Enhance P.E. Task Force

Illinois State Board of Education
Christopher A. Koch, EdD
State Superintendent of Education

Illinois Department of Public Health
LaMar Hasbrouck, MD, MPH
Director

August 2013

TO: The Honorable Pat Quinn, Governor
The Honorable John J. Cullerton, Senate President
The Honorable Christine Radogno, Senate Minority Leader
The Honorable Michael J. Madigan, Speaker of the House
The Honorable Tom Cross, House Minority Leader

FROM: Christopher A. Koch, Ed.D.
State Superintendent of Education

LaMar Hasbrouck, MD, MPH
Director, Illinois Department of Public Health

SUBJECT: Enhance Physical Education Task Force Report

The Enhance Physical Education Task Force Report is being submitted pursuant to Public Act 97-1102.

The Task Force was charged with promoting and recommending enhanced physical education (P.E.) programs that can be integrated with a broader wellness strategy and health curriculum in elementary and secondary schools in this state. The Task Force's charge included educating and promoting leadership on enhanced P.E. among school district and school officials; developing and utilizing metrics to assess the impact of enhanced P.E.; promoting training and professional development in enhanced P.E. for teachers and other school and community stakeholders; identifying and seeking local, state, and national resources to support enhanced P.E.; and such other strategies as may be identified by the Task Force.

The Task Force was also charged with making recommendations to the Governor and the General Assembly on Goals 19-24 of the Illinois Learning Standards for Physical Development and Health, focusing on updating the standards based on neuroscience research on the relationship between physical activity, fitness and learning.

This report and the Executive Summary are available at the Enhance Physical Education Task Force website: www.isbe.net/EPE/html/EPETF.htm. For additional copies of this report, or for more specific information about any of the items, please contact ISBE's Governmental Relations Division at (217) 782-6510.

Enclosure

cc: Tim Anderson, Secretary of the Senate
Tim Mapes, Clerk of the House
Legislative Research Unit
State Government Report Center

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Illinois Enhance Physical Education Task Force

Recommendations and Report

August 2013

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To download a copy of this report or access an Executive Summary, see http://www.isbe.net/EPE/html/EPETF.htm

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Overview

Public Act 97-1102 established the Illinois Enhance Physical Education (P.E.) Task Force in 2012 to promote and recommend enhanced physical education programs that can be integrated with a broader wellness strategy and health curriculum in elementary and secondary schools in this state. The Task Force was also charged with making recommendations for revising Goals 19-24 of the Illinois Learning Standards for Physical Development and Health such that they reflect existing neuroscience research.

Enhanced P.E., which entails increasing the amount of time students spend in moderate to vigorous physical activity (MVPA) in P.E. class, is an evidence-based approach. The Task Force reviewed extensive research showing that children who are more physically active - in P.E. class, throughout the school day, and during recess – perform better in class and on standardized tests, have better classroom behaviors, and improve health outcomes.

The Task Force, as a whole, met five times between December, 2012 and August, 2013 to consider evidence and approaches to achieving its charge, deliberate on recommendations, and develop this report. In order to accomplish the goals set forth in Public Act 97-1102, the Enhance P.E. Task Force divided into two committees: the Standards Revision committee and the Enhance P.E. Promotion committee. Taking into consideration the realities faced by schools today and with focused discussions in the committees, the Task Force proposed revised learning standards and performance descriptors; began implementing an outreach and engagement strategy; and developed recommendations on the various components of its charge to the Illinois Governor and General Assembly. The Task Force's recommendations and a rationale for each recommendation is included starting on page 12 of this report.

Standards Revision: With support from expert reviewers, the Task Force revised Goals 19-24 of the Illinois Learning Standards for Physical Development and Health. In addition to updating many of the standards to reflect current best practices, two new standards were added that incorporate the latest research and best models for achieving optimal student health and academic achievement: 1) *Goal 22, Standard D: Describe how to advocate for the health of individuals, families and communities*, which is based on model national standards for health education, and 2) *Goal 23, Standard D: Describe and explain the structures and functions of the brain and how they are impacted by different types of physical activity and levels of fitness*, which translates the existing neuroscience research into practice to maximize the academic and health benefits.

Enhance P.E. Promotion: The Task Force also began implementing an outreach and engagement strategy and developed recommendations on the various components of its charge. It focused on promoting enhanced P.E. programs to seven key audiences: superintendents, principals, school boards, P.E. and adapted P.E. teachers and coordinators, non-P.E. teachers (e.g., academic, arts, and other non-P.E. teachers), parents, and students. Their goal was that all Illinois K-12 school students will participate in daily, high-quality physical education in order to promote academic achievement and realize the lifetime benefits of exercise and fitness. The committee developed messaging to support this goal and then created promotional materials catered to each audience. Members conducted presentations throughout the state and disseminated information through Task Force members' networks and associations via their websites, mailings, professional conferences, etc.

The Illinois Enhance P.E. Task Force

Background

In January 2011, at the invitation of the Association of State and Territorial Health Officials and the National Network of Public Health Institutes, a team of stakeholders from Illinois attended a meeting in New Orleans. The purpose of the meeting was to learn about the Centers for Disease Control and Prevention's Guide to Community Preventive Services (www.communityguide.org), or "Community Guide," a free resource designed to help communities identify health improvement interventions that are evidence-based and proven to work. In addition, the meeting was designed to help the participating teams identify a strategy from the Community Guide that they could take back to their states and implement.

Through the discussion process, the team, headed by the Illinois Department of Public Health (IDPH) and the Illinois Public Health Institute (IPHI) with other Illinois education and public health leaders, determined that the project should fall within existing state priorities and landed on the Illinois State Health Improvement Plan's priority of "Obesity: Nutrition and Physical Activity." In reviewing the evidence-based interventions recommended by the Community Guide, the team narrowed the specific focus to the recommended strategy of "Behavioral and Social Approaches to Increase Physical Activity: Enhanced School-Based Physical Education". The Team developed a goal of working with the Illinois State Board of Education (ISBE) to incentivize enhanced physical education in schools.

A voluntary Enhanced P.E. Task Force was developed in early 2011 to inform development of a plan that could be used to make rapid and significant progress toward implementing enhanced P.E. programs in Illinois schools. This plan was produced during three half-day meetings, during which the Task Force adopted a vision and mission, and brainstormed and refined goals and strategies. The plan highlighted the urgency of this work and established a framework for future promotion of Enhanced P.E. in Illinois.

Transition to Public Act 97-1102

Public Act 97-1102 established the Illinois Enhance P.E. Task Force in 2012 to promote and recommend enhanced physical education programs that can be integrated with a broader wellness strategy and health curriculum in elementary and secondary schools in this state. The Task Force's charge included educating and promoting leadership on enhanced physical education among school district and school officials; developing and utilizing metrics to assess the impact of enhanced physical education; promoting training and professional development in enhanced physical education for teachers and other school and community stakeholders; identifying and seeking local, state, and national resources to support enhanced physical education; and such other strategies as may be identified by the Task Force.

The Task Force was charged with making recommendations to the Governor and the General Assembly on Goals 19-24 of the Illinois Learning Standards for Physical Development and Health by August 31, 2013, focusing on updating the standards based on research in neuroscience that impacts the relationship between physical activity, fitness and learning.

Why enhance physical education?

In May, 2013, the Institute of Medicine of the National Academy of Sciences issued the report *Educating the Student Body: Taking Physical Education and Physical Activity to School*, which declared that physical education (P.E.) is as important as math, science, or any other core subject, not only because of its importance to lifelong health and well-being, but also because of the benefits that quality P.E. has on academic performance.

