

# The Kinesthetic Classroom: Teaching and Learning through Movement

Presented by

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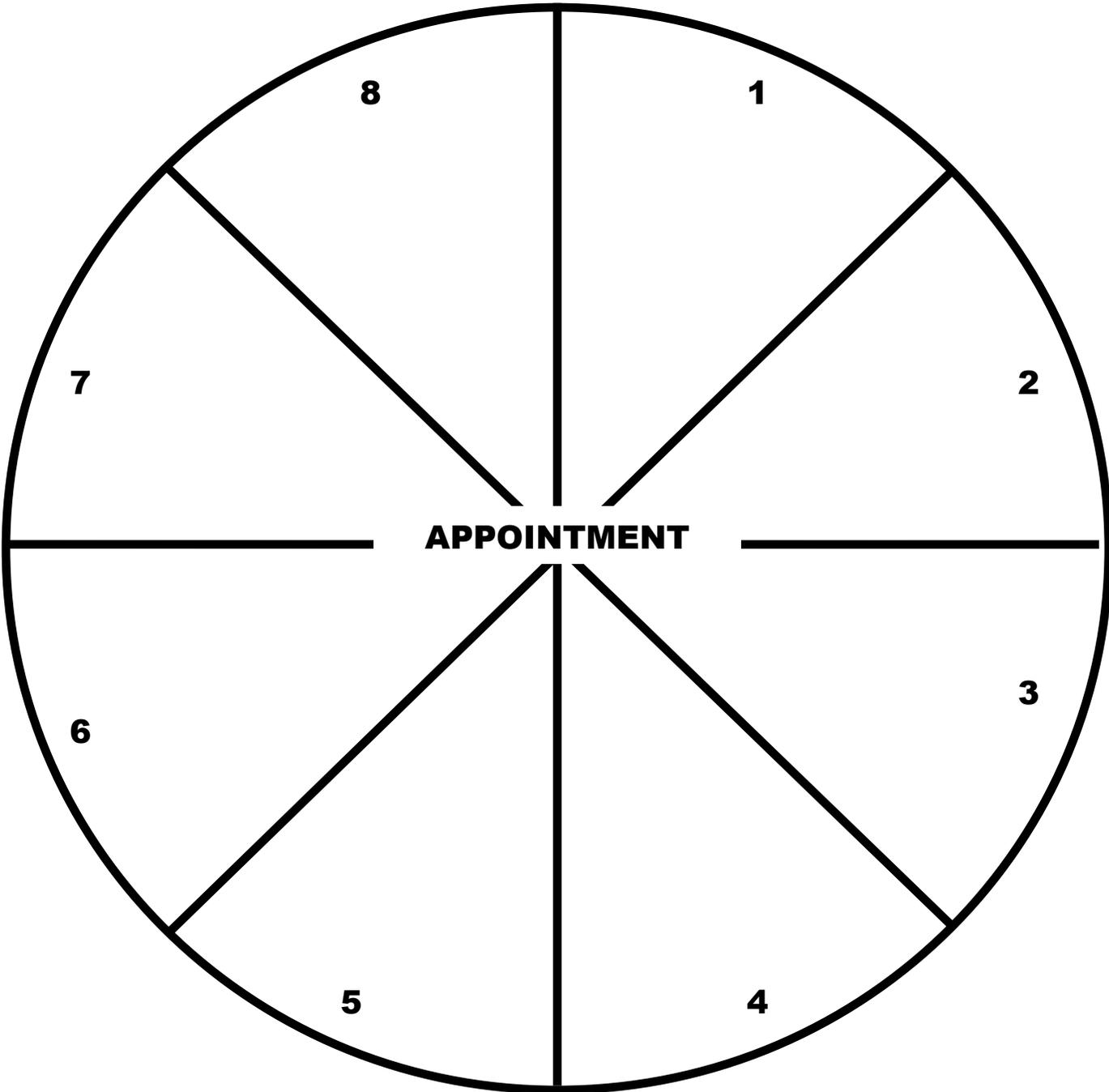
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## Brain Principles Related to Movement

1. The Brain Responds to Novelty
2. The Brain Responds to Movement
3. The Brain is Always Trying to Make Meaning
4. The Brain Thrives on Concrete Experience
5. Emotions Help the Brain Remember Experiences
6. The Brain Needs Social and Environmental Interaction

The other 6 . . .

1. The Brain Needs Glucose as Food for the Brain
2. The Brain Automatically Searches for Patterns
3. The Brain Connects Old Experiences to New
4. The Brain Needs Incubation Time for Memories to Form
5. The Brain Needs Choice/Control of Experiences
6. Primary Needs Get Served first Under Stress

## **Why does movement enhance the learning process?**

- Enhances brain function
- Increased circulation
- Refocuses attention
- It changes the brain chemically
- Reduces sitting time
- Reduces stress
- Can stimulate neurogenesis (prolonged aerobic activity)
- Provides a break from learning
- Enhances episodic memory
- Provides opportunity for implicit learning
- Provides for motivation and the meeting of basic human needs
- It's the best available manager of state
- Provides an opportunity to differentiate instruction
- Sensory engagement
- Finally, because the research says so . . .

