


And the Kinesthetic Classroom

Missy Widmann, Michele Larter, Matt McMaster,  
Lynda Barnard, & Jacy Ramsey


### Brain Prep



#### Hand Clapping, Toe Tapping

Stand with feet shoulder width apart. 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 the hands. Repeat on other side. Try opposite arm/leg as a variation.


### Bethel School District



#### CURRENT FOCUS

- Student Engagement
- Graduation Rates
- Attendance
- Apathy

### CURRENT FOCUSES




- Testing
- Student Engagement
- Closing Achievement Gap

**65%-85% of all students are Kinesthetic Learners**  
**Males tend to remain kinesthetic into adulthood.**

Kinesthetic Learner: Is the learning style in which learning takes place by the student carrying out a physical activity, rather than listening or watching a demonstration.

### A Case Study...Naperville




#### TIMSS

Trends in International Math and Science Study

- Test designed to compare students' knowledge from different countries.
- 230,000 students (many students were "hand picked") from 38 countries took the exam.
- 97% of Naperville's 8<sup>th</sup> graders tested.

### A Case Study...Naperville



#### FIRST CLASS PERFORMANCE

- Science Section: Naperville Students finished first, just ahead of Singapore. Number one in the WORLD!
- Math Section: Naperville Students finished 6<sup>th</sup>, behind Singapore, Korea, Taiwan, Hong Kong, and Japan
- United States finished 18<sup>th</sup> in Science and 19<sup>th</sup> in Math (out of 38 countries).

### A Case Study...Naperville



- The TIMSS results caught the attention of other school districts and brain researchers.
- After evaluating the district, the educational experts' findings concluded that...

### A Case Study...Naperville



#### NAPERVILLE SCHOOL DISTRICT

- Academically ranks among Illinois' top 10
- Spend ½ \$\$ per student compared to other districts in the state of Illinois.
- Scored 24.8 on ACT exam, when the state average was 20.1 (2005)
- 2014 update: NSD 25.1 on ACT and state average is 20.4
- 2014 National ACT score 20.88

### A Case Study...Naperville



- Naperville students are the fittest in the nation (only 3% are overweight compared to the national average of 30%)
- Naperville incorporates DAILY PE, which focuses on aerobic fitness.
- Naperville's graduation rate peaked at 97% (2014 data shows 97%)

### A Case Study...Naperville



NAPERVILLE CENTRAL HIGH SCHOOL



**Naperville District 2014**  
 4 year graduation rate 95%  
 5 year graduation rate 97%

**National 2011-12 (2014 report)**  
 Graduation rate 80%

### Brain Break!



#### Mingle, Mingle, Group

Students get up and walk around "mingling" until the teacher calls out a number. Students then sit in a group of that size. Anyone left out does that number of jumping jacks (or other exercises) and then rejoins the group.

### Emerging Research & the Brain



- 30% of blood pools in the lower extremities after 20 minutes of sitting
- Physical activity provides a stimulus that prepares the brain for learning.
- Physical activity sparks biological changes that encourage brain cells to bind to one another, increasing the capacity to learn

## Emerging Research & the Brain

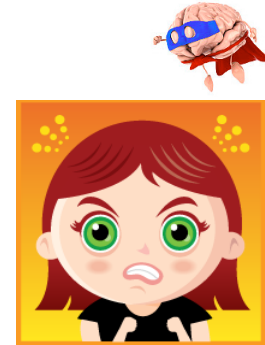


- Exercise influences the same chemicals (neurotransmitters) in the brain and has been shown to be as effective as Zoloft in controlling depression (study from Duke Univ. 1999)
- Sedentary time causes an imbalance of neurotransmitters, especially Serotonin, Norepinephrine, and Dopamine

## Serotonin

### Regulates:

- Mood
- Impulsivity
- Anger
- Aggression



## Norepinephrine

### Regulates:

- Attention
- Perception
- Motivation



## Dopamine

### Promotes:

- Learning
- Reward
- Movement
- Calm Mind
- Feeling of Satisfaction



## So What?



A student's neurotransmitters are unbalanced...

What does this student's behavior look like in your class?

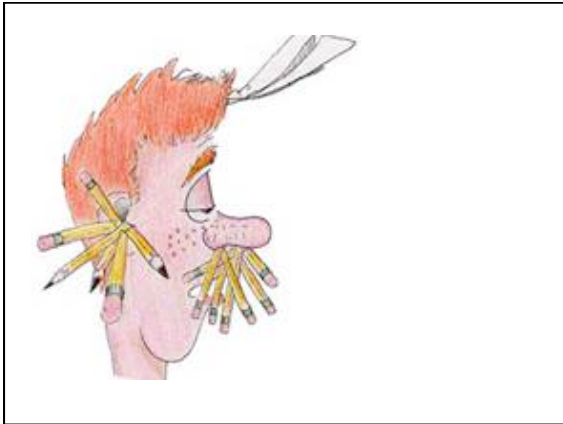
## Content Review



### PAIR SHARE WALK AND TALK

Partner students up. Allow students to take a walk around the room.

Give the students a topic from current unit.



