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*The Cranium Connection (AKA "The Brain Theater")*

***Our Mission:*** To educate and empower North Carolina's children, youth and their families to make choices that lead to positive health behaviors.

***Our Vision:*** That all North Carolina children lead healthy lifestyles.

What evidence do we  
have to show  
the link between good  
health and school  
performance?



# Poor Nutrition Equals Poor Learning



- Irritability and behavior problems
- Difficulty concentrating and performing complex tasks
- Reduced energy levels
- More illness and more missed class time
- Reduced cognition

Source: Successful Students Eat Smart and Move More

# Poor Nutrition Equals Poor Learning

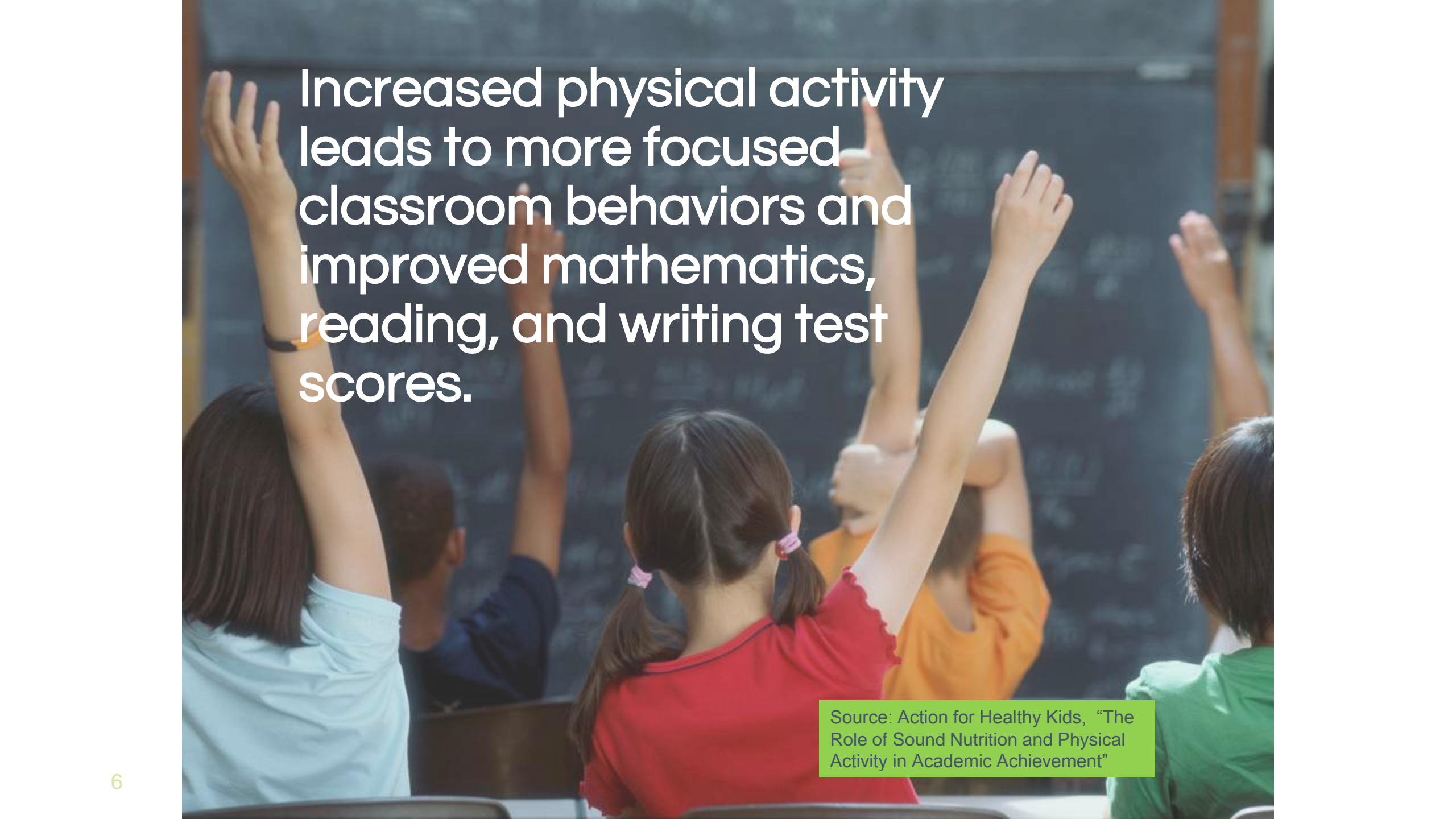
Poor nutrition leads to lower tests scores on:

- vocabulary
- reading comprehension
- arithmetic
- general knowledge



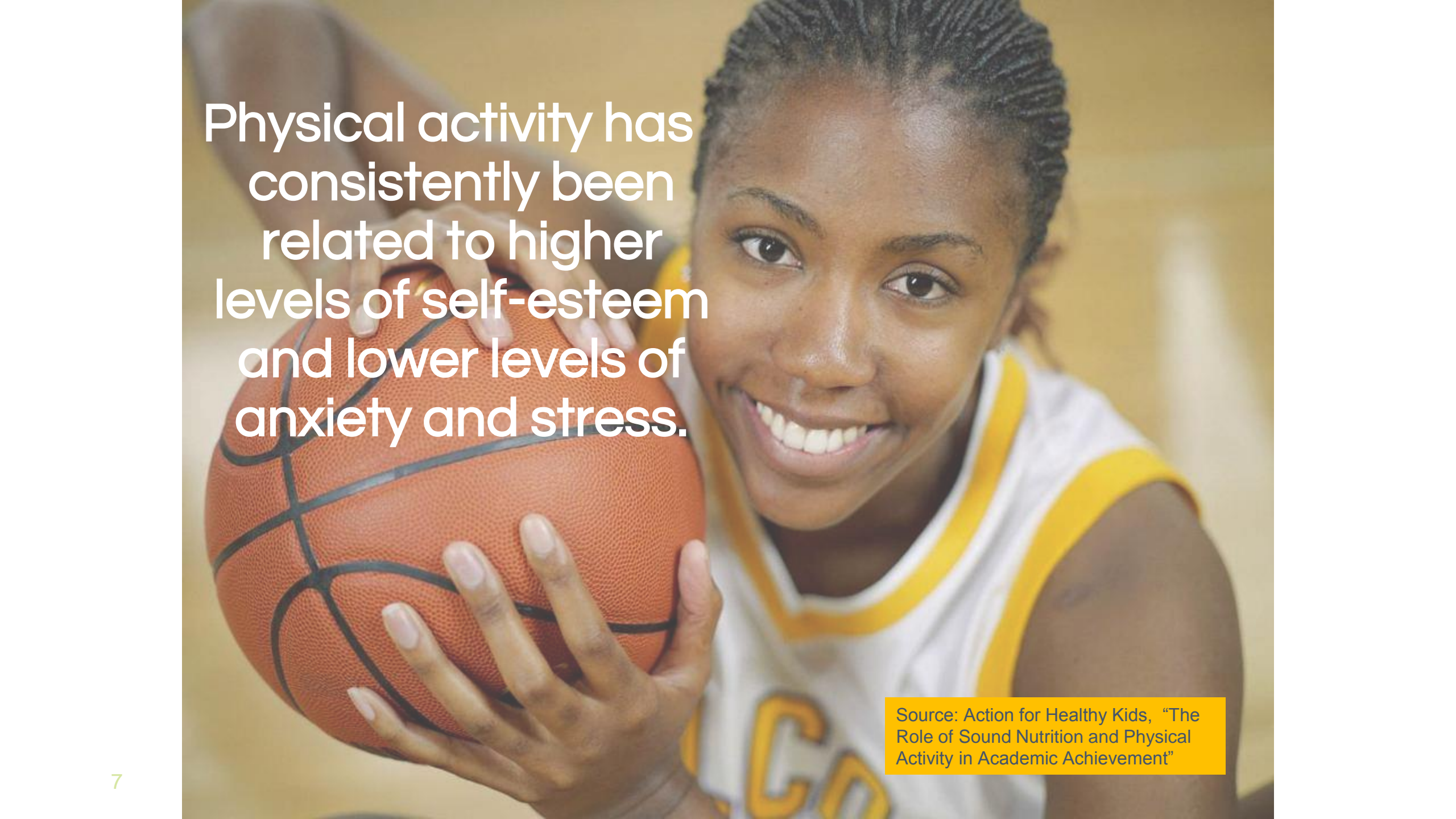
Source: Action for Healthy Kids, "The Role of Sound Nutrition and Physical Activity in Academic Achievement"



A photograph of a classroom from a rear perspective. Several students are seated at desks, and their hands are raised in the air, indicating they want to answer a question or participate. The students are wearing various colored shirts: light blue, dark blue, red, orange, and green. The background is a dark chalkboard with some faint writing. The overall atmosphere is one of active participation in a lesson.