The Community Guide defines Enhanced P.E. as "programs that increase the length of, or activity levels in, school-based physical education classes." Specifically, the Task Force discussed Enhanced P.E. as increasing the amount of time students spend in moderate to vigorous physical activity (MVPA) in P.E. class; the Task Force also spent considerable time discussing the importance of integrating physical activity (as distinct from P.E. class) throughout the school day, to reap even more benefits.

While various evidence-based P.E. curricula are available for purchase, enhanced P.E. can also be implemented in settings with limited resources or other constraints. In addition, with its change in focus from athletics to fitness, enhanced P.E. is applicable to students of all levels of physical ability (see Figure 1, below). Quality enhanced P.E. programs ensure that at least 50 percent of class time is spent in MVPA.

The Task Force reviewed extensive research showing that children who are more physically active - in P.E. class, throughout the school day, and during recess – perform better in class and on standardized tests. Improving opportunities for physical activity is an imperative for improving our children's academic achievement and their health. Changing policies and practices to ensure more time is spent in MVPA during physical education and physical activity programming will maximize the positive impact on health, behavior, and learning.

Unfortunately, the national research demonstrates that the time spent being physically active during P.E. classes is generally very low. In a typical 30-minute (K-6 grade) class, students engage in only about 11 minutes of physical activity. Thus, a traditional P.E. class contributes very little to ensuring students are meeting the 60 minutes per day of exercise recommended in the Physical Activity Guidelines for Americans set by the U.S. Department of Health and Human Services.

Illinois has long been a leader in valuing children's education and health. Although many states require P.E., Illinois was the first state in the nation to require daily P.E. for all K-12 students. Many schools have designed or adopted model programs to meet this requirement and create opportunities for physical activity.

Some characteristics of "Enhanced P.E.," as compared to "Outdated P.E." are shown in Figure 1.

Figure 1: What it looks like: Outdated P.E. vs. Enhanced P.E.

	OUTDATED P.E. PROGRAMS	ENHANCED P.E. PROGRAMS
Curriculum	• Skills and rules to play team games (e.g., basketball, football, soccer, baseball)	• Physical competence and cognitive understanding about physical activity so students can be active for a lifetime (e.g., fitness activities, outdoor education, individual lifetime activities, dance, integrated lessons)
Grouping	• Large groups; limited equipment • Athletes are leaders	• Small groups; adequate equipment for active participation • All students have opportunities for success
Fitness Emphasis	• Skill-related • Comparison to national norms	• Emphasis on health-related fitness components • Students engaged in self-testing, applying principles of fitness, designing an individual program based on personal goals • Students understand that they 'own their own fitness' and learn to maintain and improve it to optimize health and well-being • Students understand how level of fitness affects health and cognitive function
Instruction	• Teacher-directed • Teacher controls and paces the entire lesson	• Teacher as coach/guide • Uses instructional strategies to allow students to progress at individual pace and to self-assess • Maximize time engaged in moderate to vigorous activity in order to reap benefits to cognitive function and cardio-respiratory health
Social Skills	• Emphasis on competition – winning and losing	• Emphasis on cooperation, working together as a group, leadership, conflict resolution during active participation situations • Develop self-awareness and self-management skills to achieve school and life success* • Use social-awareness and interpersonal skills to establish and maintain positive relationships* • Demonstrate decision-making skills and responsible behaviors in school*
Grading and Assessment	• Based on attendance, dress, skill level, fitness scores	• Based on self-improvement, self-evaluation; peer assessment; skill rubrics • Used to monitor and reinforce student learning
Games	• Teacher officiates games, giving feedback on skill performance and knowledge of rules; large group games; students waiting in line to play; winning emphasized	• Students engage in activities and sports with a health-related fitness component • Emphasis on participation and getting everyone active
Technology	• Stop watch	• Computers; pedometers; heart rate monitors; other fitness technology

*Social-Emotional Learning Standards

Adapted from materials by: American Academy of Pediatrics, Illinois Chapter; IAHPERD; American Heart Association

Why do Physical Education and physical activity matter to schools?

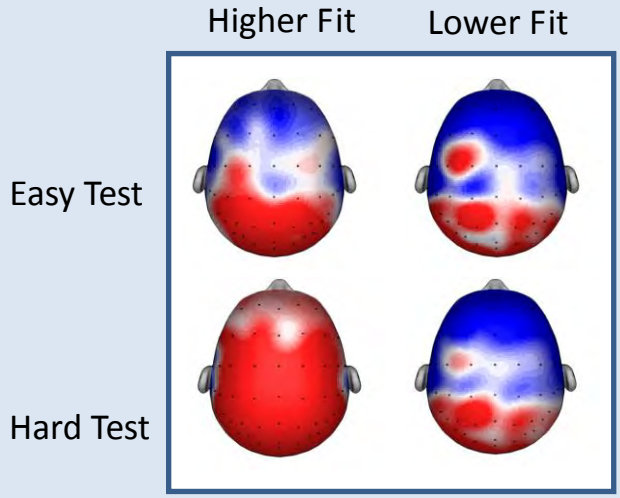
Learning and behavior
There is substantial evidence of a relationship between physical activity, fitness and improved cognitive and executive functioning. Such brain functions play a significant role in goal-directed behavior and the ability to concentrate, remember information, and multitask. Improved executive functioning allows students to organize and prioritize tasks and information, and is strongly linked to scholastic performance. [1, 2, 3]

Fitness: Cardiorespiratory fitness, a measure of how well the body can transport oxygen to its muscles during exercise, is related to optimizing task performance across one's lifespan as well as improving academic achievement and test performance. Studies demonstrate that higher fit children display higher levels of executive control, better task performance, faster reaction times, enhanced working memory, and better attention (see Figure 2).[4,5,6] Further, higher fit children are found to have enhanced math and reading abilities.[7] Higher fit children also have greater brain structure in specific regions of the brain that support memory[8] and executive control[9].

Studies have shown time and again that there is a positive association between fitness and academic achievement, as measured by standardized tests and improved grades. This relationship has been observed in China, Illinois, Massachusetts, California, and Texas. [10, 11, 12, 13, 14, 15] A 2013 study suggests that students in the Fitnessgram® "Healthy Fitness Zone" (HFZ) for cardiorespiratory fitness were more than two times more likely to meet or exceed the Illinois Standardized Achievement Test (ISAT) reading and math test requirements than students who were not.[16] As fitness level increases, so does academic achievement.[17]

Figure 2. Cognitive Effects of Fitness on Preadolescent Children

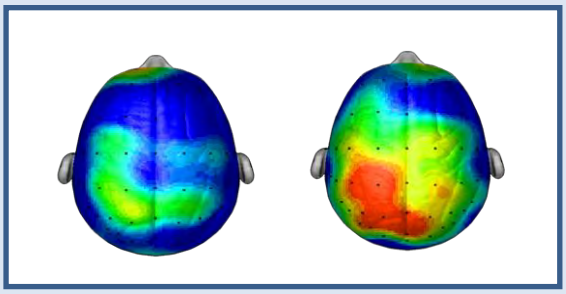
Average composite image of higher- and lower-fit student brains taking easy and hard cognitive tests



Pontifex, et. al. (2011). *Journal of Cognitive Neuroscience.*23(6):1332-45
Scan compliments of Dr. Charles Hillman University of Illinois