**Implicit Learning** is the brain's preferred way to acquire information yet most school learning happens through explicit channels. Implicit learning often happens through movement, emotions, and life experiences. Explicit learning occurs on a very conscious level and, in a school setting, often happens through reading, listening, discussion, lecture, and work sheets. Learning something implicitly usually involves more neural pathways and sensory cues allowing for information to be learned more quickly and remembered more accurately. Using movement in the classroom opens more implicit learning channels which improves the chance for academic success.

**State management** refers to the ability to manage mind/body physical, mental and emotional states. Managing learner states is critical for teachers to understand because of the following:

- Limited learner attention spans
- The need for students to learn to self-regulate mood and state
- Mind/body state influences meaning making

Movement, novelty, and music are three relatively simple ways to manage state.

## The 6 Purposes for Movement

### Preparing the Brain

Studies have suggested a connection between abstract thinking and a well-developed sense of spatial awareness. The developing brain needs to activate this system adequately so movement and cognitive growth can develop (Jensen, 2000). Various spinning, balancing, jumping, rolling, turning, and combination activities can help develop and improve the vestibular system and spatial awareness. Movements that stimulate the inner ear alert the brain to sensory stimuli (Hannaford, 1995). The more senses that are used for learning, the more likely information will be stored and retrieved from memory.

One movement activity that crosses the midline of the body and helps improve visual tracking is **hand clapping – toe tapping**: have students stand with feet shoulder width apart and arms reaching out to their sides. Cross the right foot in front of the left leg and tap the toe to the ground. At the same time, cross the right arm over the body and clap with the left hand. Now go back to the beginning position and continue with the movement to the opposite side.

One movement activity that helps to develop the vestibular system and spatial awareness is **spinning**: Have students bend their knee so their right foot is close to their buttocks. Now with their left hand, they will reach behind their back and grab their right foot. While hopping on their left foot they spin in a clockwise rotation (then counterclockwise). Continue activity with opposite foot and hand.

### Providing Brain Breaks

Brain breaks are useful for giving necessary content breaks, state management, incorporating fun into a lesson, and re-focusing attention. Listed below are several easy brain breaks that can be incorporated immediately:

**Handshake Creations**: Stand up, move around the room, and in the time allotted greet as many people as possible and each time you meet with someone create a new handshake.

**Finger Snatch**: Stand facing your partner. Each person puts their right hand out in front of them and puts their left pointer finger in the palm of the other person. When the teacher yells “go” each person simultaneously tries to grab the other person’s pointer finger and pull their own pointer finger out of the palm of the other person.

**Rock, Paper, Scissors Math**: Participants play rock, paper, scissors but instead of shooting a rock, paper, or scissors, each person shoots a number (1-5). Both people quickly add up the two numbers and the first to yell out the answer wins. Try also with multiplication and subtraction.

## Supporting Exercise and Fitness

Ratey (2008) states that research on exercise and cognition shows that:

- In one landmark study aerobic exercise was as effective as antidepressants
- Women who exercise lower their chances of developing dementia by 50%
- Aerobic exercise sparks new brain-cell growth
- A revolutionary fitness program helped put one U.S. school district of 19,000 kids first in the world in science
- Aerobic exercise really is the best defense from everything from mood disorders to ADHD to addiction to menopause to Alzheimer's.

Aerobic exercise needs to be re-framed as benefitting the brain just as much, if not more than, the body. Examples of easy-to-use exercises in the classroom include jumping jacks, mountain climbers, scissor kicks, jog in place, and crisscrosses.

## Developing Class Cohesion

These activities serve to build cooperative and relationship skills, teamwork, and a sense of belonging in a fun, movement oriented atmosphere. One of the activities you were a part of today is called **Balloon Pop**.

Objective: To participate in a cooperative game while using team work and strategies to make balloons pop up in to the air.

Materials Needed: Balloons and a whistle.

Activity Directions: The instructor will split the class in two equal teams. All team members will make a small, tight circle. All members of each team must stay hooked together by either joining hands or linking forearms. The instructor will give each team a balloon (should be approximately the size of a volleyball). Each team has to stay linked together while making their balloon pop into the air. The participants can use any part of their body to keep the balloon up, however they need to play safely and be aware of their other teammates. After each team is given a few minutes to practice with the one balloon, the instructor can add another balloon. If a balloon starts to drift away from a team, the entire team must stay linked together as they all move to get the balloon and keep it popping. After a few minutes of practice, the real game begins. This game is a friendly competition where one team is playing against the other. The first team to earn 3 or 5 points (instructor's decision) will be the winning team. A team can earn a point by keeping their balloon in the air longer than the other team. As soon as a balloon hits the ground, the other team earns a point.