Increased physical activity leads to more focused classroom behaviors and improved mathematics, reading, and writing test scores.

Source: Action for Healthy Kids, "The Role of Sound Nutrition and Physical Activity in Academic Achievement"

A young Black woman with her hair in braids, wearing a white basketball jersey with yellow trim, is smiling warmly at the camera while holding a basketball with both hands. The background is a blurred indoor setting, likely a gymnasium.

Physical activity has consistently been related to higher levels of self-esteem and lower levels of anxiety and stress.

Source: Action for Healthy Kids, "The Role of Sound Nutrition and Physical Activity in Academic Achievement"





Nearly half of young people  
ages 12-21 do not get physical  
activity on a regular basis.

National Association for Sport and  
Physical Education,  
“P.E.4Life Fact Sheet on Physical  
Activity and Obesity”





SCHOOL PROGRAMS

Since [No Child Left Behind](#) was enacted in 2001, the [Center on Education Policy](#) reported by the sixth year recess time nationally had dropped an average of 50 minutes per week.

# School Wellness: Why Does It Matter?

"Millions of students get most of their physical activity and eat and drink as much as half of their total calories in the healthy options offered during the school day."

--David Satcher, M.D., Ph.D,  
16th Surgeon General of the United States

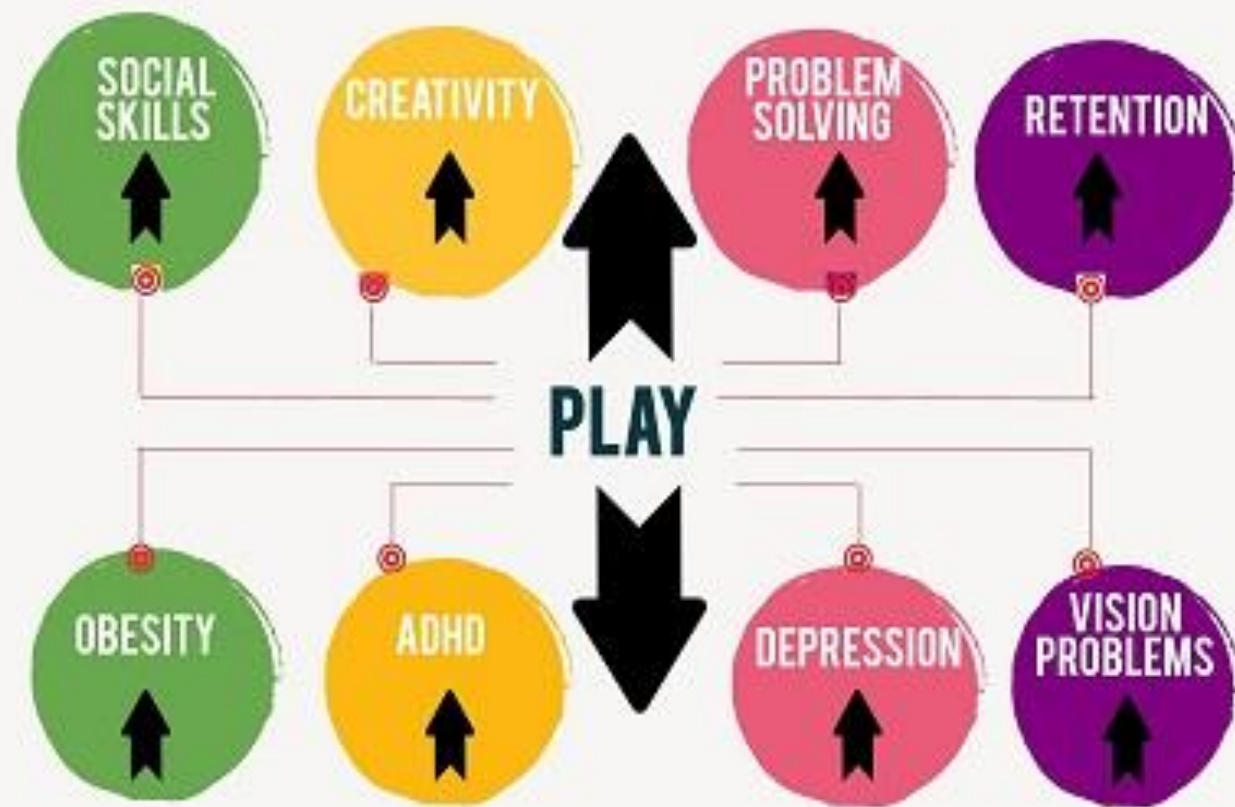
# The Copenhagen Consensus Conference 2016