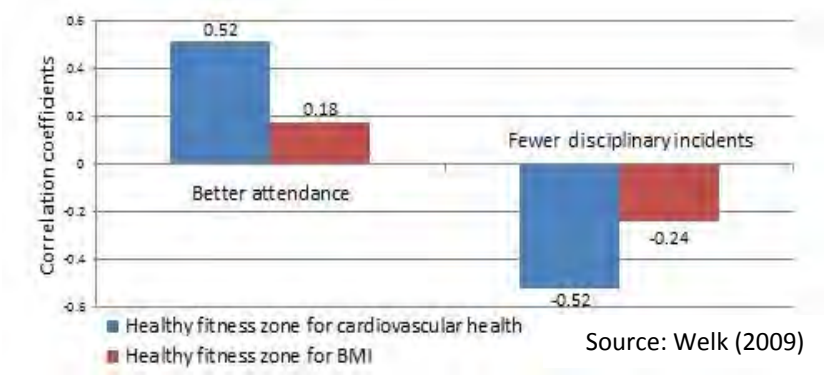
Figure 3. Cognitive Effects of Physical Activity on Preadolescent Children

Average composite of 20 students' brains taking the same test after 20 minutes of:



Hillman, et al. (2009). *Neuroscience.* 159(3):1044-54
Scan compliments of Dr. Charles Hillman University of Illinois

Physical Activity: As indicated in the Institute of Medicine's May 2013 report, a "growing body of evidence also suggests a relationship between vigorous and moderate-intensity physical activity and the structure and functioning of the brain. Children who are more active show greater attention, have faster cognitive processing speed, and perform better on standardized academic tests than children who are less active."[18]



Source: Welk (2009)

Figure 4. Student Fitness and BMI Correlate with Attendance and Disciplinary Incidents

Research suggests that acute bouts of exercise [20 minutes of walking at 60% of max heart rate (HR)] are associated with physiological changes that improve cognitive processes central to problem-solving and goal-oriented action, including response speed and accuracy (See Figure 3). Regular physical activity creates physiological changes in the brain that may be associated with improved attention; improved information processing, storage and retrieval; enhanced coping; enhanced positive affect; and reduced sensations of craving and pain.[19] Additionally, physical fitness has been associated with better attendance rates and fewer disciplinary incidents that involved drugs, alcohol, violence, truancy, and suspensions (see Figure 4).[20]

The residual cognitive benefits of exercise have been found to last from 30 minutes to about 1 hour. [21, 22, 23,] This suggests that physical education classes should be held before challenging academic subjects to take advantage of the residual effects of exercise on students' abilities to focus, elevated concentration and improved cognitive skills resulting in higher academic scores.[24] Research has also found that longer doses (40 min) of exercise are more beneficial than shorter doses (20 min.).[25]

P.E. can also enhance social and emotional learning because of the unique social development opportunities that arise from peer interaction, physical action, and a variety of emotional states.[26,27] The importance of social and emotional learning for students has been well documented in literature and plays a critical role in a student's capabilities for lifelong learning.[28] Quality P.E. that incorporates social and emotional development provides students with life skills such as self-management, self-concept, and decision making.[29 30]

Health

The impact sedentary lifestyles are having on Illinois children is alarming. In 2007, a national survey on children's health showed that only three states – Mississippi, Georgia, and Kentucky – had a higher childhood obesity rate than Illinois. [31] This means children in Illinois are at excessive risk for serious lifelong health problems like diabetes, heart disease, high cholesterol, and arthritis. [32,33,34] A sedentary lifestyle not only imperils the health of kids, it also threatens our economic future, which could make funding public education and other critical services more challenging than ever before. A growing body of research suggests that obesity is largely to blame for our ballooning healthcare costs. Right now, 75% of all healthcare costs are spent on the treatment of chronic diseases, many of which are obesity-related. Obesity is a rapidly escalating problem that costs the Illinois healthcare system and taxpayers nearly $4 billion per year – including more than $1 billion to Medicaid and $800 million to Medicare annually.[35] Some experts predict that, if nothing changes, the cost of obesity to the Illinois healthcare system will increase to $14.8 billion a year by 2018.[36]

The relationship between learning, behavior, fitness, physical activity, and health is important for all students, including those with disabilities and/or special healthcare needs. Members of the Task Force worked diligently to ensure recommendations and resources on enhanced physical education programs were inclusive of students with disabilities.

The Enhance P.E. Task Force Process and Deliberations

The Enhance P.E. Task Force, as a whole, met five times between December, 2012 and August, 2013 to consider evidence and approaches to achieving its charge, deliberate on recommendations, and develop this report. In order to accomplish the goals set forth in Public Act 97-1102, the Enhance P.E. Task Force divided into two committees: the Standards Revision Committee and the Enhance P.E. Promotion committee. In addition to meetings of the 'whole' Task Force, the committees met monthly from February to July, 2013, to revise the learning standards and develop recommendations to submit to the Illinois Governor and General Assembly. Both committees drafted recommendations for enhanced P.E. in Illinois that were proposed to the full Task Force, which approved a final set of recommendations that are included in this report starting on page 12.

Revised Learning Standards

The Standards Revision Committee, chaired by Deb Vogel, who represented the Illinois Education Association, focused primarily on revising the learning standards based on the current neuroscience research showing the relationship between physical activity, fitness, learning, behavior and health. They revised Goals 19-24 of the Illinois Learning Standards for Physical Development and Health. In addition to updating many of the standards to reflect current best practices, they added two new standards to incorporate the latest research and model practices for achieving optimal student health and academic achievement: 1) *Goal 22, Standard D: Describe how to advocate for the health of individuals, families and communities*, which is based on model national standards for health education, and 2) *Goal 23, Standard D: Describe and explain the structures and functions of the brain and how they are impacted by different types of physical activity and levels of fitness*, which translates the existing neuroscience research into practice to maximize the academic and health benefits. The revised and new standards and their corresponding performance descriptors are included in this report, starting on page 18.

The committee reviewed the relevant national standards, including the National Association for Sports and Physical Education (NASPE) National Standards for P.E. and the Centers for Disease Control and Prevention's (CDC) National Health Education Standards, as well as the standards for Canada and local standards for British Columbia. Although the NASPE standards were undergoing revision during the period in which this Task Force met, members were able to access the draft revisions of the national standards to ensure consistency with anticipated changes. Because no other states in the U.S. are known to have standards that explicitly integrate neuroscience research, a document was prepared by the Illinois Public Health Institute that summarizes the existing research as it relates to specific goals in the Illinois Learning Standards, *Research Summary: Exploring the Link between Physical Activity, Fitness and Cognitive Function* (see Appendix A).

The committee that led the revision of the standards included retired and current P.E. and health teachers from all grade levels, a teachers' union representative, a designee of State Superintendent of Education, the superintendent of the Illinois School for the Visually Impaired and the Illinois School for the Blind, two state representatives, and one senator (see Appendix B for the full list of committee members). Once the committee completed its draft revisions, they obtained input from prominent neuroscience researchers Dr. Charles Hillman, Dr. John Ratey, and Dr. Darla Castelli. In addition, they solicited review by a number of education and health experts, including Illinois teachers of the year at the elementary and secondary level, IAHPERD Health Blue Ribbon teachers, P.E. department chairs and coordinators, school administrators and curriculum specialists, Illinois School Health Association members, and teacher educators. The Task Force thanks the following people for reviewing the draft revisions: Marcia Berke, Carole Castens, Mary Gallagher, Beth Hjelm, Mark Kattenbracker, Bob McBride, Cathy McMillan, Sandra Noel, Cathy Patzner, Millie Shepich, Judy Tiggelaaar, Erin Washkuhn, and Kim Wheeler.