Note: a minimum of 8 participants are needed for this game, if less than 8 participants are present the instructor will refer to the challenge game

Challenge: The instructor will now place the two teams together. The goal is for both teams to link hands to keep all the balloons popping up in to the air. This is easier said than done. Encourage

participants to develop strategies. Set goals and see how many balloons they can keep up in the air at one time. Good luck trying to stop some of your participants from laughing!

### **Reviewing Content Using Movement**

These activities are wonderful for content review because of their fun and motivational nature. They allow students to review information in an enthusiastic and playful manner. These games are applicable to all classrooms in all grade levels. There are many examples of these types of activities and the one we played today is called

#### *Content Footloose*

**Objective:** To recall information about sport in a silent, action-based activity.

**Materials Needed:** Footloose answer sheet and content questions on a note card or on cut up pieces of paper.

**Activity Directions:** This is a silent review game. The instructor will give each player a blank footloose chart that has 10 to 20 square blocks in it. There will be a question that corresponds with each block. The questions will be made up from specific content areas. Some questions may be written more than once if the instructor wishes. These questions will be placed on index cards. The instructor will then pass out the cards so that each player has a card. At the signal, participants will turn their card over, read the question and write the appropriate answer in the same numbered square. If the participant does not know the answer, he/she will leave it blank. At any time a participant can get up to move around the room and exchange questions with another person that is also moving in search of an exchange. The student cannot look at the new question until he/she gets back to his/her seat. Once the participant gets back to the seat they can check to see if he/she knows the answer to this question. If it is a question that he/she already had, they must get back up out of their seat to search for a new question. The game progresses until time is called. The goal is to get as many answers as you can before the end of the game. The game length is up to the instructor's discretion. As noted this is a silent game. Anyone talking during the game will be placed in to the penalty box for a twenty second time-out. If a student receives a second penalty, the time-out will be increased by ten seconds. At the conclusion of the game the instructor can have the students check their own sheets or exchange sheets with a partner.

**Challenge:** To create a more challenging experience the instructor may choose to play this game at the beginning of the unit or implement some higher order questions.

Many educators love the idea of students being active, on task and QUIET! This activity is great for reviewing many different content areas.

### **Teaching New Content Using Movement**

The brain and body have unfortunately been separated for both medical and educational purposes for far too long. The body is simply an outwardly extension of the brain. Using the body to learn is a simple, readily available, and efficient for way for students to learn and remember content. In fact, when I teach graduate courses on the brain I have participants learn about the characteristics of a neuron using their

arm, hand, and fingers. This way, I know the information can be easily accessed and readily available for later use because of its implicit nature. This strategy can be used in all classrooms in nearly all content areas. In this session you've been a part of solving several math problems. Here is an example of one:

*Finding the circumference and diameter of a circle:*

Create enough space for all students to form a circle. Have one student walk heel to toe around the entire circle making sure to count his steps and finish at the same spot where he started. At the original starting point have that same student turn toward the circle (the students should open the circle) and walk a straight line from one side of the circle to the other, heel to toe and counting all of his steps. That student has just marked both the circumference and diameter of a circle. The relationship is pi. The general equation is the circumference of a circle is a bit more than three times the diameter of the same circle ( $\pi = 3.141$ ). Doing this kinesthetically could produce an inexact result but will be close enough to teach the concept. If walking the entire circle produced 27 steps and walking the diameter produced 8.5 steps, the result would be 3.176.

A Brief Overview of Research on Movement, Fitness, Cognition and Academic Performance

- 17 of the 250 action research designs from the 2009 Master of Arts in Education graduating class of Gratz College focused on using movement in the classroom. Taken as a whole this research informs us that using kinesthetic activity increases motivation, creates positive learning states and classroom environments, can raise test scores, prepares the brain and body for learning, increases levels of student participation, attention, and engagement, and helps students to more easily retain and recall information; as cited in *The Kinesthetic Classroom* (Kuczala and Lengel, 2010).
- Students involved with the Learning Readiness PE program used in the Naperville (IL) School District have shown significant increases in reading ability and comprehension, and math. Initially, students voluntarily took the 7:00 a.m. physical education class before attending their regular reading and math classes. In one semester, those with LRPE improved their reading and comprehension scores by 0.5 grade levels more than those students in the study who took the literacy class alone. The results were just as compelling with the students who took LRPE before math class. These students increased their algebra readiness by an average of 20.4% compared to 3.87% in the students without LRPE. Currently, the program is mandatory; as cited in *The Kinesthetic Classroom* (Kuczala and Lengel, 2010).
- In 2002, A California Department of Education study matched scores from 954,000 students on the spring 2001 administration of the Stanford 9 Test (SAT-9) with the results of the same students' performance on the state-mandated 2001 physical fitness test and found that academic achievement is related to their levels of physical fitness (Winger and Thomas, 2002) as cited in *Action-Packed Classrooms* (Summerford).

