

What are the Active Schools: Core 4+ and Why Should Schools Use the Core 4+ Strategies?

Core 4+ is a set of five school-related strategies to increase student physical activity. The strategies are:

1. Active Physical Education (PE) Minutes
2. Active Classrooms
3. Active Recess/ Open Gym
4. Active Before and After School
- + Family and Community Physical Activity

The Core 4+ strategies were field tested as part of an Active Schools project from 2010 – 2012. As a result of the project, the Core 4+ strategies were selected because they:

- are underutilized;
- are relatively no or low cost;
- have the potential to involve many of the students in a class or school;
- are most feasible to implement;
- are easy to adopt and do not have a lot of barriers to implementation;
- are sustainable.

The Core 4+ strategies are consistent with the Wisconsin Standards for Physical Education and recommendations from national initiatives such as Let’s Move, NASPE, SHAPE-America (AAHPERD), and CDC Adolescent and School Health.

Comparison of National Recommendations and Core 4+ Strategies

Comprehensive School Physical Activity Program (CSPAP) [Let’s Move Active Schools, NASPE & SHAPE America]	Core 4+
1. Physical Education (minutes/week, active minutes in class, standard curriculum, PE grading and fitness testing, optimal class size and no waivers out of PE)	1. Active Minutes in Class
2. Physical Activity During School (active classrooms, active recess/open gym, safe facilities)	2. Active Classrooms 3. Active Recess / Open Gym
3. Physical Activity Before and After School (Intramurals, interscholastic sports, active transportation, access to facilities and programming before and after school)	4. Before and After school
4. Family and Community Involvement (joint use agreements)	+ Family & Community PA
5. Staff Involvement (staff wellness, no withholding of physical education/physical activity as punishment, professional development)	Online resources and training provided

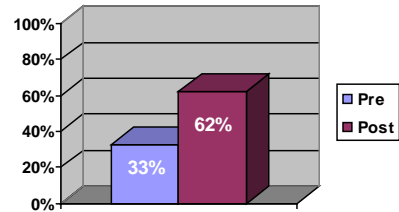
In addition, providing physical activity is a key role for schools and is linked to better academic outcomes
http://www.cdc.gov/healthyyouth/physicalactivity/toolkit/factsheet_pa_guidelines_schools.pdf
http://www.cdc.gov/healthyyouth/health_and_academics/

Wisconsin Active Schools Project Results from 2010 - 2012

The Wisconsin Active Schools project demonstrated that schools could implement and sustain strategies to increase physical activity.

Strategy 1: Active minutes during physical education class – Schools were asked what percent of PE class the students were physically active. The percentage of schools that measured class activity time increased from 81% to 100%. The percentage of schools that had students active for >70% of class time increased from 33% to 62%.

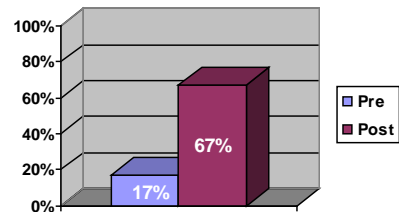
Likelihood of sustaining this strategy = 100%



Active >70% of PE class: ↑ 88% from baseline

Strategy 2: Active classrooms – Elementary and middle schools were asked if they had active classrooms where students take physical activity breaks in classes outside of physical education class. Of the 18 schools, only three reported that they had active classrooms in the pre measurement (17%). In the post measurement, that number increased to 67%.

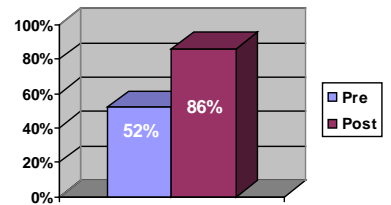
Likelihood of sustaining this strategy = 50%



Active classroom: ↑ 294% from baseline

Strategy 3: Before and After school – All the schools were asked if they had before or after school programs where students could be physically active. 52% reported that they had open gym time in the pre measurement. In the post measurement, that number increased to 86%.

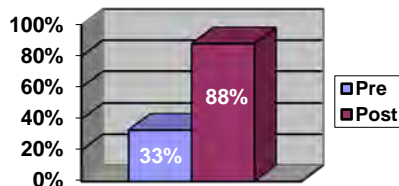
Likelihood of sustaining this strategy = 90%



After school programs: ↑ 65% from baseline

Strategy 4: Active recess – Elementary and middle schools were asked if they had structured active recess. Of the 18 schools, only six reported that they had active recess in the pre measurement (33%). In the post measurement, that number increased to 88%.