Enhanced P.E. Promotion

The Enhance P.E. Promotion Committee, which was co-chaired by Jean Sophie representing the Illinois Association of School Administrators and Jessica Madrigal representing the Great Lakes ADA Center (see Appendix C for a full list of committee members), focused on developing and implementing an Action Plan for promoting enhanced P.E. programs to seven key audiences: superintendents, principals, school boards, P.E. and adapted P.E. teachers and coordinators, non-P.E. teachers (e.g., academic, arts, and other non-P.E. teachers), parents, and students (see Appendix D). The goal of this plan was that all Illinois K-12 school students will participate in daily, high-quality physical education in order to promote academic achievement and realize the lifetime benefits of exercise and fitness. The committee developed messaging to support this goal and then created promotional materials catered to each audience. The core message for all audiences is: Enhancing P.E. and adding more physical activity during the school day improves academic achievement, student behavior and conduct, and health.

To elaborate on this information, the committee also communicated three supportive messages:

- Enhancing P.E. entails changing policies, practices, and curricula to ensure students spend more time in moderate to vigorous physical activity (MVPA).

- Schools benefit from a return on investment (ROI) from the allocation of dollars and time for P.E. and physical activity during the school day.

- Quality P.E. also includes integration of other academic topics into P.E., scheduling P.E. before challenging classes to maximize its impact on academic achievement, and adopting collaborative learning approaches.

The committee made progress on implementing this plan by conducting presentations throughout the state and disseminating information through Task Force members' networks and associations via their websites, mailings, professional conferences, etc. The committee developed and disseminated various outreach materials, including:

- Fact Sheet: *Enhancing Physical Education in Illinois: How Investing in P.E. Yields Higher Achievers.* This fact sheet briefly describes how to P.E. maximizes learning and improves behavior and health (Appendix E),
- Resource Guide: This comprehensive guide provides links to resources related to Enhanced P.E., including professional development opportunities and classroom activities (see Appendix F).
- Webinars for school and district administrators, including a July 16 webinar entitled *Enhanced P.E.: Making the Connection Between Physical Activity, Learning, Behavior & Health*, in which 191 principals, superintendents, school board officials and other school stakeholders participated. The webinar was replayed with a live Q&A on August 5. Two additional webinars will be offered in September and October 2013 that share information about the Task Force's final report and recommendations.
- Monthly news and research updates on P.E. were compiled and shared. An archive of these updates is available on the Task Force's website, http://www.isbe.net/EPE/html/EPETF.htm, under "EPETF Newsletters/Updates".
- Dr. Koch and Dr. Hasbrouck authored a Letter to the Editor promoting enhanced P.E. that was published in the Chicago Tribune on May 17, 2013 (available here).

Context of Discussion

While revising the learning standards, developing an action plan, and drafting recommendations for the Illinois General Assembly, Governor, the Illinois State Board of Education (ISBE), and other stakeholders, the Task Force discussed multiple considerations related to the current state of physical education in Illinois:

- Illinois schools are facing resource constraints as they try to meet a variety of mandates with limited funds and staff. The Task Force recognized these limitations and attempted to make recommendations that enhance educational outcomes without harming the financial solvency of schools or burdening schools with additional administrative requirements.

- The Task Force had a number of discussions about the extent to which schools are currently implementing the daily physical education instructional requirement, understanding that the process of enhancing P.E. must build on the foundation of what schools are currently providing. While there were no data on this subject available to the Task Force, during its deliberations the members learned that as part of its larger transparency goals, ISBE plans to compile and publish schools' code compliance information collected by the Regional Offices of Education, including compliance with the P.E. instructional requirement. ISBE plans to share these data by spring 2014 via an online, searchable database that allows parents and other interested community stakeholders to drill down to school-level data to understand their school's standing.

  The Task Force supports these steps to increase transparency with respect to P.E. and encourages ISBE to engage a diverse array of stakeholders – such as those sectors represented on the Task Force - in building an online portal for accessing data on the implementation of the K-12 daily P.E. instructional requirement. When convened, the Enhance P.E. Roundtable would be an ideal set of stakeholders to support and inform the development of ISBE's online portal.

- With an increased emphasis on standardized testing and common core subjects, there may be less of a focus on physical education by school administrators, other teachers, and parents, yet the P.E. curriculum plays a critical role in helping students learn and be healthy. The Task Force developed resources and recommendations to help school leaders, teachers, parents, and the public better understand the value and importance of physical education. To ensure quality instruction, the Task Force discussed the need for physical education and health teachers to be able to be recognized as "highly qualified," just as other academic subjects are taught by highly qualified teachers in those subjects.

- There is a distinction between physical education and physical activity. Physical education is the planned, sequential and developmentally appropriate K-12 curriculum that provides cognitive content and learning experiences using physical activity as a teaching tool. In contrast, physical activity is a movement of the body that expends energy. This distinction is important as schools work to improve the quality of their physical education programs and increase the amount of moderate to vigorous physical activity throughout the school day. Physical activity can be incorporated into classroom time and other academic subjects can be integrated into physical education. The Task Force primarily focused on the quality of the *physical education* provided in schools, but also identified resources that classroom teachers can use to incorporate physical activity into lessons to support learning and behavior goals.

Implementation Considerations

While the work of the Task Force officially ends when its recommendations are made to the Illinois Governor and General Assembly on August 31, 2013, the work to promote and implement enhanced P.E. across Illinois will extend much beyond that date. Helping teachers and school administrators make the shift from "Outdated PE" to "Enhanced P.E." will take time and resources and the vision of the Task Force is that enhanced P.E. will be promoted and sustained in perpetuity. Specifically, the Task Force discussed the need to consider the following when implementing enhanced P.E.:

- **Time**- It will take time for ISBE to adopt and for schools to fully implement the revised learning standards for physical development and health. The Task Force intends for the learning standards to be adopted by the spring of 2014 so that schools can plan for their implementation during the 2014-15 school year and fully implement the changes in the 2015-16 school year. Further, a long-term investment will be needed to promote and sustain enhanced P.E. in schools across Illinois over time.

- **Professional Development**- P.E. teachers, adapted P.E. teachers, and non-P.E. teachers will need resources and opportunities to improve the quality of their physical education classes and their ability to incorporate physical activity into other classes. There is a need to identify the scope of professional development needed and develop materials to fill the gaps for all teachers across Illinois.

- **Professional Pipeline**- In order to permanently implement enhanced P.E. in Illinois, academic and training institutions will need to adapt their curricula to meet the revised learning standards and ensure future teachers, school administrators, and others are comfortable teaching and promoting enhanced physical education.

- **Measuring Progress** – For school leaders, parents and communities to understand the progress that Illinois has made in improving policies and practices, and the impact that those changes have had on student fitness, activity levels, and academic achievement, it will be necessary to collect and analyze data. Four key elements of data to be analyzed at the district level to assess the quality of a P.E. program may include: student fitness (e.g., as measured by Fitnessgram® standards), whether schools have Highly Qualified P.E. teachers, whether schools are meeting the P.E. instructional requirement, and if schools' curricula follow the Learning Standards for Physical Development and Health (Goals 19-24). The Task Force has made some specific recommendations related to potential metrics on the impact of Enhanced P.E., but state and local leadership should take advantage of new types of data that become available or opportunities that arise to integrate the collection and analysis of P.E.-related data within future educational data systems. Data collected should utilize tools that can be adapted to include students with disabilities.