- Hyperactive children who run before class have improved their behavior so significantly that doctors were able to decrease stimulant doses in children who ran every day (Putnam, 2003) as cited in *Action-Packed Classrooms* (Summerford).
- Mental focus and concentration levels in young children improve significantly after engaging in structured physical activity (Caternio and Polak, 1999) as reported in the *Action Based Learning Lab Manual* (Hess and Madigan).
- A 2009 study found that of 2.4 million Texas students those who are physically fit are more likely to do well on the state's standardized test, have good school attendance and are less likely to have disciplinary referrals (Texas Education Agency, 3/9/2009).
- Researchers at the University of Illinois found that after acute bouts of walking students are better able to allocate attentional resources and also results in better performance on academic achievement tests (U of Illinois, 3/31/2009).
- Sacrificing physical education for classroom time does not improve academic performance. In fact, one study showed that a reduction in class time for academics to enable an increase in physical activity leads to consistently higher mathematics scores (Active Education Fall 2007 Research Brief).
- The Prince William County (Virginia) Public Schools have also reported dramatic success in using the Action Based Learning Lab with first graders in need of intervention and remediation; as cited in *The Kinesthetic Classroom* (Kuczala and Lengel, 2010).

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Summerford, C. (2005). *Action-Packed Classrooms: Movement Strategies to Invigorate K-5 Learners*, San Diego: The Brain Store

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# NOTES

## **Additional Kinesthetic Classroom Activity Directions**

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### **Mime Introductions**

Find a partner. Tell your partner three things about yourself without speaking; use only charades. Then reverse roles. Afterwards, confirm what your partner was trying to tell you. A variation on this would be to demonstrate three things about your school, your company, an idea, etc. Feel free to have participants switch partners several times.

### **Funny Face Introductions**

With music playing in the background, have the group form a large circle or break into smaller groups of five or six students. Each member introduces him/herself by saying his/her name in conjunction with a funny facial expression. The group imitates the expression.

### **All My Friends Who?**

Form a circle of chairs with a leader in the middle. The leader says, "All my neighbors who like panda bears find a new seat." Or, "all my neighbors who like camping find a new seat." Participants keep coming to the center until everyone has taken a turn asking about their neighbors.

### **Shared Unique Experiences**

Group should form a circle. Read from the list of "have you ever?" questions and please feel free to add as many of your own as you want. When anyone can answer "yes" to a question they should come to the center of the circle and shake the hands of the other participants who "have." While they are in the center have one, or all, share their brief story about the "yes" answer to the question. If there are participants who have not been able to say "yes" to any of the questions please invite them to the center, one at a time, and let them ask a "have you ever?" question of the group of something they've done and was not asked about. Sample questions include:

1. Have you ever climbed to the highest point of your state of birth?
2. Have you ever lived overseas for more than 6 months?
3. Have you ever sung karaoke?
4. Have you ever been without a shower for more than 1 week?
5. Do you have more than 2 siblings?
6. Have you ever ridden an elephant?
7. Have you ever eaten Rocky Mountain Oysters?
8. Can you speak 4 or more languages?
9. Have you ever been in love with someone who was vegetarian?

10. Have you swum in 3 or more different oceans?
11. Have you ever gone for a ride in a helicopter?
12. Have you broken 4 or more bones in your body?
13. Have you done volunteer work in the past 6 months?
14. Have you ever been rock repelling?
15. Have you ever had a close relative or friend who lived to over 100?
16. Have you ever cooked a meal by yourself for more than 20 people?
17. Have you ever been to a Super Bowl or World Series?
18. Have you ever been parachuting or done a bungee jump?
19. Can you whistle?
20. Have you ever seen a Polar, Grizzly or Black bear?

### **Nametag Switch**

Have participants write a sentence about themselves on their nametag with several adjectives describing themselves. No names! It might read . . . “I am an exercising, magazine reading, tennis playing, mother of two.” . . . Collect the name tags and re-distribute them to other participants. Now have all stand, mix, and converse in order to find out to whom, their nametag belongs. Nametags are returned to the original owner. Finally, ask each participant read their sentence and give a very brief description of why they wrote what they did.

### **Prepare the Brain**

#### **Nose/Ear Grab**

Instruct students to grab their nose with one hand and crossover with their other hand to grab their opposite ear. On your signal they should “switch” and the ear hand grabs the nose and the nose grabs the ear in the same type of switching motion.

#### **Hand Clapping/Toe Tapping**

Cross the right foot in front of the left leg and tap the toe to the ground. At the same time cross the right arm over the body and clap with the left hand. Go back to the beginning position. Now, cross the left foot in front of the right leg and tap the toe to the ground. At the same time, cross the right arm over the body and clap with the left hand. Continue the pattern as many times as you wish.

## **Brain Breaks**

### **Duck and Point**

Activity Directions: Participants form a circle with the teacher standing in the center. The teacher spins around (slowly) and eventually stops and points at a person and says “Duck”. That person ducks down to the ground. The people on the right and left of the person, who ducked, have to race to point at one another. The person who points the fastest wins that round. The person who loses is out for one or two rounds, and later re-enters the game.