“Time taken away from academic lessons in favour of physical activity has been shown to not come at the cost of scholastic performance in children and youth.”

Bangsbo J, et al Br J Sports Med 2016;0:1-2.



## EFFECTS OF INCREASED AND DECREASED PLAY



Source: A study by the National Wildlife Federation, entitled *Whole Child: Developing Mind, Body and Spirit through Outdoor Play*.

# active kids learn better



physical activity at school is a win-win for students and teachers

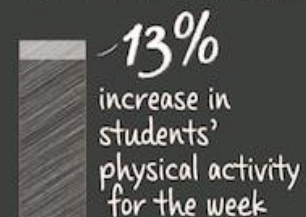
GRADES:



STANDARDIZED TEST SCORES:

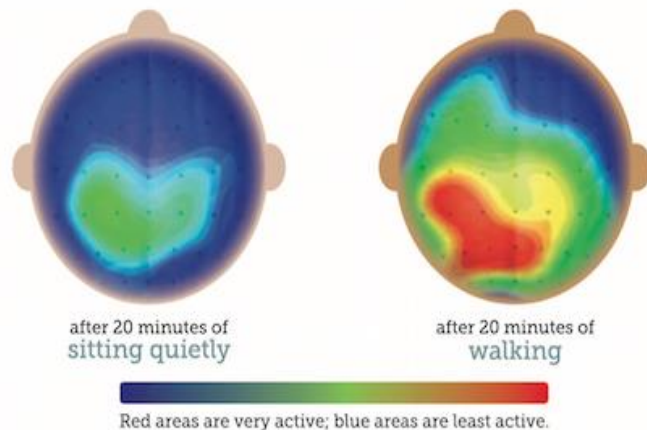


JUST ONE PHYSICALLY ACTIVE LESSON CREATES:



## physically active kids have more active brains

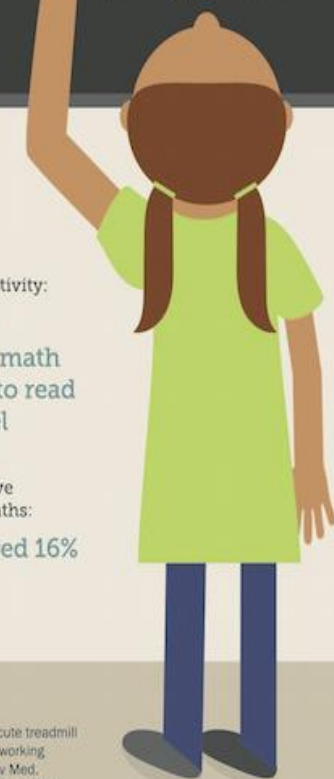
BRAIN SCANS OF STUDENTS TAKING A TEST:



MORE RESULTS:

after 20 minutes of physical activity:  
students tested better in reading, spelling & math and were more likely to read above their grade level