- **Moving Toward Enhanced P.E. in all Schools** - The Task Force has an express goal that schools move toward providing daily physical education taught by a qualified and trained P.E. teacher. Due to resource and facility constraints, in some schools (primarily at the elementary level) non-P.E. classroom teachers are currently charged with teaching P.E. some days. In such cases, districts, regional offices of education and ISBE should provide these teachers with the resources and training needed to implement quality physical education opportunities for students that will result in academic, behavioral, and health benefits. At the same time, schools and districts will need technical assistance and support to identify and dedicate the time, facilities and space, staff, equipment, professional development, and other resources needed to develop their daily, professionally taught P.E. program.

- **Resources** – The Task Force developed the *Enhanced Physical Education Resource Guide,* an extensive set of resources to support the implementation of enhanced P.E. This web-based Guide provides links to an array of national initiatives to improve P.E. and wellness that schools can use as a framework; quality P.E. curricula options; brain breaks that can be used by classroom teachers; recommended tools to evaluate P.E. teachers and P.E. programs; requirements, model policies, and guidance for wellness policies; resources for engaging school boards; national and state standards and recommendations related to P.E.; tools for supporting enhanced P.E. for students with disabilities; existing awards and recognition programs; and links to training and professional development. The Resource Guide was shared with all Task Force members to distribute to their networks and will be housed on the Task Force's website: http://www.isbe.net/EPE/html/EPETF.htm.

Taskforce Recommendations

The following are the recommendations from the Illinois Enhance P.E. Task Force to the Illinois Governor and General Assembly:

General Charge: Propose Revisions to Learning Standards

Recommendation 1: ISBE propose adoption of the Task Force's recommended revisions to Goals 19, 20, 21, 22, 23, and 24 of the Illinois Learning Standards for Physical Development and Health with the intention of fully implementing the revised standards for the 2015-16 school year (see page 18)

> *Rationale*: As required by its legislative charge, the Task Force worked to revise the learning standards and performance descriptors for physical development and health to incorporate the latest neuroscience research on physical activity and learning, behavior and health. In addition to the Task Force's expertise, the revisions were reviewed by 13 experts across Illinois. The Task Force expects that the regulatory review process (including action by the IL State Board of Education, public comment, and approval by JCAR) will occur during the 2013-2014 school year. School officials can begin planning for and phasing in implementation for the new standards during the 2014-2015 academic year and would be ready for full implementation of the standards in the 2015-16 academic year.

Recommendation 2: At a district level, examine the revised physical development and health standards as they relate to the forthcoming new science and social-emotional standards

> *Rationale:* When the new science and social-emotional learning standards are available for implementation, school districts should convene teams of teachers, coordinators, and administrators to review all of the new standards to determine alignment among the standards for integrated learning across subject areas. This will allow for integration of physical education and physical activity into other academic subjects, and for other academic subjects to be supported in physical education class, which is considered a best practice.

General Charge: Promote and recommend enhanced P.E. programs

Recommendation 1: ISBE, in partnership with IDPH, update its model wellness policy to include a policy that students spend at least 50% of P.E. class time in moderate to vigorous physical activity (MVPA).

> *Rationale:* School districts that participate in the USDA's National School Lunch program are required to adopt a wellness policy and to facilitate that ISBE publishes a model policy that districts can adopt or adapt to meet the requirement. This recommendation is focused on that model policy, the content of which is exemplary, not a requirement or mandate. Increasing the proportion of MVPA during physical education class is an evidence-based strategy that is effective in improving both physical activity levels and physical fitness among school-aged children and adolescents.[37] Healthy People 2010, an initiative of the U.S. Department of Health and Human Services and the President's Council on Fitness, recommended that students be engaged in MVPA for at least 50 percent of P.E. class time.[38] The Task Force understands that the P.E. class time is also used for health education in addition to physical development, and is referring only to those classes focused on physical development instruction time, not health education or other academic-content components of P.E.

Recommendation 2: ISBE and IDPH promote the updated model wellness policy statewide, making resources available for teachers and administrators to implement the model policy.

Rationale: Supportive resources and guidance will assist schools and districts in going beyond simply adopting a quality wellness policy to successfully implementing the policy. Such supplementary materials may include sample administrative procedures for implementing the policies proposed in the main document, as well as professional development and other resources to assist P.E. teachers in restructuring lessons and activities to incorporate more MVPA.

Recommendation 3: ISBE, in partnership with IDPH, recommend and provide technical assistance for voluntary completion of School Health Index to assist in the process of developing wellness policies.

Rationale: The *School Health Index (SHI): Self-Assessment & Planning Guide 2012* is an online self-assessment and planning tool that schools can use to improve their health and safety policies and programs. The SHI was developed by the Centers for Disease Control and Prevention in partnership with school administrators and staff, school health experts, parents, and national non-governmental health and education agencies. Schools can use the SHI to identify strengths and weaknesses of policies and programs, develop an action plan for improving student health, and engage teachers, parents, students, and the community in promoting health-enhancing behaviors and better health. SHI is comprehensive and action-oriented, so it can be used as a quality planning tool for developing a wellness policy and school improvement plan.

Because each school should use a process that best fits their local circumstances, the Task Force recommends that completion of the SHI be voluntary and that ISBE and IDPH provide technical assistance for those schools that opt to conduct it.

Recommendation 4: ISBE will coordinate with Regional Offices of Education/Intermediate Service Centers to provide support for enhanced P.E. programs and approaches.

Rationale: The Regional Offices of Education/Intermediate Service Centers provide staff development, technical assistance, and information resources to public school personnel, responding to the needs of schools and providing a local resource for a full range of school improvement and support services. ISBE will coordinate with these centers to ensure that support for implementing enhanced P.E. is provided to schools.

Recommendation 5: ISBE recommend a limited class size for physical education similar to other classroom settings for optimal instruction. The recommendation set in the Shape of the Nation 2012 report is that the teacher/student ratio in physical education be no greater than 1:25 (elementary) and 1:30 (middle/high).

Rationale: Physical education should have appropriate class size similar to other academic subjects. A limited class size for physical education would maximize activity/instructional time, increase opportunities for the development of fitness and skill, increase teachers' ability to give individualized instruction, decrease risk of student injury, decrease opportunities for 'off task' behavior of students, maximize activity space, and lessen the amount of equipment needed to maximize participation.

Sub-Charge A: Educate and promote leadership on enhanced P.E. among school district and school officials

Recommendation A1*:* ISBE implement recognition and award programs to encourage adoption of enhanced P.E. programs and principles by school district and school officials

Rationale: Celebrating successes and recognizing the hard work done by schools and districts that have improved the quality of their P.E. programs is a critical way of building momentum and leadership for change throughout the state.

Any recognition or award program should tie into existing applications and requirements, such as the local wellness policy, IAHPERD's Blue Ribbon Program, or federal recognition programs, so that schools will not be required to complete, nor ISBE be required to review, additional paperwork for this recognition. ISBE's criteria for statewide recognition would thus align and connect with existing programs.

Sub-Charge B: Develop and utilize metrics to assess the impact of enhanced P.E.

Recommendation B1: ISBE recommend Presidential Youth Fitness Program (PYFP) as a tool for measuring fitness, accessing professional development, and recognizing achievement.

Recommendation B2: ISBE aggregate data from schools participating in PYFP.

Recommendation B3: When technically possible, ISBE link and report aggregate PYFP data with academic achievement, attendance, and discipline data.

Rationale [B1-B3]: The Presidential Youth Fitness Program (PYFP) is a national program that includes fitness assessment, professional development, and recognition. Schools can adopt the program to assess, track, and reward youth fitness and physical activity using either a free or paid version. PYFP assesses health using FITNESSGRAM®, a test which researchers worldwide have used to analyze and demonstrate the association between fitness and academic achievement. By aggregating fitness data from participating schools in Illinois and assessing their correlation with indicators of academic achievement, attendance, and discipline, Illinois will begin to identify the impact of enhancing P.E. It is recommended that at the local level schools link PYFP data with academic achievement, attendance, and discipline data – including discipline data primarily available locally (e.g. principal office visits).