### **Rock/Paper/Scissors Math**

In partners, have students play rock/paper/scissors but instead throw a number. The first partner to add yell out the sum wins. You can also multiply or subtract. Both hands can be used for four part addition or to multiply by adding up your own hands first, your partners, next and multiplying the two numbers.

### **Finger Snatch**

Partners stand facing each other. Each partner then puts out their right hand with their palms facing up. Then each partner takes their left pointer finger and puts it in the right palm of their partner. On your signal, partners should simultaneously try to pull their fingers out of their partner’s palms while trying to grab their partner’s fingers. Re-read and practice before implementing!

### **Body Writing**

Instruct students to use their heads, elbows and hips as writing utensils. The air is their paper. When I do it I ask people to write the names of their mother in the air with their head. Then with their elbows – the name of the father and best friend respectively. Finally, I ask them to write the name of a favorite vacation spot and their favorite food with each hip respectively.

## **Class Cohesion Activities**

### **Name switch on the move**

Activity Directions: Have students mill around the room to music while greeting one another with smiles and kind gestures (hand shake, fist pump, etc.). Every time they pass someone, they give them whatever name tent they have in their hand. When the music stops, they must read the name on the name tent they have and see if they know who that person is in the room. The

leader will go around the room and have each participant attempt to identify the person whose name tent they hold. Play a few rounds. If you have a very large class, it may be easier to have the students find and meet up with the person on the name tent that they are holding.

### **Paper Plate Activity**

Hand out 1 cheap paper plate to each participant so they can put it on their head. Have them all begin walking around the room with plates on their heads. The idea is to not let the paper plate fall from their head. If it does they cannot move until someone is nice enough to help them out by carefully bending to the ground to pick up their plate and put it back on the person's head (this must be done without letting their own paper plate fall off their head). Once the plate is safely upon their head they may begin to move again. You can put any time limit on it you want. This is simply an after lunch energizer. If you see another application in the classroom (like cooperation and supporting one another) please make reference to it.

### **Hula Hoop Fun**

Depending on class size, have participants move into one big circle or two smaller circles. Circles of 10 to 15 are preferable. They must hold hands. Have two members of the circle break hands, put two hula hoops on their arms and have the circle close again. Participants have to move both hula hoops around the circle (one in one direction and one in the other) without ever breaking the link of holding hands. Watch the fun, competitiveness, and problem solving begin!

### **The Killer Bees**

You will need 2 or 3 long styrofoam floatation devices which can be purchased at a dollar store and about 100 fake flowers which can also be purchased at the dollar store. I buy them in bunches with stems and then just rip off the flowers. Distribute flowers around the center of the room on the floor. Create two, three, or four teams of worker bees depending on class size and send them to individual corners. Select two individuals to be the killer bees. They will have the Styrofoam floaties. The object of the game is for the individual team members to run into the center of the room and grab as many flowers as possible and bring them back to their respective corner without getting whacked by the killer bees! If it is too easy for killer bees to get to worker bees have them lock arms and move as one entity (I often start the game this way anyway). This will make it easier for participants to pick up flowers. Game is over when all flowers are picked up. Give someone else a turn to be the killer bees. This game is very movement oriented and much fun to play!

### **Name Pass**

Before the participants begin the game they will gather around one another to make a small tight circle with their chairs. Participants will sit as close as possible while still maintaining a level of

comfort. To start the game one participant will hold a ball, say their name loudly and pass the ball to the right. Everyone will do this at least one or two times with the goal of teaching everyone their name. Once all names are spoken, the game begins! Now, the person with the ball must say the person's name that they are passing the ball to. If your name is not said correctly, do not take the ball. If a whistle is sounded, the ball should quickly switch directions. The goal is to get rid of the ball as soon as you get it. Once participants are feeling some success with the game, the instructor will begin to add more balls to the game. All balls will be traveling the same direction. The ultimate goal of the game is NOT to get stuck with two or more balls. This fun, exciting hot potato game is a true challenge. The better your participants' skill levels are during the game, the more balls the instructor can enter in to the game. If a participant gets caught with more than one ball he/she is out of the game. This game can be played as an elimination game. If the instructor does not want to eliminate participants from the game, he/she can invite everyone back in after so many rounds. When the participants re-enter the game the instructor will direct them to find a new seat aside of different players (new names to learn).

### **Scatter**

You need to separate your class into small groups of five (or six if need be). Each group will be given a soft ball as they form a small circle. You may have anywhere from 2-6 small circles around the room. Instruct each group to develop a pattern where they throw the ball to the same person every time and they receive it from the same person every time. There are NO rules about who someone can pass the ball to just so long as every group member gets the ball only one time during the pattern. At any time the instructor can yell "reverse" and the participants would keep the same pattern but they would go the other direction. (Now, they should be throwing to the person they use to receive it from, while receiving from the person they use to throw it to). Saying "reverse" a second time would take each group back to their original pattern. At any time the instructor can say "Scatter" and everyone will mill around the room by themselves in any given direction. The instructor will then yell "Freeze: Original Pattern" and each group must stay where they are and begin passing the ball in its original pattern. Some passes may be close while others may need to go across the room. This is why soft balls are a must! Participants will be completely shaken up once you change the environment. Once you see that groups have gotten back into the groove of the pattern, yell "reverse" or "scatter" again. Be sure that all balls are being passed with everyone's safety in mind.