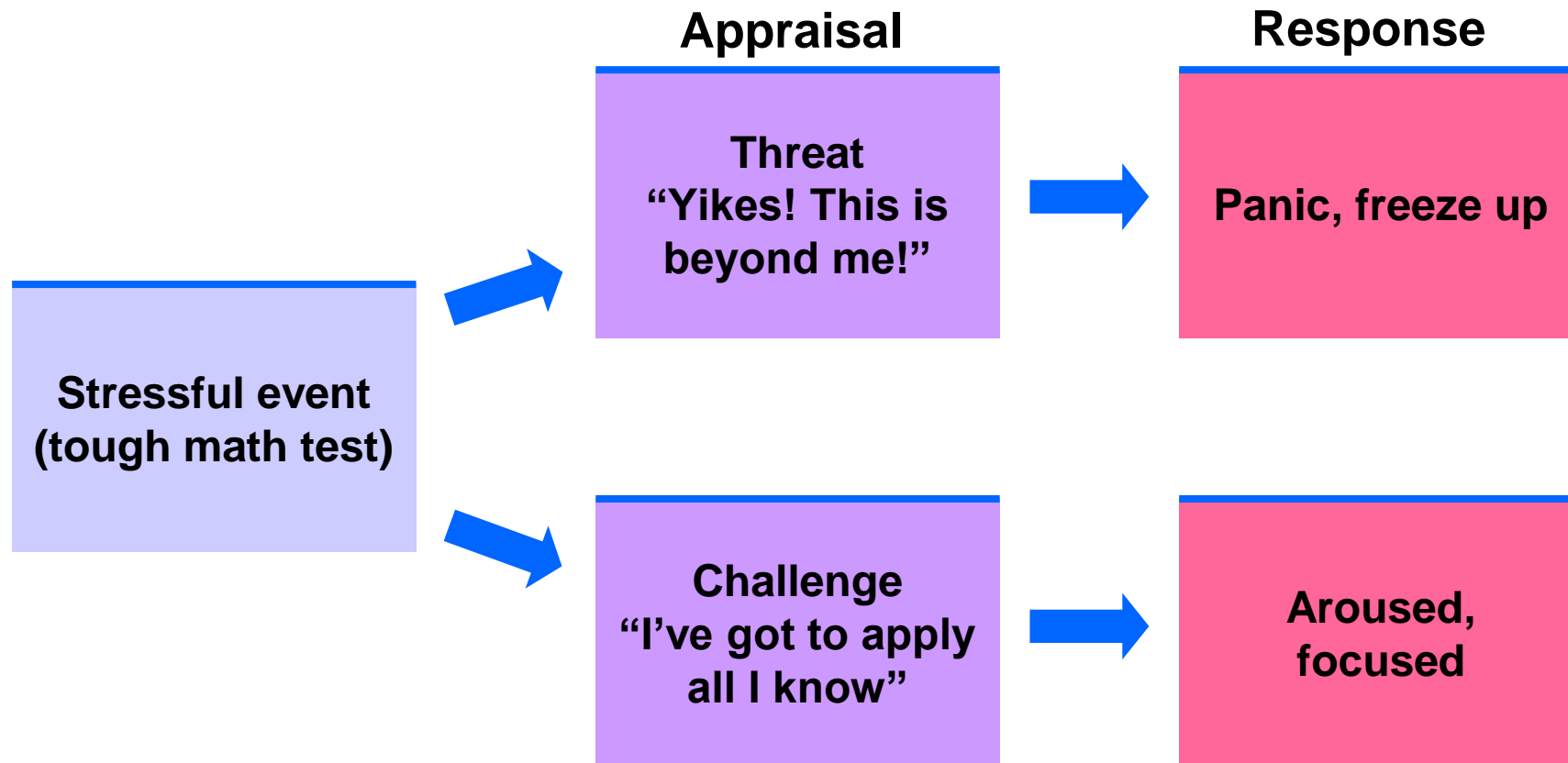
after being in a physically active afterschool program for 9 months:  
memory tasks improved 16%



SOURCES: Donnelly J.E. and Lambourne K. (2011). Classroom-based physical activity, cognition, and academic achievement. *Prev Med*, 52(Suppl 1):S36-S42. Hillman C.H. et al. (2009). The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children. *Neuroscience*, 159(3):1044-1054. Kamijo K. et al. (2011). The effects of an afterschool physical activity program on working memory in preadolescent children. *Dev Sci*, 14(5):1046-1058. Kibbe D.L. et al. (2011). Ten years of TAKE 10!: Integrating physical activity with academic concepts in elementary school classrooms. *Prev Med*, 52(Suppl 1):S43-S50. Nelson M.C. and Gordon-Larson P. (2006). Physical activity and sedentary behavior patterns are associated with selected adolescent health risk behaviors. *Pediatrics*, 117(4): 1281-1290.