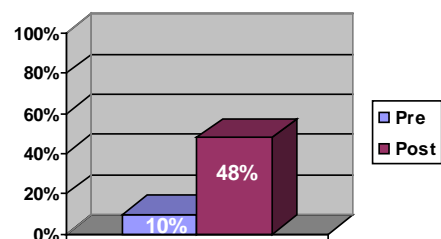
Likelihood of sustaining this strategy = 75%



Active Recess: ↑ 167% from baseline

Strategy +: Physical activity with the Family and in the Community – All the schools were asked if they had home or community programs for recording physical activity outside the school PE class time that can be applied to the PE grade. 10% reported that they had a home or community option in the pre measurement. In the post measurement, that number increased to 48%.

Likelihood of sustaining this strategy = 100%



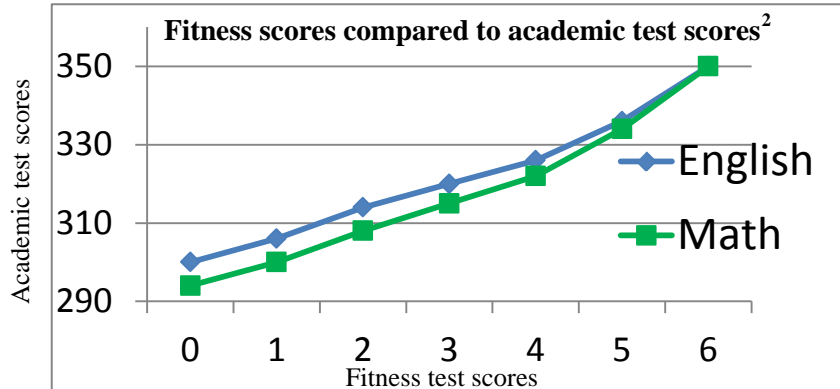
Home/Community programs: ↑ 380% from baseline

Likelihood of sustaining a strategy was based on final interview with participating schools.

Key Additional Benefit – Fit Children Do Better Academically

Why schools? The Institute of Medicine’s 2012 report on obesity prevention calls for schools to become the national focal point for obesity prevention, and for all local education agencies and schools to adopt requirements for high-quality physical education — which includes a focus on skill development — and opportunities for daily physical activity outside of physical education.¹

Study finds that fit kids are more likely to pass math and reading tests.³



A Word on Impact

Since the ultimate goal is the amount of impact, you can try to quantify the impact when you are deciding on what strategies to select. Think in terms of using this formula:

$$\text{Reach} \times \text{Dose} = \text{Impact}$$

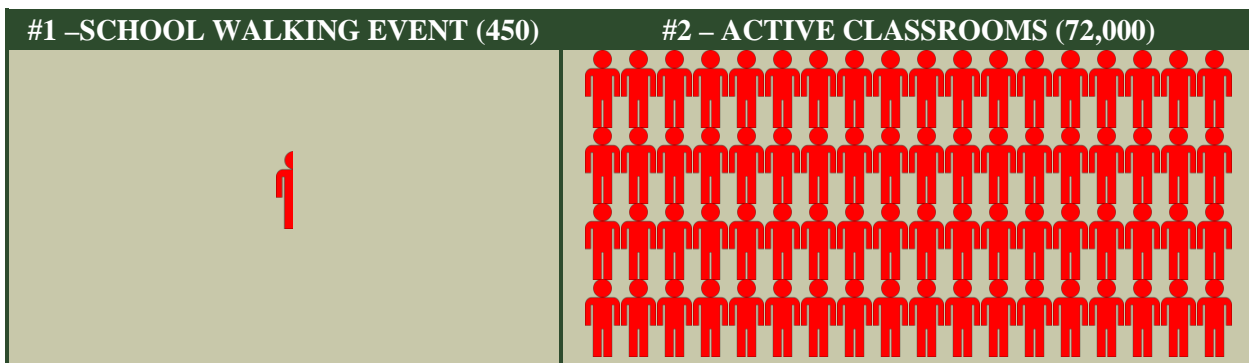
Reach is how many people in the targeted population are being affected.


Dose is how much of a given strategy is occurring, which we’ll measure using 10 minutes as one “dose” of physical activity.