### **Human Tangled Web**

Separate class into two groups and have each group form a circle. Ask participants to first shake and join right hands with somebody who is not to their immediate left or right. Now have them shake and join left hands with somebody different. Participants must now untangle the human web without letting go!

## Puzzle Pattern

The instructor will place 20 spots or square laminated pieces of paper on the floor (there are NO numbers on these spots). There will be five rows across and four rows down. The instructor will inform the participants that they are trying to find a pattern. The instructor is the only one that knows the pattern. There are many rules to this game that must be followed. First, the class is formed in a half circle (a line) around the pattern on the floor so that everyone can see what is happening. Second, there is no talking at any time. Third, every spot can only be stepped on one time. Fourth, a player can only step on a spot that is located to the right, left, front, back and diagonal of them. They cannot jump two spots. The first person steps on a spot. The instructor will either say “That is correct, you may take another step” or “I am sorry, but that is not correct.” Once a person is incorrect, they go to the end of the line and a new person steps on a spot. A player will continue to get to move through the pattern until they take an incorrect step. Everyone should pay close attention to see where the mistakes are being made. Eventually, everyone in the class must figure out the pattern. Remember there is no talking. If there are players that are really struggling make some exceptions or adjustments. (Hints)

Solution (This is one example of a possible solution; however there are many different ways to solve this problem. The instructor needs to have a chosen pattern in mind before the participants begin)

15	14	1	2	20
13	16	17	19	3
12	9	18	7	4
10	11	8	5	6

Debrief this activity with the class by discussing the importance of paying attention to detail. Although memory is a key component of this activity, it is also important to make predictions and try to see the big picture. Ask the question, “How was this problem solving activity

somewhat different from the other ones that we did in class so far?” Taking verbal communication away from participants that are faced with a team challenge tends to put a very interesting spin on things. I am sure that some participants felt feelings of frustration as they wanted to speak out to help their peers. The sense of interdependence is very strong in this activity.

### **Tap and Move**

Hand out balloons to your students or blow them up yourself – one per student. All students gather in the middle of the room. On your signal, students tap the balloon in the air and move to another balloon and tap it. The object is to keep all balloons in the air without letting any touch the ground. Students continue to move and tap different balloons in the air. This can be done for as long or short a period as you like.

### **“C-Ya Tag”**

Clear a large area in your room. Before the tag game begins, place some safety spots in the game boundaries (Hula-Hoops or large poster paper will work fine). While on a safety spot, players are safe from being tagged. Choose a few players to be “It,” allowing them to carry a ball they can use to tag other players. If players are not on a safety spot, they will move around the room while trying not to be tagged by a player carrying a ball. If players are tagged, they take the ball, and they are now considered to be It. If players want to be on a safety spot, they simply step on it and say, “C-ya,” to the other player on the spot. The other player has to get off the spot immediately. Note: If large safety spots are used, two players may stand on spot at one time. In this instance, a player who wants to get on to a safety spot can simply tap the shoulder of just one of the players on a safety spot while saying, “C-ya!” (Only the player tapped on the shoulder must get off the safety spot.)

### **Balloon Tap: Class Cohesion**

Activity Directions: The instructor will split the class in two equal teams. All team members will make a small, tight circle. All members of each team must stay hooked together by either joining hands or linking forearms. The instructor will give each team a balloon that is close to the size of a volleyball. Each team has to stay linked together while making their balloon pop into the air. The participants can use any part of their body to keep the balloon up, however they need to play safely and be aware of their other teammates. After each team is given a few minutes to practice with the one balloon, the instructor can add another balloon. If a balloon starts to drift away from a team, the entire team must stay linked together as they all move to get the balloon and keep it popping. After a few minutes of practice, the real game begins. This

game is a friendly competition where one team is playing against the other. The first team to earn 3 or 5 points (instructor's decision) will be the winning team. A team can earn a point by keeping their balloon in the air longer than the other team. As soon as a balloon hits the ground, the other team earns a point.

## **Teaching and Reviewing Content**

### **“Cardio Review”**

Have all participants make up multiple choice questions based on the grade level and subject area they teach (A, B, C, D). The smaller the class, the more questions participants will need to create. You will need about 20 questions. This activity can be used for reviewing multiple-choice questions. Choose a cardiovascular exercise for answers A, B, C, and D (refer to Chapter 5 for ideas). For example, A might be jumping jacks, B wall push-ups, C chair dips, and D mountain climbers. Present the class with a review question. Allow them to answer by performing the cardiovascular exercise that represents their choice. It will be easy to see which students know the correct answer. Review the correct answer and move on to the next question.