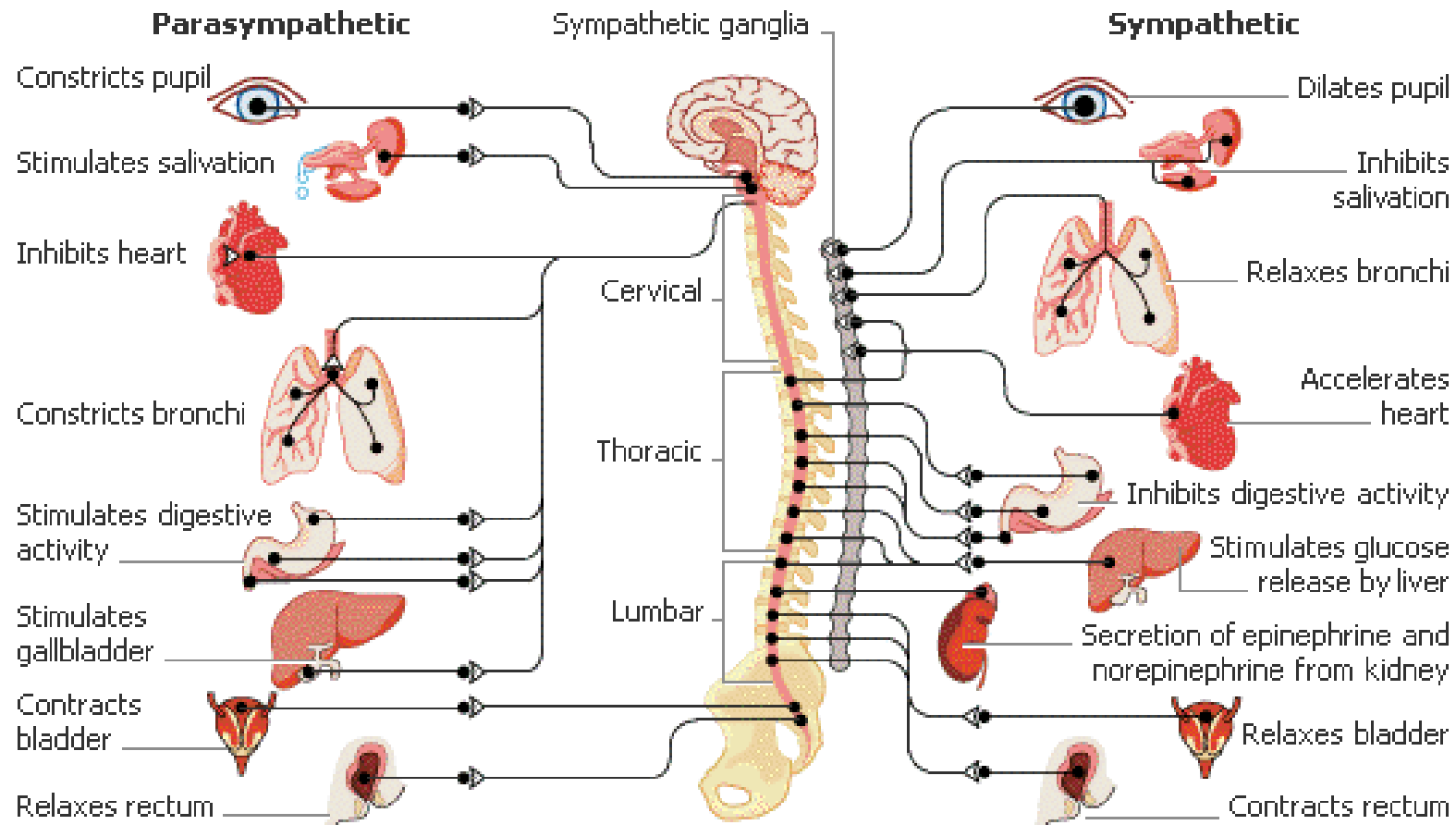
# Stress Appraisal

We choose how we appraise a stressor. Next time you are faced with a stressor, think about whether you are appraising it as a threat or a challenge.





