Since many students were kinesthetic learners, Robin came up with “math words” to say when doing familiar dance steps. The first dance that was developed was the “Macarena,” and the hand motions used in that song were perfect for naming the place value portions: ones, tens, hundreds, comma, etc.

Since then, many other songs/dances have been developed to familiar songs – “The Electric Slide” and “Walk Like an Egyptian” for multiplication facts, “The Capid Shuffle” for long division, “The Hokey Pokey” for steps in figuring out volume, “We Are Family” for fractions and decimals, “The Chicken Dance” for polygons, “YMCA” for angles, “Boot Scoot Boogie” for a special way to figure out 9s, and “Celebration” for data collection and analysis.

Through these dances started out as a way to reach students academically, they now have another important motive: getting the students up and moving! The students love these dances and look forward to each Friday – the day they get to sing and dance. Toward the last week of school, students will get into groups and develop their own dance incorporating math concepts and perform for the rest of the class.

**Recommended Action Step**

Delaware policymakers should join the 12 other states that have supported student learning, attendance and positive behavior by enacting legislation requiring 150 minutes of physical activity weekly for elementary school students.

**Summary**

Recent studies show the importance of schools implementing physical activity and the strong relationship between physical fitness and student success. The 2011 Delaware Fitnessgram® study conducted by the Delaware Department of Education and Nemours Health & Prevention Services showed that Delaware students who are more physically fit perform significantly better in both reading and mathematics, and students who are less physically fit exhibit significantly lower scores in reading and mathematics. In addition, the latter experienced significantly more suspension days and absences.1 Similar studies in California and Texas demonstrated that students with high Fitnessgram® scores have better overall school performance according to a variety of measures.2, 3

Fitnessgram® is an evidence-based tool created in 1982 by the Cooper Institute. It assesses student aerobic capacity, body composition, strength, endurance and flexibility. These benchmarks represent a level of fitness necessary for good health.4

**Physical Activity in Schools**

Regular physical activity is essential for children’s health, quality of life and achievement of a healthy lifestyle. A growing body of research correlates students’ physical fitness to better concentration, reduced disruptive behaviors, and higher test scores in reading, math and writing.5 In response, there is a nationwide movement to promote student physical activity opportunities in schools.6

The 2008 Physical Activity Guidelines for Americans and 2010 Dietary Guidelines for Americans indicate that children should be physically active for 60 minutes or more each day. The Institute of Medicine (IOM) recommends that children accumulate a minimum of 60 minutes of moderate to vigorous physical activity daily and that schools ensure all students participate in a minimum of 30 minutes of moderate to vigorous physical activity during the school day.7

A significant majority, 72 percent, of Delaware’s elementary schools are successfully working towards reaching 150 minutes of moderate to vigorous physical activity for students weekly. Teachers, staff and administrators involved in these efforts report their students behave better, are more ready to learn and are receptive to lessons integrated with physical activity. A statewide policy to ensure 150 minutes of moderate to vigorous physical activity in elementary schools will enable Delaware to join 12 other states that promote children’s academic achievement with policies ensuring sufficient physical activity during the school day.8

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**Notes**


3 Texas Education Agency. Physically fit students more likely to do well in school, less likely to be disciplinary problems. Austin, Texas; March 2009.


26 NHPS analysis of Florida and Texas legislative fiscal notes and North Carolina’s public documents regarding physical activity regulations.


32 NHPS analysis of Florida and Texas legislative fiscal notes and North Carolina’s public documents regarding physical activity regulations.

Studies have shown that physical activity is linked to better concentration, reduced disruptive behaviors and higher test scores in reading, math and writing. A recent study demonstrates that exercise improves executive function (i.e., planning behaviors such as self-regulation and self-monitoring) and academic performance, and increases brain activation. The Delaware Department of Education (DOE) and Nemours Health & Prevention Services (NHPS) collaborated to analyze the relationships among Delaware students’ physical fitness levels (as measured by Fitnessgram®) and student academic outcomes (as measured by Delaware Student Testing Program (DSTP)), and student behavior outcomes such as attendance and suspensions. Fitnessgram® is a health-related fitness assessment tool developed by the Cooper Institute. The tool assesses a student’s aerobic capacity, body composition, strength, endurance and flexibility. Adequate performance on the test is based upon a test score falling in the Healthy Fitness Zone (HFZ) for each of the five tests that measure a different aspect of fitness. Delaware DOE requires annual testing of students in grades 4, 7, and 9/10. Delaware Fitnessgram® and eSchool PLUS data in two school years (SY 2008-09 and SY 2009-10) were collected and analyzed. The final number of usable cases for the analysis included 80,064 student records, a significant representative number for the state of Delaware.

Data analysis showed that more physically fit students:
- are higher performers on the Delaware Student Testing Program (DSTP)
- have significantly lower number of suspension days
- have significantly greater attendance at school

Delaware students who are less physically fit exhibit significantly lower scores in math and reading and also have significantly more suspension days and absenteeism. This study is the first to demonstrate these relationships among students in Delaware. The Delaware study controlled for family income, race, gender, school district, demonstrating that these relationships exist regardless of the controlled variables.