### **Number Scramble**

Activity Directions: Break class into teams of 5. Give each team member a given number on a large piece of paper (for example, one person will get the number “1”, another teammate will get a “2”, another teammate will get a “3”, etc.). Each team will have the exact same numbers. At this point, the teacher will read a number and say “go”. The first team that creates that number for the teacher to be able to read it correctly wins. Any team that starts before the word “go” automatically loses the game. Below are some sample numbers to read:

1. 52,314
2. 23,541
3. 41,235
4. 34,152
5. 12,543
6. 25,341
7. 51,423
8. 45,132
9. 31,524
10. 15,423

**The Descriptive Writing Hop** - Separate your class into six teams (Team 1 will play against Team 2, Team 3 against Team 4, and Team 5 against Team 6). Make flip cards containing various topics (vocabulary words will work well) (any words will work with adults in this activity). Place 10 paper plates per team in a straight line (30 paper plates). Have Team 1 line up on one side of the first paper plate, with Team 2 on the other side. Have the first member of Team 1 pick a flip card. She must design a descriptive sentence about that topic. She hops alongside the paper plate for each word of the sentence. All players listen carefully for accuracy. When the student is finished, the points are tallied. Now, the first member of Team 2 takes his turn (flip a card and hop out a descriptive sentence). Then it goes back to the second member of Team 1. Allow students to keep a running score as they hop to create their descriptive sentences.

**The Secondary Spin; Learning the Secondary Colors** - Ask participants to match up with a partner. Give them three pieces of colored construction paper. The paper should be the primary colors; red, blue and yellow. The instructor will shout out one of the secondary colors (orange, green and violet). Each group will have to quickly decide which two primary colors mixed together will make up the secondary color. They will then hold up the primary colors, grab elbows and begin to swing. The swinging represents the mixing of the colors to form the secondary color. You can add a little more excitement and ask participants to see if they can be one of the fastest groups to find the primary colors and start their spin. The intermediate colors can also be taught through this exercise if you would like (red-violet, red-orange, yellow-orange, yellow-green, blue-green, and blue-violet).

**Fruit and Vegetable Tag** - The instructor will set up boundaries for the game. Everyone will play the role of germs and disease by speed walking around the designated area. They will try to avoid being tagged by the fruits and vegetables. The instructor will choose one or two people (depending on class size) to be a fruit or a vegetable. For example a person holding a red ball may be a tomato. The fruits and vegetables chase the germs and disease. Once they tag them they are dead and they come out of the game. During the first round, the instructor will time the fruits and vegetables to see how long it takes them to kill the germs and disease. After each round is played, the instructor will add another fruit or vegetable to the game. The time it takes the fruits and vegetables to kill the germs and disease will get faster and faster. Note: The more fruits and vegetables in your diet, the better chance your body has of fighting off germs and disease.

**Understanding Insulin Resistance** - Line up 2 rows of four or five chairs directly across from each other creating a small aisle between them. Line up the same number of participants (as chairs), single file at the entrance of the aisle. One other participant, with a broom, should line up at the other end of the aisle facing the line of participants. Have the line of participants walk, very slowly, into the aisle (bloodstream) toward the participant with the broom (insulin). Broom person yells “hey, there’s sugar in the bloodstream” and begins walking towards the line of participants sweeping his or her broom across the floor. As the broom meets the feet of the participants in line, they should be seated in an open seat (cell). Fun and memorable! Point out

the job of insulin in this oversimplified model. Insulin is sweeping the bloodstream clear of sugar (toxic in the blood) into cells for energy use. The next step is to have participants bounce off the chairs and move back into the aisle and swim around even though the sweeping is going on (insulin resistance leading to continued abundances of sugar in the blood and the possibility of weight gain, obesity, and type 2 diabetes). Repeat as necessary to include some or all of the participants!

### **Kinesthetic Calorie Counting**

Part 1: Tell participants they are going to take a brisk five minute walk somewhere on the grounds of the facility. They may partner up or do it by themselves. Tell them it is timed and not to be used for bathroom breaks, cell calls, etc. They are taking a brisk walk around the hotel, in the school hallway, etc. If weather or conditions do not permit, put some high energy music and have them walk in place for five minutes. When they are done, let them know that they just, depending on their size and how hard they worked, burned in the range of 25 – 40 calories. How does this translate into how this helps to gain or lose weight? See the next activity.

Part 2: Participants must now pair up. Maybe find someone who they not yet worked with today. Line them up pair by pair directly in back of one another to form a straight line of pairs (just like Noah's Ark). Now tell them to interlock arms at the elbow just like they were walking down the aisle together. Each pair represents 250 calories. Tell participants that whenever a deficit or surplus of 3500 calories is lost or gained below or above calorie expenditure, one pound will be lost or gained and this is what we are representing with this kinesthetic activity.