### Kinesthetic Classroom



- Increases blood flow to the brain, which nourish brain cells and strengthen neurological connections
- Engages both sides of the brain by crossing the midline (prepares the brain for learning)
- Releases/balances neurotransmitters

### Benefits of the Kinesthetic Classroom

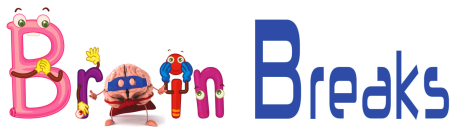


- Improves concentration, memory, and reinforces academic content.
- Improves classroom behaviors
- Addresses the kinesthetic learner!! (up to 85% of all learners)

### How to Create a Kinesthetic Classroom



- Ready the brain prior to a lesson
- Use Brain Breaks every 30 minutes of instruction
- Infuse content into kinesthetic activities
- Use Relaxation techniques to decrease testing anxiety



CREATED BY THE HEALTHY SCHOOLS TEAM:

Lynda Barnard	Jacy Ramsey	Missy Widmann
Michele Larter	Michael Sandner	Minta Wulf

Funded by a Healthy Schools Grant from the Tacoma-Pierce County Health Department

Special thanks to Diane Karl for layout design and printing by 

**BRAIN BREAKS ARE AVAILABLE FOR PURCHASE \$10.00+tax**

### Brain Prep



- Prepares brain for learning
- Improves visual tracking
- Activates both sides of brain

## Brain Prep



### HEAD/SHOULDERS/KNEES/TOES

Cross the arms across the chest and grab the ears, then uncross the arms and touch the shoulders. Now cross the arms and touch the knees. Finally, uncross the arms and touch the toes. Repeat.

How fast can you go?

## Content Review



- Small group activities
- Allows for kinesthetic review of content

## Short Story

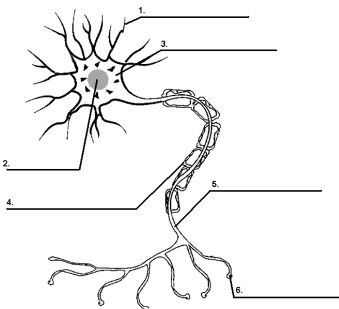


- Read a short story aloud.
- Every time a certain word is said, perform an action such as a jump, hop, wave, etc.

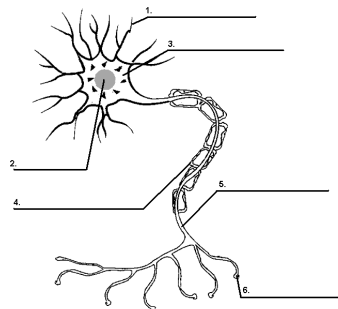
## “Good Night”



## Content Review - Neuron



## Content Review - Neuron



1. Dendrites
2. Nucleus
3. Cell Body/Soma
4. Myelin Sheath
5. Axon
6. Terminals

## Class Cohesion



- Creates a comfortable, interconnected environment
- Fun activities for the start of the year or term
- Opportunity to review classroom rules and procedures.

## Classroom Cohesion



### Handshake Partner

Partners face each other and follow teacher's instructions:

*"Right hand shake. Left hand shake. Right hand fist bump. Left hand fist bump. High five right. High five left, Double high five. Double low five."*

Repeat the pattern and challenge students to increase the speed.

## Brain Breaks



- 1-2 minute activities
- Gives hippocampus (long term memory) a necessary break
- Proven to increase long term memory and engagement

## Brain Breaks



### Finger Grab:

Students face a partner. Each student puts the right hand out in front of them, palm facing up, and places their left pointer finger on the palm of their partner. When the teacher says "GO", students simultaneously try to grab the other person's pointer finger and pull their pointer finger away from the palm of the other person.

## POP QUIZ!

- TESTING ANXIETY!!!
- Have a plan for those students.

## Chair Yoga & Guided Imagery



- Releases tension from spine
- Increases muscle tone and flexibility
- Decreases testing anxiety

## Guided Imagery

Addressing Testing Anxiety



Sit with your head resting on your desk. Close your eyes and focus on breathing with a deep inhale and complete exhale. Address the anxiety that you are feeling about taking this exam. Notice how your heart rate increases and you feel butterflies in your stomach. With every inhale and exhale visualize releasing one or two butterflies. Notice how your heart rate begins to slow. Allow your body to become lighter and lighter with every breath.

## Quiz

1. Brain Breaks should only take
  - A. 1-2 Minutes
  - B. 10 minutes
  - C. An entire class period
  - D. None of the above

## Quiz

2. Kinesthetic students represent \_\_\_\_ of the classroom.
  - A. 20-30%
  - B. 65-85%
  - C. 5-10%
  - D. >2%

## Quiz

3. Research shows that physical activity improves...
  - A. Concentration
  - B. Learning
  - C. Engagement (right & left brain)
  - D. All of the above

## Quiz

4. The 2015 World Series Champions will be...
  - A. Seattle Mariners
  - B. Saint Louis Cardinals
  - C. Boston Red Sox
  - D. None of the above

## References



- Budde, H, Voelcker-Rehage, C., Pietrasyk-Kendziorra, Tido, G. (2008) Acute coordinative exercise improve attentional performance in adolescents. Germany: University.
- "Can exercise make you smarter?" [www.msnbc.msn.com/Carmichael, M., 2013. Web. 7 May. 2013](http://www.msnbc.msn.com/Carmichael, M., 2013. Web. 7 May. 2013)
- Ratey, J. (2008) Spark: The revolutionary new science of exercise and the brain. New York: Hatchette Book Group.
- "Washington State Report Card." *Www.reportcard*. Ed. Randy Dorn. Washington State, 2013. Web. 9 Jan. 2015.
- "Illinois State Report Card." *www.reportcard*. Ed. Christopher Koch, Ph.D. Illinois State, 2014. Web. 9 Jan. 2015
- "2014 Illinois School Report Cards." *Naperville North High School*. N.p., n.d. Web. 11 Jan. 2015.
- "Improving college and career readiness and success for everyone." ACT. N.p., n.d. Web. 04 Mar. 2015.
- Us Department of Education. N.p., n.d. Web. 4 Mar. 2015.