

FUNCTIONAL Circuit Training Strategies



Presented by: Ted Temertzoglou
Birchmount Park Collegiate Institute TDSB
ted.temertzoglou@tel.tdsb.on.ca

DESIGNING MUSICAL FITNESS CIRCUITS

Introduction

Circuit training can be done anywhere and with limited equipment and space, all you need is a little imagination and motivating music. By manipulating the length of the music and the pauses in-between, you can cater your circuit to fit the needs of your classes, students, athletes or clients regardless of athletic ability.

What can be assessed by teacher and/or student?

- ❖ Heart rate and breathing in relation to student target heart rate zone
- ❖ Participation in activity for sustained periods of time
- ❖ Safety

Here is the minimal amount of equipment that you will need to get started.

- ❖ Tape or CD player that has enough volume to be heard outside or in a gymnasium
- ❖ Gymnasium, hallway, open classroom or outside (weather permitting)
- ❖ Music with pauses incorporated (Roxio Easy CD/DVD Creator 6)
- ❖ Mats
- ❖ For resistance all you need is your own body
- ❖ Your imagination to create exercises

Some simple equipment

- ❖ Paper plates
- ❖ Towels (Beach)
- ❖ Hockey sticks or doweling
- ❖ Skipping rope hallway, or staircase

More equipment ideas

- ❖ Surgical tubing
- ❖ Medicine balls
- ❖ Stability balls
- ❖ Body bars
- ❖ Balance boards
- ❖ Bosu ball
- ❖ Barbells, dumbbells, bikes, treadmills, resistance machines...etc...
- ❖ Reaction ball

How to begin (assuming class size is equal to 32)

- ❖ students pair up (=16 pairs) - you'll need 8 stations for this class
- ❖ assign each pair with a group "A" or "B" designation
- ❖ all "A's" begin at a cardio-station (their choice of jogging, skipping, stairs, riding, rowing etc...) all "B's" begin at exercise station
- ❖ warm-up class with first song
- ❖ after warm-up students have 15-30 seconds to get to their spots
- ❖ the music begins and students work at their stations until the music pauses
- ❖ when music pauses pairs switch-"A's" go to exercise stations-"B's" go to cardio-stations
- ❖ continue switching, clockwise, until circuit is completed after cool-down song (light jog/walk followed by total body stretch)

General resistance training guidelines for circuit design

Resistance Training Guidelines From: The American College of Sports Medicine (ACSM 2000)					
Individuals	Recommended Intensity	Number of Repetitions	Number of Sets	Frequency	Duration of Program
Strength (beginner)	70-80% of 1-RM or 8 to 12-RM	8-12	Greater or equal to 1	3 times per week	6 weeks or more
Strength (expert)	85-100% of 1-RM or 1 to 6-RM	1-6	Greater or equal to 3	5-6 times per week	12 weeks or more
Toning	60-70% of 1-RM or 12 to 15-RM	12-15	Greater or equal to 1	3 times per week	6 weeks or more
Endurance	Less or equal To 60% of 1-RM Or 12 to 20-RM	15-20	Greater or equal to 1	3 times per week	6 weeks or more
Hypertrophy (expert)	70-75% of 1-RM or 10 to 12-RM	10-20	Greater or equal to 3	5-6 times per week	12 weeks or more

The ACSM recommends that older adults and children use multijoint exercise and exercise programs for children and adolescence should be supervised by qualified fitness personal. Adapted from Hayward 2002.

Legend BW=body weight ST=surgical tubing SB=stability ball
MB=medicine ball T=towel BSB=bosu ball
PP=paper plates BB=balance board BBar=body bar

Exercises - Add ST, MB, BB, BSB or SB to make all exercises more challenging!