Let’s look at the impact for these two sample initiatives for an elementary school of 200 students:

Scenario #1 – The school holds a “1-day walking event”. About 150 students participate (reach) and the average student walks for 30 minutes (dose), which is equal to three doses. The total impact is $150 \times 3 = 450$.

Scenario #2 – The school implements an Active Classroom policy and all classrooms and students participate daily in 10 minutes of activity in the morning and 10 minutes of activity in the afternoon (2 doses/day). The 200 students participate all year long or about 180 school days. So the total impact is $200 \text{ students} \times 2 \text{ doses/day} \times 180 \text{ days} = 72,000$.



 = 1,000

You can see that the ongoing policy and programming change supporting an Active Classrooms program has a much larger impact (72,000 to 450). In selecting strategies, try to pick activities that involve a large percentage or all of the students (reach) and provide a regular opportunity for them to be active (dose).

Research on Change in Active Minutes from Various Strategies

Active PE Minutes:

- Standardized Physical Education curricula creates an additional **6 minutes** of MVPA more than traditional physical education.
David R. Bassett, Eugene C. Fitzhugh, Gregory W. Heath, Paul C. Erwin, Ginny M. Frederick, Dana L. Wolff, Whitney A. Welch, Aaron B. Stout, Estimated Energy Expenditures for School-Based Policies and Active Living, American Journal of Preventive Medicine, Volume 44, Issue 2, February 2013, Pages 108-113, ISSN 0749-3797, <http://dx.doi.org/10.1016/j.amepre.2012.10.017>.
(<http://www.sciencedirect.com/science/article/pii/S0749379712008057>)

Active Classrooms:

- The average number of minutes per day of MVPA that can be gained when using active class room strategies is **19 minutes**.
David R. Bassett, Eugene C. Fitzhugh, Gregory W. Heath, Paul C. Erwin, Ginny M. Frederick, Dana L. Wolff, Whitney A. Welch, Aaron B. Stout, Estimated Energy Expenditures for School-Based Policies and Active Living, American Journal of Preventive Medicine, Volume 44, Issue 2, February 2013, Pages 108-113, ISSN 0749-3797, <http://dx.doi.org/10.1016/j.amepre.2012.10.017>.
(<http://www.sciencedirect.com/science/article/pii/S0749379712008057>)
- Adding physical activity minutes into curriculum does not hinder student academic achievement. Adding minutes to academic or curricular subjects by taking time from physical education programs does not enhance grades in these subjects and may be detrimental to student health.
Trudeau, F. & Shephard, R. (2008). Physical education, school physical activity, school sports and academic performance. International Journal of Behavioral Nutrition and Physical Activity, 5:10.
- Physical activity breaks interspersed throughout the day also can contribute to improved cognitive skills and enhanced concentration, as well as improved classroom behavior.
United States Department of Health and Human Services (2010). The association between school-based physical activity, including physical education, and academic performance. Atlanta: Centers for Disease Control and Prevention.
(http://www.cdc.gov/healthyyouth/health_and_academics/pdf/pa-pe_paper.pdf)

Active Recess:

- Ready for recess strategies add an additional **4-5 minutes** of MVPA.
Huberty, J. L., Siahpush, M., Beighle, A., Fuhrmeister, E., Silva, P. and Welk, G. (2011), Ready for Recess: A Pilot Study to Increase Physical Activity in Elementary School Children. Journal of School Health, 81: 251–257. doi: 10.1111/j.1746-1561.2011.00591.x
- Modified recess using active recess strategies, adds an additional **5 minutes** of MVPA compared to traditional recess. Modified playgrounds can add an additional **6 minutes** of MVPA compared to traditional playgrounds.
David R. Bassett, Eugene C. Fitzhugh, Gregory W. Heath, Paul C. Erwin, Ginny M. Frederick, Dana L. Wolff, Whitney A. Welch, Aaron B. Stout, Estimated Energy Expenditures for School-Based Policies and Active Living, American Journal of Preventive Medicine, Volume 44, Issue 2, February 2013, Pages 108-113, ISSN 0749-3797, <http://dx.doi.org/10.1016/j.amepre.2012.10.017>.
(<http://www.sciencedirect.com/science/article/pii/S0749379712008057>)

Before & After School:

- The average number of minutes per day of MVPA that can be gained when using active before and after school strategies is **10 minutes**.
David R. Bassett, Eugene C. Fitzhugh, Gregory W. Heath, Paul C. Erwin, Ginny M. Frederick, Dana L. Wolff, Whitney A. Welch, Aaron B. Stout, Estimated Energy Expenditures for School-Based Policies and Active Living, American Journal of Preventive Medicine, Volume 44, Issue 2, February 2013, Pages 108-113, ISSN 0749-3797, <http://dx.doi.org/10.1016/j.amepre.2012.10.017>.
(<http://www.sciencedirect.com/science/article/pii/S0749379712008057>)

- A number of options — including intramural activities, interscholastic sports, active transport to school, activity clubs, youth sports and traditional daycare/after-school programs — exist to promote physical activity for students during the hours before and after school and provide for increased minutes of MVPA per day. Beighle, A. & Moore, M. (2012). Physical activity before and after school. *Journal of Physical Education Recreation and Dance*, 83(6), 25-28.
- Active commuting to and from school is linked with a significant increase in MVPA of on average **16 minutes**. David R. Bassett, Eugene C. Fitzhugh, Gregory W. Heath, Paul C. Erwin, Ginny M. Frederick, Dana L. Wolff, Whitney A. Welch, Aaron B. Stout, Estimated Energy Expenditures for School-Based Policies and Active Living, *American Journal of Preventive Medicine*, Volume 44, Issue 2, February 2013, Pages 108-113, ISSN 0749-3797, <http://dx.doi.org/10.1016/j.amepre.2012.10.017>. (<http://www.sciencedirect.com/science/article/pii/S0749379712008057>)
- Walking to school initiatives increase levels of physical activity. Cooper, A.R., Page, A.S., Foster, L.J. & Qahwaji, D. (2003). Commuting to school: Are children who walk more physically active? *American Journal of Preventive Medicine*, 25, 273-276.

Family & Community:

- A truly successful comprehensive school physical activity program works with students, faculty, staff, parents and others to engage in physical activity offerings in settings both within the school and in the community which fosters the development of a lifetime of physical activity. National Association for Sport and Physical Education (2008). *Comprehensive school physical activity programs* [Position statement]. Reston, VA: Author.
- One component of the Children’s Health, Activity and Nutrition: Get Educated! (CHANGE!) Project was homework tasks outside of the school day. The intervention positively influenced body size outcomes and light physical activity. Fairclough et al.: Promoting healthy weight in primary school children through physical activity and nutrition education: a pragmatic evaluation of the CHANGE! Randomized intervention study. *BMC Public Health* 2013 13:626.
- A six week ‘Healthy Homework’ program led to a significant intervention effect of 2,830 steps per day in primary school students in New Zealand. Examples of the physical activity tasks include family walks around the neighborhood, walking to and from school, limiting television time, coaching parents in a particular sport, inventing a fun game (individual or team), testing the fitness of the family, and swimming at the local pool. Duncan et al.: Efficacy of a compulsory homework programme for increasing physical activity and healthy eating in children: the healthy homework pilot study. *International Journal of Behavioral Nutrition and Physical Activity* 2011 8:127.

Healthier students do better academically:

- Basch, C.E. (2010). Healthier students are better learners: A missing link in efforts to close the achievement gap. *Equity Matters*, 6. New York: The Campaign for Educational Equity
- The association between school-based physical activity, including physical education, and academic performance. Atlanta: Centers for Disease Control and Prevention. http://www.cdc.gov/healthyyouth/health_and_academics/pdf/pa-pe_paper.pdf
- Trudeau, F. & Shephard, R. (2008). Physical education, school physical activity, school sports and academic performance. *International Journal of Behavioral Nutrition and Physical Activity*, 5:10.
- Hillman, C., Pontifex, M., Raine, L., Castelli, D. Hall, E. & Kramer, A. (2009). The effect of acute treadmill walking on cognitive control & academic achievement in preadolescent children. *Neuroscience*, 159:1044-1054.

¹ Glickman, D., Parker, L., Sim, L.J., Cook, H. & Miller, E.A., (Eds.) (2012) *Accelerating progress in obesity prevention: Solving the weight of the nation*. Committee on Accelerating Progress in Obesity Prevention. Food and Nutrition Board. Institute of Medicine.

² A Study of the Relationship Between Physical Fitness and Academic Achievement in California Using 2004 Test Results

³ *Journal of Pediatrics*, August 2013