Recommendation B4: ISBE include a measure on the School Report Card about the number of minutes of instructional P.E. provided for different grade levels as a measure of health.

Rationale: The National Association of Sports and Physical Education (NASPE) and the Centers for Disease Control and Prevention (CDC) recommend that schools provide 150 minutes per week of instructional physical education for elementary school children and 225 minutes per week for middle and high school students for the entire school year (not including recess). If possible, include reference information about how many minutes are recommended by NASPE/CDC on the Report Card so parents and the public can understand the context of the measure. By providing information about the number of minutes of P.E. provided for different grade levels along with reference information on the School Report Card, parents and the public will be able to determine if children have access to the recommended weekly amount of physical education. Data on the number of minutes of P.E. provided

for each grade level in a given school is readily available without a significant administrative burden. The School Report Card, which already compiles and reports summary information on schools to the public, would be an effective and efficient mechanism for sharing these school-level data and information on the national benchmarks.

Sub-Charge C: Promote training and professional development in enhanced P.E. for teachers and other school and community stakeholders

Recommendation C1*:* ISBE should convene a committee to determine the scope of necessary professional development for physical education and health teachers, what is currently available, what gaps need to be filled, and how IDPH and ISBE can collaborate to close those gaps. This could be a committee of the sustained voluntary Enhance P.E. Roundtable (Recommendation D1).

Rationale: Illinois lacks systematic data on the availability and quality of professional development for physical education and health teachers. In order to implement the proposed new learning standards and the teaching strategies associated with enhancing P.E., teachers throughout the state will need access to quality professional development opportunities that teach them how to maximize the cognitive and health benefits of P.E., as highlighted by recent neuroscience and public health research.

Recommendation C2: ISBE work with its partners to develop and disseminate professional development materials that support implementation of the revised learning standards.

Rationale: In order to fully implement the revised learning standards, many teachers will need additional information on the latest neuroscience research and best practices for implementing enhanced physical education. While many resources have been or are being developed to support implementation of enhanced P.E., such as the *Enhanced P.E. Resource Guide* and the *Glossary of Neuroscience Terms* (see Appendix G), ISBE will need to disseminate these materials and assist in developing additional needed materials.

Recommendation C3: ISBE implement a 'highly qualified' status for physical education and health teachers as it does for other teachers in the state. ISBE should use the criteria and submission process that is already in place for other disciplines and implement it in conjunction with implementation of the revised standards (see Appendix H).

Rationale: The physical education of students is critical to their learning, behavior, and health. Physical education should be taught by teachers who have been trained in physical education concepts and strategies, just as other academic subjects are being taught by a professional trained in those academic subjects. No criteria currently exist for classifying P.E. or health teachers as “highly qualified,” but they do exist for teachers of other academic subjects. Criteria for highly qualified P.E. teachers would need to be developed but could mirror the existing requirements (such as training background) for other “highly qualified” teachers.

Recommendation C4: ISBE and IDPH should work with their partners to provide professional development resources for integrating physical activity into the classroom (e.g., timely brain breaks during the school day; physical activity breaks before or during high-stakes testing).

> *Rationale:* Short bouts of physical activity have been shown to increase cognitive function, and improve academic performance, focus and behavior. In order to systematically integrate this practice into the school day, all teachers would benefit from instructional resources and professional development on how to create opportunities for physical activity during class. Given the demonstrated value of physical activity breaks to learning, schools should explore opportunities for providing these "brain breaks" before or during high-stakes testing or other times when students are sedentary for long periods of time.

Sub-Charge D: Identify and seek local, state, and national resources to support enhanced P.E.

Recommendation D1: ISBE and IDPH sustain a voluntary Enhance P.E. Roundtable to identify resources and support a long-term campaign to promote enhanced P.E. across the state.

> *Rationale:* Members of the Enhance P.E. Task Force have made a concerted effort to promote enhanced P.E. through communications and trainings provided to their networks and associations. However, this outreach only occurred over the period of a few months and the Task Force believes that a long-term campaign supported by sufficient resources is needed to ensure the reach and impact of enhanced P.E. ISBE has convened Roundtables in the past for on-going support and expertise from stakeholders, and an Enhance P.E. Roundtable could continue to promote enhanced P.E. long after the Task Force adjourns.

Recommendation D2: The Illinois General Assembly should consider the importance of P.E. to students' learning, social-emotional wellness, behavior, and health and dedicate funding and other resources to enhance the quality of daily P.E.

> *Rationale:*, There is no specific allocation of state funding that supports schools' efforts to implement quality daily P.E. Providing quality, daily P.E. requires that schools dedicate funding to employ qualified staff and support their ongoing professional development, to purchase equipment that maximizes the physical activity and fitness of all students – including those with disabilities, to provide and maintain adequate facilities and space in which P.E. classes can be offered, and to dedicate sufficient time in the school day and other resources that ensure the value and impact of their P.E. program.

Recommendation D3: ISBE, IDPH and the Enhance P.E. Roundtable seek to align efforts and collaborate with other systems and stakeholders working to advocate for enhanced P.E. and school health.

> *Rationale:* There are multiple initiatives and programs at the local, state, and national level that have objectives that align with those of enhanced P.E., including improvement student nutrition, health, classroom behaviors, and fitness. To be efficient and comprehensive in promoting enhanced P.E., ISBE, IDPH, and – if convened – the Enhance P.E. Roundtable should leverage their limited resources and increase their impact by aligning their work and collaborating with other systems and stakeholders that have similar goals.

Summary

The Enhance P.E. Task Force brought together a diverse array of stakeholders from throughout Illinois who value the education and well-being of the state's students. The Task Force's P.E. promotion activities and recommendations reflect its understanding of the compelling evidence linking enhanced P.E. with improved academic achievement, behavior, and health. The Task Force understands that schools are constantly struggling with budgetary constraints and other demands, and, therefore, it aimed to provide the tools and resources that will enable schools and districts to prioritize and implement enhanced P.E. without placing any additional requirements on schools.

The Task Force provided resources and ideas that promote and support the leadership of local schools and administrators so they can be champions and models for other local leaders. It recommended actions necessary to ensure that sufficient professional development opportunities are available to teachers and suggested specific metrics that can be used at the state and local level to measure the implementation and impact of enhanced P.E. The Task Force developed revised learning standards that will facilitate consistent implementation. The Task Force encourages the implementation of these recommendations for the benefit of all Illinois students.

Acknowledgements

The leadership of the Task Force's co-chairs, Dr. Koch and Dr. Hasbrouck, was instrumental in defining the direction of the Task Force and helping to find common ground among all members. Staff from both the Illinois Department of Public Health, including Conny Moody Mueller, Cheri Hoots, Margie Harris and Joanna Rewerts, as well as staff from the Illinois State Board of Education, including Mark Haller, Shawn Backs, and Jessica Gerdes, worked tirelessly to ensure that the Task Force received the support and information needed to complete their task. The Illinois Public Health Institute supported the Task Force with funding from the National Network of Public Health Institutes and the Association of State and Territorial Health Officials with support from the Centers for Disease Control and Prevention, as well as funds provided by the Illinois State Board of Education. Coby Jansen Austin, Janna Simon, and Sarah Chusid of the Illinois Public Health Institute provided support for the Task Force, and various interns made valuable contributions, including Jessica Cote and Deeana Ijaz.