With participants standing in a line in the center of the room, make the left hand corner, the weight loss side and the weight gain corner the right hand side. You can make any combination you want but here are some examples:

Tell the first pair they went that day and gardened for 45 minutes (about 250 calories). Send them into the weight loss or deficit corner.

Tell the second pair they went for a one hour yoga class today and burned (about 250 calories). Send them to the weight loss corner.

Pair three was bad. They snuck out and eat  $\frac{3}{4}$  of a cup of Chocolate Mint Chip ice cream, (about 250 calories). Send this pair to the weight gain corner.

You see how this works? Continue to keep track of the results and make the outcome anyway you decide.

Here are some other activities that generally burn about 250 calories, but vary according to weight and sex:

40 minutes of moderate cycling

40 minutes of in-line skating

50 minutes of softball playing

40 minutes of dancing

50 minutes of swimming

Here are some food items that equal 250 calories (or close, 240 - 260):

1 package of Reese's PB cups (2)

3 Keebler Chips Deluxe original cookies

3 slices of potato bread

2 ½ glasses of orange juice

3 waffles

Look up any activity on the internet and include them or just look in your kitchen for food items and add the servings up to 250. Have fun! The participants will get the point.

It is a general rule of thumb that safe weight loss occurs at about 1 to 2 pounds a week. In order to lose one pound a week a deficit of 3500 calories must be achieved, or 500 calories a day. If no dietary changes are made that means you would need to burn 500 extra calories a day doing some form of exercise. It could also be split up into any combination, or 250 calories of exercise and 250 fewer calories eaten would also give you the combination.

**Fruits and Vegetables Tag (Elementary)**

Activity Directions: The instructor will set up boundaries for the game. Everyone will play the role of germs and disease by speed walking around the designated area. They will try to avoid being tagged by the fruits and vegetables. The instructor will choose one or two people (depending on class size) to be a fruit or a vegetable. For example a person holding a red ball may be a tomato. The fruits and vegetables chase the germs and disease. Once they tag them they are dead and they come out of the game. During the first round, the instructor will time the fruits and vegetables to see how long it takes them to kill the germs and disease. After each round is played, the instructor will add another fruit or vegetable to the game. The time it takes the fruits and vegetables to kill the germs and disease will get faster and faster. Note: The more fruits and vegetables in your diet, the better chance your body has of fighting off germs and disease.

### **Movement and Language Arts: "Editing on the Move"**

Activity Directions: The teacher will allow the participants to work alone on this activity or with a partner. Each person or group will be given a list of sentences that need to be edited. Now let's get the participants moving! The goal for each person or group is to walk out each sentence together or alone. Students will raise their hands in the air to demonstrate a capital letter. The participants will pause for commas and slightly bend their knees. A punctuation mark must be added at the end of each sentence. The period will be demonstrated by going into the tuck position (bend down and hug your knees). The exclamation mark will be shown by jumping up and down on both feet at the same time. To demonstrate the question mark the participants will stand on one leg and make a hook-like action with the opposite arm. Also, apostrophes will be added by lifting the right arm and making a hook-like action. After all sentences are completed, the participants will compare their edited sentences while discussing any differences that they have.

### **Math and Movement: Clusters**

Activity Directions: The participants will walk in a clockwise circle around the instructor. The instructor will stand in the center of this circle. The instructor will make up various math problems using addition, subtraction, multiplication, division and word problems. The job of the participants is to get in a cluster that tells the answer to the given problem. For example, if the instructor gave the example of  $1 + 1$ , all participants would get in to clusters of two as quickly as they could. The instructor would recognize a cluster because they are standing close together with their arms linked to one another. If a participant or group of participants is unable to get in a cluster of the correct number, they are eliminated from the game. The instructor can continue to play this game as an elimination game, or he/she can allow the players back in to the game after a few rounds. This game can also be used to get participants in to working groups for an upcoming activity or cooperative project. (Make groups for solving equations, which is the next activity in this course, – teams of 6 or 7)

Activities from “Thinking on Your Feet” by Jean Blaydes (can be purchased at [www.actionbasedlearning.com](http://www.actionbasedlearning.com))

### **Greater Than Tag**

Put students in pairs. Each set of partners works at their own speed. Partners play rock, paper, scissors by hitting their fists in their palms three times. Both partners chant “I love math”. On “math”, each partner shows a number between 1 and 10 with fingers. The teacher simultaneously calls out “greater than” or “less than”. If greater than is called, the partner with the greater number of fingers becomes “IT” and chases the lesser number partner to the designated safe area. The partners can keep score of tags.

### **11-13-15**

Put students in groups of 4 or 5. Students stand facing the center of the group. Students use the “I Love Math” chant once again (See above). The goal is for all of the group’s fingers and thumbs to add up to eleven. They keep trying until they are successful. If the group is successful, they throw their arms up in the air and loudly yell “Woo Who!” The group then tries to add up to 13 and 15. You may add the rule of no talking and not showing the same number twice in a row.