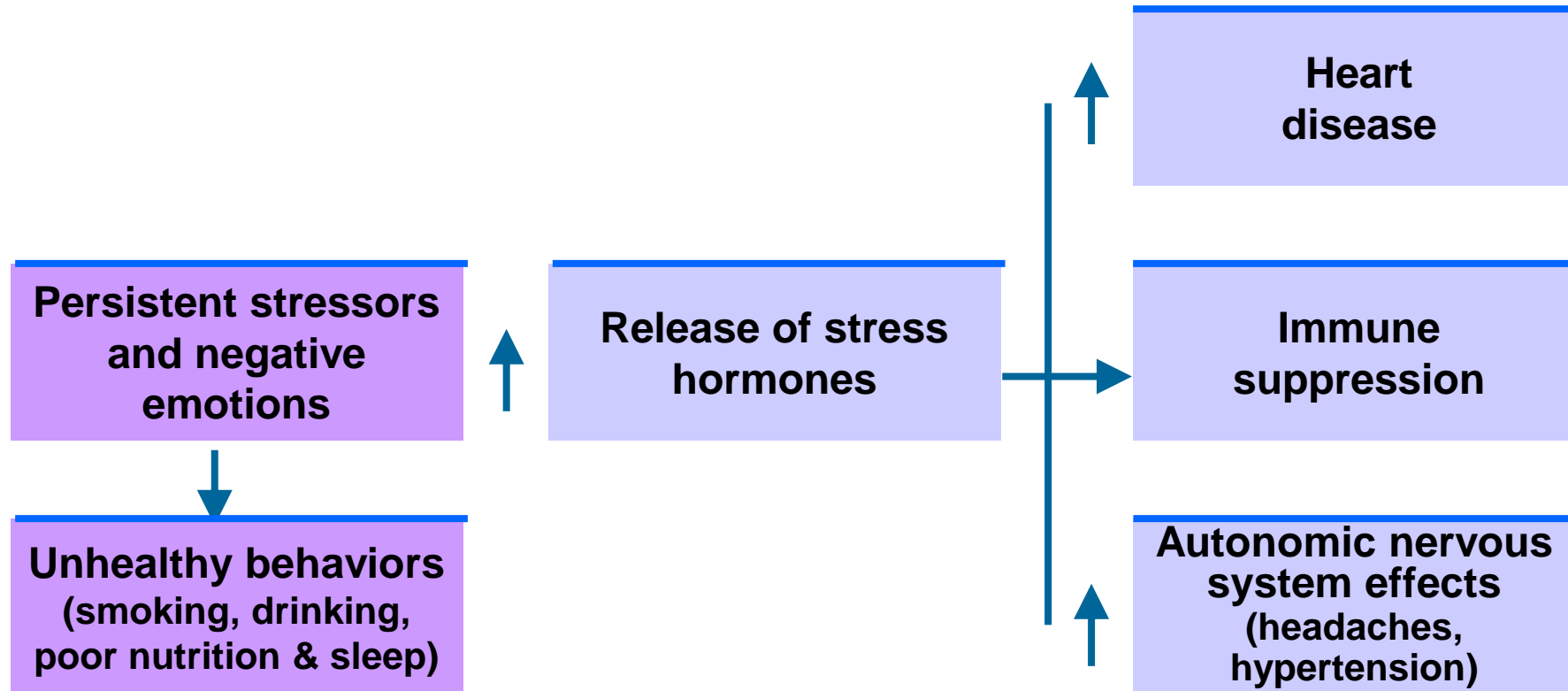
# Nervous System



# Stress and Disease



- Negative emotions and health-related outcomes



# Time to Take Action

- Establishing healthy behaviors at a younger age is easier than trying to change unhealthy ones years later.
- Create a school environment that supports positive health behaviors.





# Breath for calm

- Equal Part (Ratio) Breath
  - great for beginners, intention 5-6 breaths per minute
- Cooling Left Nostril Breathing
  - Calming, in left out right
- Bee's Breath
  - Humming sound relieves stress
  - <http://www.psychologytoday.com/blog/minding-the-body/201111/hum-happy-tune-wellness>
- 8 Step Breath
  - Eight short inhales followed by a long exhale. (Visual cue: children's slide)

Also visit Duke Integrative Medicine <http://www.dukeintegrativemedicine.org/> for scholarly research on mindfulness!



