical Fitness
	Person 1.		Person 1.	Average Heart Rate	Components of Physical Fitness
	Person 2.		Person 2.		
	Person 3.		Person 3.		
Person 4.		Person 4.			
Plank	Time	Average Time	Heart Rate	Average Heart Rate	Components of Physical Fitness
	Person 1.		Person 1.	Average Heart Rate	Components of Physical Fitness
	Person 2.		Person 2.		
	Person 3.		Person 3.		
Person 4.		Person 4.			

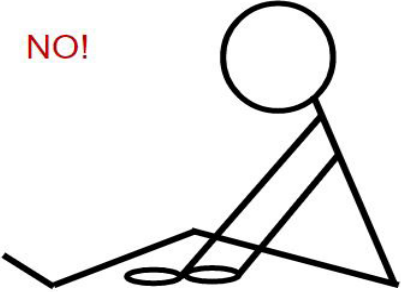
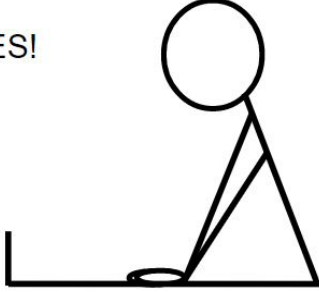
71 Average Team Heart Rate Graph

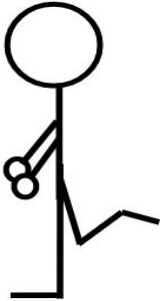

Appendix 3C

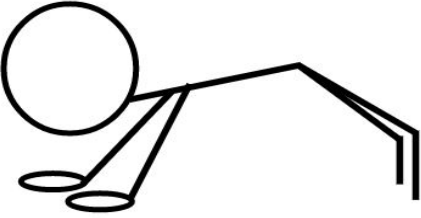
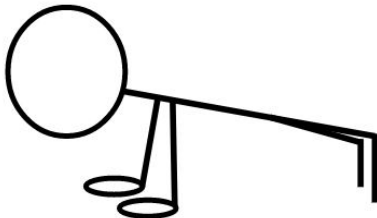
Fill in the graph below with your team's average heart rates for resting and each activity.

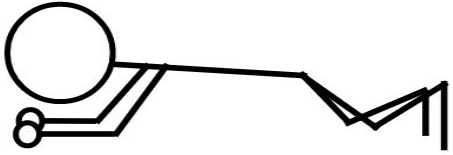
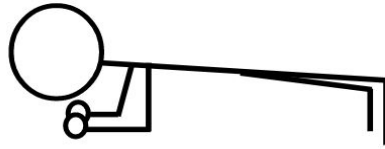


Component	Definition	Activities
Aerobic Capacity	The ability of the heart and lungs to get oxygen to tissues in our bodies	Running or jogging Dancing Swimming
Muscular Strength	The ability of muscles to push or pull against something	Climbing trees Playing tug-of-war Push ups
Muscular Endurance	The ability to use muscles many times without getting tired or The ability to hold muscles in a fixed position for a long time	Hanging from the monkey bars Doing as many squats as you can Doing as many push-ups as you can Holding a plank for as long as you can
Flexibility	The ability to move joints through a full range of motion	Stretches Yoga
Body Composition	The balance of different body tissues including muscle, bones, and fat	Running or jogging Playing tug-of-war Stretches

Station 1: Sit and Reach	
Improper Form	Proper Form
<p>NO!</p> 	<p>YES!</p> 
<p>Notes:</p> <ul style="list-style-type: none"> • Knees should not be bent • Hands should be placed one on top of the other with middle fingers lined up • Feet should be kept straight up • Heels should be lined up with the tape (15-inch mark on the yardstick) 	

Station 2: High Heel Run	
Improper Form	Proper Form
<p>NO!</p> 	<p>YES!</p> 
<p>Notes:</p> <ul style="list-style-type: none"> • Arms should be engaged and moved as one would do when running • Knee should be bent all the way so that the heel touches back 	

Station 3: Push-Ups	
Improper Form	Proper Form
<p>NO!</p> 	<p>YES!</p> 
<p>Notes:</p> <ul style="list-style-type: none"> •Body should be kept in a straight line •Shoulders should be positioned over wrists 	

Station 4: Planks	
Improper Form	Proper Form
<p>NO!</p> 	<p>YES!</p> 
<p>Notes:</p> <ul style="list-style-type: none"> •Knees should not be bent •Shoulders should be positioned over elbows 	

1	2	3
<div data-bbox="285 468 474 737" data-label="Image"> </div> <p data-bbox="261 793 503 827">Marching in Place:</p> <ol data-bbox="188 873 535 1247" style="list-style-type: none"> 1. Stand with your feet together and your arms by your sides. 2. March in place swinging your arms forwards and backwards. 3. March in place for 30 seconds. 	<div data-bbox="683 468 930 743" data-label="Image"> </div> <p data-bbox="732 800 889 833">Arm Circles:</p> <ol data-bbox="618 877 990 1289" style="list-style-type: none"> 1. Stand with your feet together and your arms held out by your sides. 2. Move arms in large forward circles for 30 seconds. 3. Reverse motion, moving arms in large backward circles for 15 seconds. 	<div data-bbox="1149 464 1365 751" data-label="Image"> </div> <p data-bbox="1122 800 1386 833">Side Leg Extensions:</p> <ol data-bbox="1060 877 1438 1367" style="list-style-type: none"> 1. Stand with your feet together. 2. Extend your right leg outward then return to standing. 3. Extend your left leg outward then return to standing. 4. Repeat at slow pace for 30 seconds.