Aerobic capacity, as measured by maximal oxygen uptake (VO2max), is the “ability to perform large muscle, dynamic, moderate-to-high intensity exercise for prolonged period.” (ACSM, 2006) By improving aerobic capacity, one can reduce risk for heart disease, metabolic disease, obesity, high blood pressure, some forms of cancer, and other health problems.

The Fitnessgram field tests for aerobic capacity include the pacer, one mile run, and the walk test. Each appropriate for different ages and populations. The actual assessment of aerobic capacity is one component of the assessment process.

Step 1: to understand the concept of aerobic capacity and its importance to health.
Step 2: to participate in conditioning exercises for aerobic capacity.
Step 3: instruction in how to perform the test.
Step 4: actual assessment.
Step 5: the development of a fitness plan and fitness goals.
Step 6: participation in physical activity designed to meet fitness goals.
Step 7: the reassessment of the test.
Step 8: revision of goals to reflect progress made.
(Fitnessgram, 2005)

Pacer – recommended for grades K-3
Test objective: to run for as long as possible across a 20 meter space at increasingly faster speed.
The student continues in the test until the 2 nd time he/she fails to reach the line by the time the beep sounds. The test is scored in laps.

One-mile run – recommended for students who enjoy running. Not scored for K-3
Test objective: to run (walk) a mile as fast as possible.
The test is scored in minutes and seconds.

Walk test – validity set for secondary students only; can be used to self-assess therefore a lifetime skill.
Test objective: to walk a measured mile as quickly as possible and determine heart rate at completion.
The test is scored as VO2 max, after calculating in time, heart rate, and body weight.
http://www.exrx.net/; http://www.exrx.net/Testing.html is a resource to quickly calculate VO2 max.

Activities to improve performance
While practicing the test will improve technique, strategy, and aerobic capacity, other activities might increase student enjoyment and include objectives that meet other standards.
Low organization cardio games
These games have low skill requirement and few rules. This maximizes the number of students who can play and the amount of play time. Using heart rate monitors and pedometers allows students to self-monitor their effort as well as providing the teacher with an objective assessment of participation. Students can call out heart rates after each goal, or other natural break in play. Keeping a running log of steps, distance, calories, and exercise time becomes a motivation tool for most students. Start with only the rules needed to play and teach strategy and fouls as the students play. Tell students in advance that the game will be stopped for instruction of new rules. This is especially important with hoop ball and tchoukball, which don’t follow the normal format for invasion games.

Warm up
Warm up is important to prepare the body for activity by increasing core temperature and heart rate and respiration. The primary locomotor skill for any of these games is running so a logical warm up might be a walk. It could be a practice for the walk test, using a shorter distance. Although the skills required for each game are simple, basic throw and catch, a short skill practice could be a warm up, providing there is adequate equipment.

Ultimate Frisbee
Played on a rectangular field.
Point is scored when the Frisbee is caught over the end line.
Teams change goal line after each score.
Player must pass Frisbee within 5 seconds.
Player may take two steps after catching the Frisbee.
No contact allowed. All players must remain an arm with Frisbee length away.
An incomplete pass turns over to the other team.
Game is started by a throw across the field.

Foosketball
Basketball played with a football.
Point is scored when a football passes through the basketball goal.
Can be played with multiple teams.
Ball must be passed within 5 seconds.
Player may take two steps after catching the ball.
No contact allowed.
Game is started and restarted with a jump ball.

Tchoukball (modified rules)
Point is scored when a ball, rebounding off the goal (tramp) is not caught by opposing team.
No contact allowed.
No defensive action allowed (interference, interception)
Team must attempt score after 3 passes. (use 5 with larger field)
Ball must be passed within 5 seconds.
Game is started with a pass from the end line.
In lieu of a rebounding goal, a table on its side or basketball backboard may be used.
**Hoop Ball**
Played on gym floor or rectangular space with end and sidelines. Hula hoops are placed in the four corners or tape the floor designating goals. Point is scored when team member catches ball while standing in the hula-hoop. (Murray modification: when a goal is scored, the opposing team performs a designated exercise; i.e. blue hoop = 15 curl ups.) Teams change goal line after each score. No contact allowed. Ball must be passed within 5 seconds. No score from an out-of-bounds throw in. Game is started or restarted after a goal by an underhand toss that must have a 10 ft. arc. After throw off or throw in, ball must pass the midline before scoring in the back goals.

**Striker**
Played on gym floor or other rectangular space with designated end lines. Point is scored every time the ball crosses the end line. Ball is moved with an open handed hit only. No contact is allowed. One team starts play by striking the ball toward the other team.

**Cool down and closure**
A cool down period is important to allow the body to return to a pre-exercise state. Giving students an opportunity to practice throw catch skills will allow them to naturally move enough to comfortably allow their heart rates to slow down. The primary muscles used are the lower body muscles: glutes, quads, hamstrings, and calves. It is important to stretch these muscles and that is a good time to review the lesson and give information about the next class.
Equipment
Heart rate watches and bar monitors
Pedometers
Calculators
Frisbee
Foosketball – 2
Tchoukball goals or tramps
Hula hoops 4 – ball