1. push-ups (chest, triceps, deltoids, hip flexors)
 - a) wall
 - b) modified
 - c) modified one leg
 - d) modified alternating legs
 - e) modified with upward leg thrust
 - f) standard
2. arms/shoulders
 - a) bicep (BBar, MB, ST, T with partner)
 - b) triceps (BBar, MB, ST, T with partner)
 - c) shoulder raises (BBar, MB, ST, T with partner)
3. sit-ups
 - a) abdominal roller (T)
 - b) McGill (BW)
 - c) chin-ups (BW, MB)
 - d) rollovers (BW, MB)
 - e) HLV thrusts (BW)
 - f) stability ball
 - g) stability ball with (ST)
4. back
 - a) one hand partner pull (T)
 - b) two hand partner pull (T- crossed)
 - c) seated row with partner (ST-crossed)
 - d) standing bent-over cross ST raises
5. legs
 - a) squats (BW, ST, MB)
 - b) forward, side, diagonal, lunges (BW, MB)
 - c) calf raises (BW, MB)
 - d) hamstrings (MB, SB, PP)
 - e) bear crawl (T, PP)
6. hips
 - a) hip thrusts (PP, MB, SB, ST with partner)
7. core stability
 - a) body plank
 - b) McGill
 - c) kneeling plank-arm and opposite leg up
 - d) lateral body plank

Agility and reaction drills

- reaction ball
- dot drill
- step-ups (BB)

Safety Guidelines

As a way of avoiding injury and ensuring that every student gets the most out of each circuit be sure to, keep the following in mind:

Charts/Cards: Make sure students can perform each exercise with proper technique before you use them in a circuit

Before Exercising: Students should complete a thorough warm-up and cool-down before starting and when finishing each workout.

Equipment: Students should not use any exercise equipment that is too heavy for them or that they have not had proper instruction to use.

- check to ensure that all equipment is in proper working order
- frequently check tubing for tears, dispose of all torn tubes or dynabands

Resistance: Allow students to increase resistance when they can perform 10 to 15 repetitions with any apparatus with perfect form and technique

Posture: Always ensure that proper posture and form is maintained throughout the exercise(s)

Breathing: Make sure students understand how to breathe during resistance training.

- The general rule is to exhale slowly on exertion and to inhale during the return phase of the exercise

Pain: Students should stop exercising if feeling discomfort, pain or lightheadedness

ROM: Make sure students complete the entire range of motion (ROM) during each exercise.

Space: Allow adequate space between each “pit” and “conditioning” stations

Supervision: refer to the Physical Education: Ontario Safety Guidelines 1999 (Hand Out Provided)

Demonstrated Circuit Template:

Circuit Name: “Total Body Blaster”

Area of Fitness Focus: Health and Skill Related

Pit and Conditioning Stations	Body Part	Equipment Used	Fitness Component
1a. Medicine ball Lunges 1b. Skipping	Legs Heart & Lungs	Medicine ball Skipping rope	Muscular endurance Cardiovascular
2a. Isometric Curl 2b. Lateral Shuttle	Abdominals, Back Legs	Mat Pylons	Muscular endurance Agility
3a. Side Plank 3b. Stairs	Abdominals, Back Heart & Lungs	Mat Stairs	Muscular Endurance Cardiovascular
4a. Front. & Lat. Delt Ras. 4b. Jog	Shoulders Heart & Lungs	Tubing Gym	Muscular Endurance Cardiovascular
5a. Partner Row 5b. Jog/Sprint Straight	Back Heart & Lungs	Tubing / Beach Towel Gym	Muscular Endurance Cardiovascular
6a. Bal. Br. Squats 6b. Dot Drill	Leg/Stability Legs	Balance Board/Med-ball Dot Drill Pad	Proprioceptors/Mus. End Agility
7a. Stability Ball Hip Thr 7b. Skipping	Hip Flexors Heart & Lungs	Stability Ball Skipping rope	Muscular Endurance Cardiovascular
8a. Stability Ball Leg Curls 8b. Lateral Shuttle	Legs Legs	Stability Ball Pylons	Muscular Endurance Agility
9a. Kneeling Partner Press 9b. Stairs	Chest Heart & Lungs	Tubing Stairs	Muscular Endurance Cardiovascular
10a. Triceps Extensions 10b. Jog	Arms Heart & Lungs	Tubing Gym	Muscular Endurance Cardiovascular
11a. Body bar Tubing Squ. 11b. Jog/Sprint straight	Legs Heart & Lungs	Bodybar/Tubing Gym	Muscular Endurance Cardiovascular
12a. Ab Roller 12b. Dot Drill	Abdominals Legs	Towel Dot Drill Pads	Muscular Endurance Agility