Simply put, fit students are more likely to do well and to behave appropriately regardless of their gender, race, family income or school district.

Delaware Schools Can Now Achieve 150 Minutes of Activity per Week

In 2009, NHPS was awarded a Carol M. White Physical Education Program grant. This was a significant achievement, given that these grants are typically awarded to schools or school districts. The grant project is termed “Make School a Moving Experience” and aims to:
- help schools develop plans for providing at least 150 minutes of moderate to vigorous physical activity (MVP) per week
- provide school staff with tools and professional development to enable MVP
- develop a statewide network to offer support for staff providing MVP
- give after-school providers tools and training to enable MVP

With the help of this grant, Delaware elementary schools are incorporating 150 minutes of moderate to vigorous physical activity for every student each week. In the 2011-2012 school year, 72 percent of Delaware elementary, or 74 schools, are engaged in helping their students to achieve 150 minutes of physical activity weekly.

Physical Activity Policy Will Not Require Funding

Delaware’s schools have adopted creative ways to achieve physical activity goals. Schools can implement physical activity almost anywhere: in physical education classes, as an energizing “learning in motion” activity, in the classroom, or during recess. A number of web-based resources are available to assist educators on how to do this, as well as technical assistance from NHPS.

There is no need for additional time in the school day or increased fiscal resources.

A number of states have implemented policies requiring 150 minutes of physical activity in schools with at least 150 minutes of fiscal impact analysis from Colorado, Louisiana, Mississippi, South Carolina and Texas have indicated no state or school funding impact as a result of enacting 150 minutes of physical activity in elementary schools.

Legislative Action Paves the Way for Physical Activity in Delaware’s Schools

The Delaware legislature has paved the way for promoting physical activity in schools:

House Bill 372 of 2006 required each local school district and charter school to assess the physical fitness of each student at least once at the elementary, middle and high school level and provide the results to the student’s caregiver. Fitnessgram® is the tool used in Delaware for the assessment.

House Bill 471 of 2006 mandated a physical education program (PEPA) pilot program in at least six of Delaware’s elementary, middle or high schools. The DOE established the goal that each student in the PEPA program shall achieve at least 150 minutes per week of physical activity. As a result of this legislation, a number of schools statewide have participated, growing from 6 initial schools to 70 schools involved.

Senate Bill 289 of 2006 clarified the role of the Delaware Statewide Health Advisory Committee (SHAC) to provide advice and guidance to the DOE regarding physical education and physical activity programs in Delaware public schools.

In 2007, the SHAC released the Annual Report to the Governor and General Assembly with several recommendations, including expansion of the PEPA Pilot Program to more schools.

Senate Concurrent Resolution 19 of 2009 encouraged Delaware’s schools to provide students with a minimum of 150 minutes of physical activity weekly.

Schools Share Positive Experiences

“I believe that the ‘JAMmin’ Minute activities and stations have helped to create a culture and climate in the school where students and teachers can work together to make this a place conducive for learning. Through exercising our bodies together, we feel more comfortable to exercise our minds together. Children get to see that their teachers and principal are human. So they can relate to us more. When parents are in the building, many participate as well. This has helped our school’s community come together as a family that focuses on moving in the right direction academically and physically.”

Principal Tracey N. Roberts, Pulaski Elementary

“When using our spelling words to create a ‘Take 10’ activity, I ask the students to choose whether we are going to ‘sky write,’ ‘shoot basketballs,’ or ‘play baseball,’ along with other options. We march in place while we are not spelling words. When I ask the students to spell a word, we spell using one of the choices above. Then we march in place. We repeat this process for the rest of the spelling words.”

Megan Rowe, 4th Grade East Millsboro Elementary

Robin Moxley and Patti Bear have been working together in a 5th grade inclusion setting for 16 years. They have worked as a team in three different buildings in the Appoquinimink School District, most recently at Townsend Elementary School for the last nine years. They always have a wide range of abilities in their classroom such as students with learning disabilities, autism, physical disabilities and other issues – as well as gifted students, at the other end of the spectrum. They are always searching for new ways to reach students, especially those who have a difficult time understanding concepts. Years ago, Robin decided to use her love of music and dance to teach mathematical concepts.

Other States Take Action

To date, policies in 12 states ensure that students in public elementary schools are provided with at least 150 minutes of physical activity per day. Most of these states have been able to implement their policies for minimal cost. Examples include:

- Iowa law requires students in K-5 to engage in physical activity for a minimum of 30 minutes per school day, grades 6-12 for a minimum of 120 minutes per week.
- Louisiana law requires each public K-8 elementary school to provide a minimum of 30 minutes of quality moderate to vigorous physical activity daily for students.
- North Carolina State Board of Education policy requires K-8 schools to provide a minimum of 30 minutes of moderate to vigorous physical activity daily, which may be completed through physical education, physical activity, recess, dance, classroom movement, or other curricular-based physical education program.
- Texas law requires students in grades K-5 to participate in moderate to vigorous physical activity for at least 30 minutes throughout the school year, which may include physical education classes or recess.