Proposed Revised Illinois Learning Standards and Performance Descriptors: State Goals 19-24

STATE GOAL 19: Acquire movement and motor skills and understand concepts necessary to engage in moderate to vigorous physical activity.

Why This Goal Is Important: Performance of physical activities involves competency in a wide range of motor, non-motor, and manipulative skills. Learning in this area is developmental, building simple movements into more complex patterns. Learning to follow directions and rules enhances enjoyment and success in both recreational and competitive sports. Working toward higher levels of competence, students learn how to maintain health and fitness as individuals and as members of teams.

A. Demonstrate physical competency in a variety of motor skills and movement patterns.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
19.A.1a Demonstrate control when performing fundamental locomotor, non-locomotor, and manipulative skills.	**19.A.2a** Demonstrate control when performing combinations and sequences in locomotor, non-locomotor, and manipulative motor patterns.	**19.A.3a** Demonstrate control when performing combinations and sequences of locomotor, non-locomotor, and manipulative motor patterns in selected activities, games, and sports.	**19.A.4a** Perform skills efficiently in a variety of leisure activities, sports, creative movement, and work-related activities.	**19.A.5a** Demonstrate knowledge and skills in a self-selected individual sport, a team sport, creative movement, and work-related activities.
19.A.1b Participate daily in moderate to vigorous physical activity while performing basic movement patterns.	**19.A.2b** Participate daily in moderate to vigorous physical activity while performing multiple basic movement patterns with additional combination movement patterns.	**19.A.3b** Participate daily in moderate to vigorous physical activity while performing multiple movement patterns consistently with additional combination movement patterns.	**19.A.4b** Participate daily in moderate to vigorous physical activity while performing movement patterns in a variety of activities.	**19.A.5b** Participate daily in moderate to vigorous physical activity while performing movement patterns in a variety of activities.

B. Analyze various movement concepts and applications.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
19.B.1a Understand spatial awareness and relationships to objects and people.	**19.B.2a** Identify the principles of movement (e.g., absorption and application of force, equilibrium).	**19.B.3a** Compare and contrast efficient and inefficient movement patterns.	**19.B.4a** Analyze various movement patterns for efficiency and effectiveness.	**19.B.5a** Apply the principles of efficient movement to evaluate personal performance.
19.B.1b Understand how to execute basic movement patterns.	**19.B.2b** Develop a basic understanding of multiple basic movement patterns with additional combination movement patterns.	**19.B.3b** Understand multiple movement patterns and their effects on the brain.	**19.B.4b** Analyze multiple movement patterns with additional combination movement patterns and their effects on the brain.	**19.B.5b** Develop and implement a variety of movement concepts to enhance brain function.

C. Demonstrate knowledge of rules, safety and strategies during physical activity.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
19.C.1a Demonstrate safe movement in physical activities.	**19.C.2a** Identify and apply rules and safety procedures in physical activities.	**19.C.3a** Apply rules and safety procedures in physical activities.	**19.C.4a** Develop rules and safety procedures for physical activities.	**19.C.5a** Select components (e.g., equipment, boundaries, number of players, rules) which promote participation in novel or original physical activities.
	19.C.2b Identify offensive, defensive, and cooperative strategies in selected activities and games.	**19.C.3b** Apply basic offensive, defensive, and cooperative strategies in selected activities, games, and sports.	**19.C.4b** Select and apply offensive, defensive, and cooperative strategies in selected activities, games, and sports.	**19.C.5b** Analyze and apply complex offensive, defensive, and cooperative strategies for selected games and sports.

STATE GOAL 20: Achieve and maintain a health-enhancing level of physical fitness based upon continual self-assessment.

Why This Goal Is Important: Regular physical activity is necessary to sustain physical fitness and health. Students need to apply training principles—frequency, intensity, time, and type (FITT)—to achieve their personal fitness goals. Fitness expectations need to be established on an individual basis; realistic goals need to be based on the health-related and skill-related components of fitness, including endurance, strength, flexibility, cardiorespiratory fitness, body composition, balance, agility, spatial awareness, power, reaction time, coordination and speed. By learning and applying these concepts, students can develop lifelong understanding and good habits for overall health and fitness.

A. Know and apply the principles and components of health-related and skill-related fitness as applied to learning and performance of physical activities.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
20.A.1a Identify characteristics of health-related and skill-related fitness (e.g., flexibility, muscular strength, balance).	**20.A.2a** Describe the benefits of maintaining a health-enhancing level of fitness.	**20.A.3a** Identify the principles of training: frequency, intensity, time and type (FITT).	**20.A.4a** Interpret the effects of exercise/physical activity on the level of health-related and skill-related fitness.	**20.A.5a** Implement an individualized health-related fitness plan which includes the principles of training.
20.A.1b Engage in sustained physical activity that causes increased heart rate, muscle strength and range of movement.	**20.A.2b** Regularly participate in physical activity for the purpose of sustaining or improving individual levels of health-related and skill-related fitness.	**20.A.3b** Identify and participate in activities associated with the components of health-related and skill-related fitness.	**20.A.4b** Participate in various types of fitness training programs (e.g., circuit, cross and interval training) and know the implications of and the benefits from participation in those programs.	**20.A.5b** Develop and implement various types of fitness training programs (e.g., circuit, cross and interval training) and describe the characteristics, implications and benefits of each.

B. Assess individual fitness levels.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
20.B.1a Describe immediate effects of physical activity on the body (e.g., faster heartbeat, increased rate of breathing).	**20.B.2a** Monitor individual heart rate before, during, and after physical activity, with and without the use of technology.	**20.B.3a** Monitor intensity of exercise through a variety of methods (e.g., perceived exertion, pulse, heart rate monitors), with and without the use of technology.	**20.B.4a** Record and interpret health-related physiological data (e.g., blood pressure, body mass index, oxygen exchange), with and without the use of technology.	**20.B.5a** Collect and interpret health-related fitness data over a period of time, with and without the use of technology.
	20.B.2b Match recognized assessments of health-related fitness (e.g., FitnessGram) to corresponding components of fitness.	**20.B.3b** Evaluate the strengths and weak-nesses contained in a personal fitness profile.	**20.B.4b** Prepare an individual health-related fitness profile and evaluate fitness level on each component.	**20.B.5b** Evaluate the effects of fitness choices and heredity on wellness.
		20.B.3c Discuss and understand the importance of fitness as it relates to academic performance.	**20.B.4c** Understand and explain the importance of fitness as it relates to academic performance.	**20.B.5c** Analyze and explain the correlation between level of fitness and academic achievement.

C. Set goals based on fitness data and develop, implement, and monitor an individual fitness improvement plan.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
20.C.1a Identify a realistic health-related goal.	**20.C.2a** Set a personal health-related fitness goal.	**20.C.3a** Set realistic short-term and long-term goals for a health-related fitness component.	**20.C.4a** Set realistic, short-term, health-related fitness goals based on individual profiles.	**20.C.5a** Set realistic, long-term, health-related fitness goals based on individual profiles.
	20.C.2b Demonstrate the relationship between movement and health-related and skill-related fitness components (e.g., running/cardiorespiratory, tug-of-war/strength).	**20.C.3b** Identify opportunities within the community for regular participation in physical activities.	**20.C.4b** Analyze personal fitness data and academic performance and describe the correlation between the two.	**20.C.5b** Understand how aging, illness, and injury affect physical activity.
		20.C.3c Apply the principles of training to the health-related fitness goals.	**20.C.4c** Evaluate physical fitness services, products, and advertising.	**20.C.5c** Use profile data to monitor an individual wellness/fitness plan.
			20.C.4d Design and implement a personal fitness program.	