Circuit Training Design Template

Circuit Name: _____

Area of Fitness Focus: _____

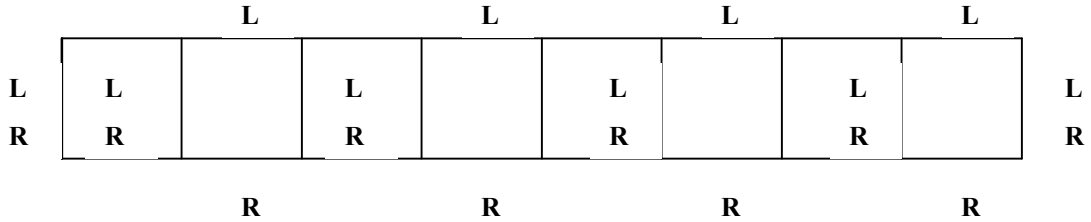
Station	Body part	Equipment used	Fitness/skill component
1a. 1b.			
2a. 2b.			
3a. 3b.			
4a. 4b.			
5a. 5b.			
6a. 6b.			
7a. 7b.			
8a. 8b.			
9a. 9b.			
10a. 10b.			
11a.. 11b.			
12a. 12b.			
13a. 13b.			
14a. 14b.			
15a. 15b.			
16a. 16b.			
17a. 17b.			
18a. 18b.			
20a. 20b.			

Using Circuit Training as a vehicle to meet the HALE curriculum expectations:

	PPL10	PPL20	PPL30	PPL40
Course Expectations Of Active Living Strand	<ul style="list-style-type: none"> • Active participation <ul style="list-style-type: none"> ○ Regular participation ○ Demonstrate positive personal and social behaviour (striving for personal best, encouraging others) • Physical Fitness <ul style="list-style-type: none"> ○ Improve personal fitness levels ○ Participate in personal health related fitness programs ○ Monitor Exercise Intensity • Safety <ul style="list-style-type: none"> ○ Safe practices in physical activity (using equipment correctly, proper technique) ○ Minimize risk to self and others (participate in warm-up and cool down exercises) 	<ul style="list-style-type: none"> • Active participation <ul style="list-style-type: none"> ○ Regular participation ○ Demonstrate positive personal and social behaviour (striving for personal best, encouraging others) ○ Demonstrate leadership (leading warm up or cool down) • Physical Fitness <ul style="list-style-type: none"> ○ Improve personal fitness levels ○ Participate in revised personal health related fitness programs ○ Assess the effectiveness of various activities for improving health-related fitness • Safety <ul style="list-style-type: none"> ○ Safe practices in physical activity (using equipment correctly, proper technique) ○ Minimize risk to self and others (participate in warm-up and cool down exercises) 	<ul style="list-style-type: none"> • Active participation <ul style="list-style-type: none"> ○ Regular participation ○ Demonstrate positive personal and social behaviour (striving for personal best, showing respect for others) ○ Demonstrate leadership (planning and leading warm up or cool down) • Physical Fitness <ul style="list-style-type: none"> ○ Improve personal fitness levels ○ Explain the physiological benefits of physical activity (improved strength, endurance, energy) ○ Assess personal health-related physical fitness in relation to personal health goals (monitor heart rate with regards to training zones during activity) ○ Create daily personal health related fitness programs • Safety <ul style="list-style-type: none"> ○ Safe practices in physical activity (using appropriate equipment and facilities, 	<ul style="list-style-type: none"> • Active participation <ul style="list-style-type: none"> ○ Regular participation ○ Demonstrate positive personal and social behaviour (modelling positive behaviour, facilitating group cohesiveness) ○ Describe strategies that promote lifelong participation • Physical Fitness <ul style="list-style-type: none"> ○ Improve personal fitness levels ○ Explain the training principles that underlie physical fitness ○ Assess personal health related fitness ○ Refine daily personal health related fitness programs ○ Evaluate a variety of physical fitness programs • Safety <ul style="list-style-type: none"> ○ Safe practices in physical activity (using appropriate equipment and facilities, understanding the