# Breath for energy

- Breath of Joy\*
  - Stand with feet apart, 3 inhales and exhale release with arms falling to sides.
- Bellows Breath (Bhastrika)\*#
  - Seated, long spine, fists inside shoulders hugging the body, press hands wide overhead on inhale, return to crossed chest on exhale
- Right Nostril Breath
  - Increases heat, energy (in right out left)

\*Avoid if high blood pressure is uncontrolled

#Avoid if you have panic disorder



# How Can We Help?



- Include classroom energizers
- Re-think classroom rewards
- Explore opportunities for physical activity
- Keep physical activity positive
- Offer smart food options at meetings and events
- Model the behavior you want to see



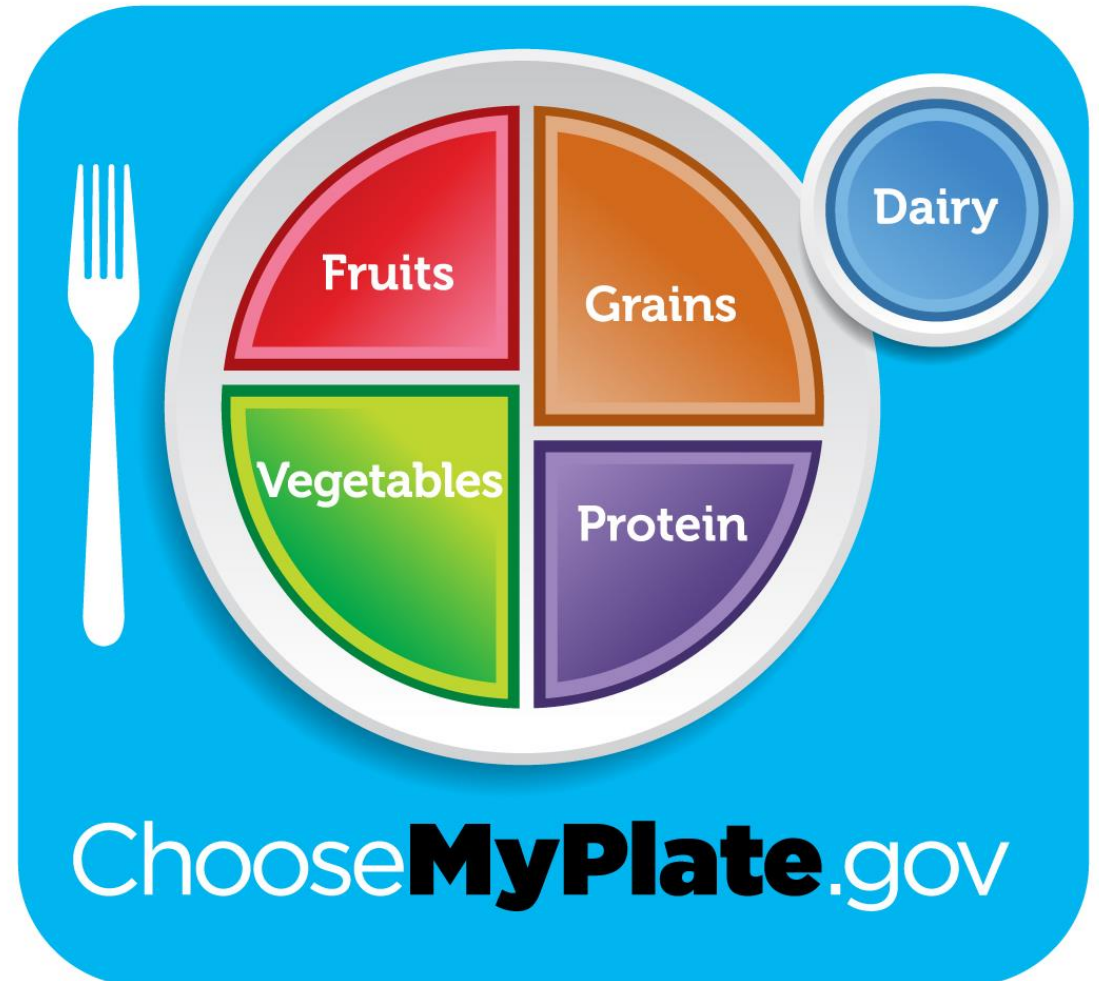
# Integrate into the Core Curriculum

## Younger Youth

- Arts and crafts with My Plate
- Mazes
- Word Search
- Stories
- Beach Ball Questions

## Older Youth

- Math - nutrition facts label and recipes
- Science - learn about food and specific nutrients impact on body functions
- Social Studies - world history and culture related to food



# Group Activity

Break into 5 groups

- Math (equal sign)
- ELA (book)
- Science (beakers)
- Social Studies (statue of liberty)
- Art (paint brushes)

How would you incorporate stress reduction, nutrition or physical activity into one of these academic subjects?



# Debrief and Review

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"I want to be a lawyer - they still get recess."



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