			<p>understanding the importance of proper poster to minimize injury)</p> <ul style="list-style-type: none"> ○ Minimize risk to self and others (doing warm-ups) 	<p>importance of proper poster to minimize injury)</p> <ul style="list-style-type: none"> ○ Minimize risk to self and others (assessing safety of equipment)
Assessment and Evaluation	<ul style="list-style-type: none"> • Formative self assessment of daily participation in circuit training activities • Formative self-assessment and formative teacher evaluation of safe practices during performance of circuit training • Formative self-assessment and formative teacher evaluation of social skills during circuit training activity • Formative self assessment and formative teacher evaluation of improved physical fitness 	<ul style="list-style-type: none"> • Formative self assessment of daily participation in circuit training activities • Formative self- assessment and formative teacher evaluation of safe practices during performance of circuit training • Formative self-assessment and formative teacher evaluation of social skills during circuit training activity • Formative self assessment and formative teacher evaluation of improved physical fitness 	<ul style="list-style-type: none"> • Formative self assessment of daily participation in circuit training activities • Formative self- assessment and formative teacher evaluation of safe practices during performance of circuit training • Formative self-assessment and formative teacher evaluation of social skills during circuit training activity • Formative self assessment and formative teacher evaluation of improved physical fitness 	<ul style="list-style-type: none"> • Formative self assessment of daily participation in circuit training activities • Formative self- assessment and formative teacher evaluation of safe practices during performance of circuit training • Formative self- assessment and formative teacher evaluation of social skills during circuit training activity • Formative self assessment and formative teacher evaluation of improved physical fitness
Using circuit training as teaching and learning strategy	<ul style="list-style-type: none"> • Students can implement some of the circuit training exercises and their modifications into their personal health-related fitness program. • Senior PE students can evaluate variety of different pieces of exercise equipment used in circuit training. • Students can plan and or lead a warm up and cool down before and after the circuit. • Senior PE students can create a circuit implementing training principles, and/or explaining physiological benefits of their activity. 			

In and Out - Step into the first square with your left foot immediately followed by your right foot. Now step outside to the left the second square with the left foot, then immediately step outside to the right of the second square with the right foot. Step back into the third square with your left foot first, followed by your right foot. Repeat this pattern for the full length of the ladder. Walk back to the beginning around the ladder and this time lead with your right foot.



Resources

BOOKS

Exercise Science: Introduction to Health and Physical Education: Temertzoglou and Challen
(Thompson Educational Publishing)

Sections 13 & 14 PP 187 to 239

<http://www.thompsonbooks.com/hpe>

(416-766-2763)

Healthy Active Living: Keep Fit Stay Healthy Have Fun

Chapter 8

<http://www.thompsonbooks.com/hpe>

(416-766-2763)

Carlos Santana Book (Human Kinetics)

Drills for Speed, Agility, and Quickness Book/Video Package

<http://www.humankinetics.com/PRODUCTS/SHOWPRODUCT.CFM?ISBN=0736036946>

WEBSITES

Ladder Drells:

http://www.uop.edu/AthleticPerformance/exercise%20videos/ladder%20drill%20videos/ladder_drillsweb2.htm

Sample circuits for various body parts

Go to “Bodyworks” under main menu

<http://www.netfit.co.uk/menu.htm>

Pedometer : <http://www.speakwell.com/ipedcanada/>

Equipment

Pro 1 Ultimate Fitness

Tel.416.457.3488 or 416.457.FITT

Order Hotline: 416.457.3488

Website: Pro1UltimateFitness.com

Email: Pro1UltimateFitness@rogers.com

Lettuce Make Thyme

Phone: 905-304-6774

Toll free: 1-877-304-6774

Fax: 905-304-3054

Email: lynn@lettucemakethyme.com **Website:** www.lettucemakethyme.com

Mailing Address:

3B -1418 Osprey Dr.

Ancaster, ON L9G 4V5

Steps Count

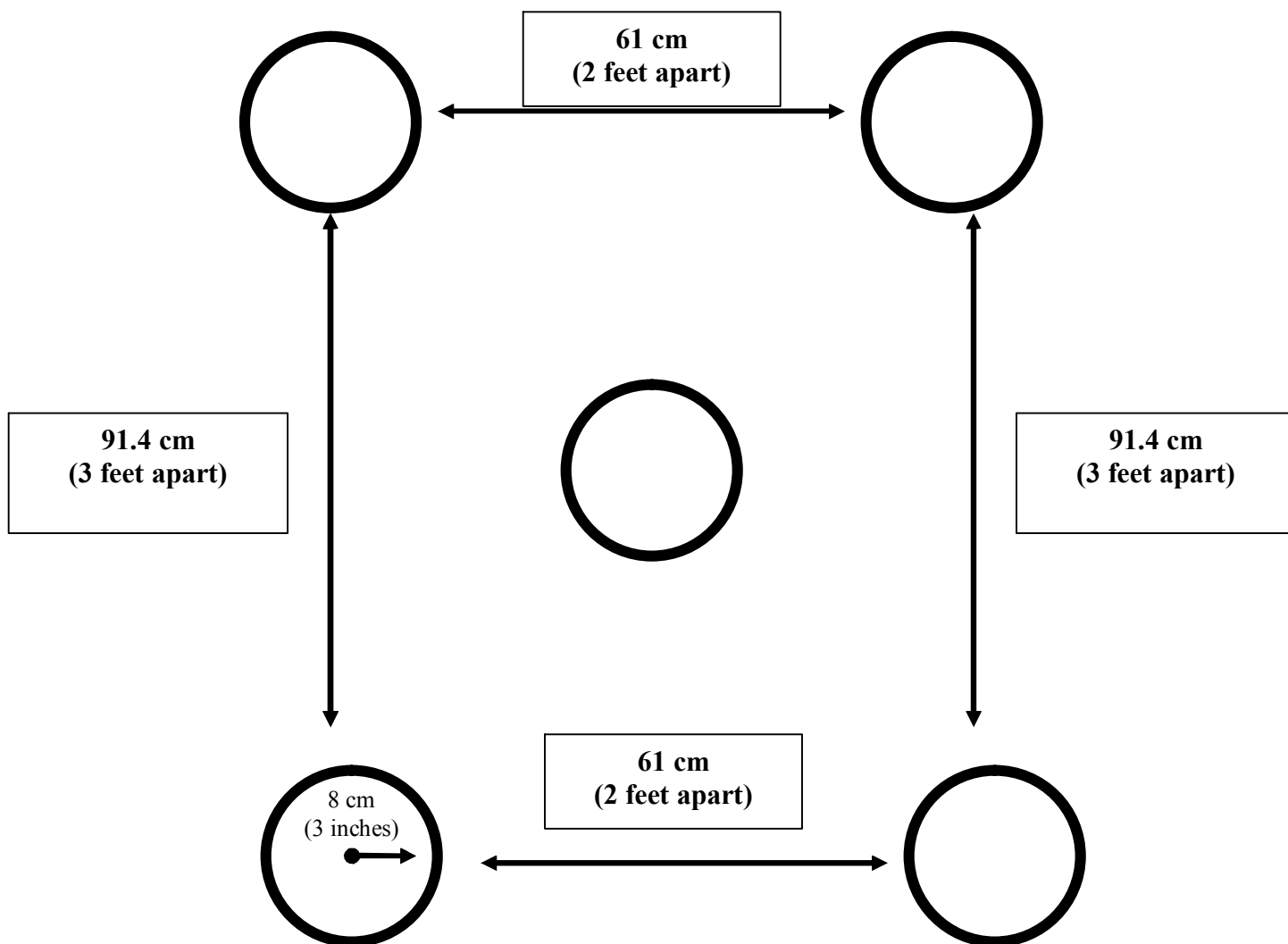
Phone: 613-584-3148. **Toll Free** 1.866.342.2328

Email: info@stepscount.com

Address: 11 Glendale Avenue

Deep River, Ontario, K0J 1P0. P.O. Box 430

info@stepscount.com



NOTE: the “DOTS” have a 8 cm (3 inch radius). The centre “dot” is located right in the middle of the other four “dots”.

Sequence: 5 Patterns

1. Up and Back
2. Right Foot
3. Left Foot
4. Both Feet
5. Turn Around

Each pattern is repeated 5 times. When all patterns are completed the clock is stopped.

There is a .1 second penalty for each missed dot (i.e. 10 misses = 1 sec penalty)

Standards may be downloaded off www.biggerfasterstronger.com