STATE GOAL 21: Develop skills necessary to become a successful member of a team by working with others during physical activity.

Why This Goal Is Important: As members of teams, students need to fill the role of leader at times and participant at other times. Knowing how to follow procedures, accept leadership from others, participate actively, and lead when appropriate will serve the student on and off the playing field. Students need to know the elements of teamwork (communication, decision making, cooperation, leadership) and how to adjust individual needs to team needs. Students also need to be able to recognize each member's contributions, including their own.

A. Demonstrate personal responsibility during group physical activities.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
21.A.1a Follow directions and class procedures while participating in physical activities.	**21.A.2a** Accept responsibility for one's own actions in group physical activities.	**21.A.3a** Follow directions and decisions of responsible individuals (e.g., teachers, peer leaders, squad leaders).	**21.A.4a** Demonstrate decision-making skills both independently and with others during physical activities.	**21.A.5a** Demonstrate individual responsibility through use of various team-building strategies in physical activity settings (e.g., etiquette, fair play, self-officiating, coaching, organizing a group activity).
21.A.1b Use identified procedures and safe practices with little or no reinforcement during group physical activities.	**21.A.2b** Use identified procedures and safe practices without reminders during group physical activities.	**21.A.3b** Participate in establishing procedures for group physical activities.	**21.A.4b** Apply identified procedures and safe practices to all group physical activity settings.	
21.A.1c Work independently on tasks for short periods of time.	**21.A.2c** Work independently on task until completed.	**21.A.3c** Remain on task independent of distraction (e.g., peer pressure, environmental stressors).	**21.A.4c** Complete a given task on time.	

B. Demonstrate cooperative skills during structured group physical activity.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
21.B.1a Work cooperatively with another to accomplish an assigned task.	**21.B.2a** Work cooperatively with a partner or small group to reach a shared goal during physical activity.	**21.B.3a** Work cooperatively with others to accomplish a set goal in both competitive and non-competitive situations (e.g., baseball, choreographing a dance).	**21.B.4a** Work cooperatively with others to achieve group goals in competitive and non-competitive situations (e.g., challenge course, orienteering).	**21.B.5a** Demonstrate when to lead and when to be supportive to accomplish group goals.

STATE GOAL 22: Understand principles of health promotion and the prevention and treatment of illness and injury.

Why This Goal Is Important: Nutrition, exercise, rest, hygiene and safety are the bases for personal, family and occupational health. From an early age, students can recognize healthy habits and understand why they are important. As students become more sophisticated in their understanding, they learn and can adopt a variety of ways to minimize illness and enhance health. Learners will be able to apply the effects of health-related actions to success in the workplace. Students who develop an effective understanding of basic health promotion can establish the foundation for achieving and maintaining personal health and well-being by making informed wellness decisions now and throughout their lives.

A. Explain the basic principles of health promotion, illness prevention and safety including how to access valid information, products, and services.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
22.A.1a Identify general signs and symptoms of illness (e.g., fever, rashes, coughs, congestion).	**22.A.2a** Describe benefits of early detection and treatment of illness.	**22.A.3a** Identify and describe ways to reduce health risks common to adolescents (e.g., exercise, diet, refusal of harmful substances).	**22.A.4a** Compare and contrast communicable, chronic, and degenerative illnesses (e.g., influenza, cancer, arthritis).	**22.A.5a** Explain strategies for managing contagious, chronic, and degenerative illnesses (e.g., various treatment and support systems).
22.A.1b Identify methods of health promotion and illness prevention (e.g., obtaining immuni-zations, hand washing, brushing, and flossing teeth, eating practices, sleep, cleanliness).	**22.A.2b** Demonstrate strategies for the prevention and reduction of communicable and non-communicable disease (e.g., practicing cleanliness, making healthy food choices, understanding the importance of immunizations, and regular health screenings).	**22.A.3b** Identify how positive health practices and relevant health care can help reduce health risks (e.g., proper diet and exercise reduce risks of cancer and heart disease).	**22.A.4b** Analyze possible outcomes of effective health promotion and illness prevention (e.g., reduction in stress, improved fitness, lessened likelihood of injury and illness).	**22.A.5b** Evaluate the effectiveness of health promotion and illness prevention methods using data from actual situations (e.g., impact of worksite health promotion programs).
22.A.1c Identify dangerous situations and safety methods to reduce risks (e.g., traffic, improper use of medicine and poisons, strangers).	**22.A.2c** Describe and compare health and safety methods that reduce the risks associated with dangerous situations (e.g., wearing seat belts and helmets, using sunscreen).	**22.A.3c** Explain routine safety precautions in practical situations (e.g., in motor vehicles, on bicycles, in and near water, as a pedestrian).	**22.A.4c** Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community (e.g., first aid, CPR).	**22.A.5c** Explain how health and safety problems have been altered by technology, media and medicine (e.g., product testing; control of polio; advanced surgical techniques; improved treatments for cancer, diabetes, and heart disease; worksite safety management).
		22.A.3d Identify various careers in health promotion, health care and injury prevention.	**22.A.4d** Research and report about a career in health promotion, health care and injury prevention.	

B. Describe and explain the factors that influence health among individuals, groups, and communities.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
22.B.1a Encourage and support others in making positive health choices (e.g., eating practices, cleanliness, safety practices).	**22.B.2a** Describe how individuals and groups influence the health of individuals (e.g., peer pressure, media and advertising).	**22.B.3a** Describe how the individual influences the health and well-being of the workplace and the community (e.g., volunteerism, disaster preparedness, proper care to prevent the spread of illness).	**22.B.4a** Explain social and economic effects of health problems on individuals and society (e.g., cost of health care, reduction in productivity).	**22.B.5a** Analyze how public health policies, laws, and the media function to prevent and control illness (e.g., product and food labeling, food safety and handling, school immunizations).

C. Explain how the environment can affect health.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
22.C.1a Identify sources and causes of environmental health risks (e.g., air, soil, sun, water, noise, food, chemicals).	**22.C.2a** Explain interrelationships between the environment and individual health (e.g., pollution and respiratory problems, sun and skin cancer).	**22.C.3a** Identify potential environmental conditions that may affect the health of the local community (e.g., pollution, land fill, lead-based paint).	**22.C.4a** Analyze how environmental conditions can affect health on a large scale (e.g., acid rain, oil spills, solid waste contamination, nuclear leaks, ozone depletion).	**22.C.5a** Compare and contrast how individuals, communities, and states prevent and correct health-threatening environmental problems (e.g., recycling, banning leaf burning, restaurant inspections, OSHA standards in the workplace).
		22.C.3b Develop potential solutions to address environmental problems that affect the local community's health.		

D. Describe how to advocate for the health of individuals, families and communities.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
22.D.1a Identify positive health choices and demonstrate ways to communicate individual choices.	22.D.2a Express opinions about health issues and communicate individual health needs.	22.D.3a Identify and communicate with others within your school, family, and community regarding health issues.	22.D.4a Identify health resources to help influence others in making healthy choices.	22.D.5a Explain how individuals can improve or help sustain school or community health initiatives and/or services.

STATE GOAL 23. Understand human body systems and factors that influence growth and development.

Why This Goal Is Important: To achieve healthful individual development, students need to understand human anatomy and physiology, nutrition, stages of growth and development, avoidance of harmful actions, and the characteristics of good health habits. Early learners begin with basic recognition of body systems and growth stages. As students progress, they understand how systems work together and how individual actions affect health. As they themselves grow and develop, students can learn to enhance the process throughout their school years and later life.

A. Describe and explain the structure and functions of the human body systems and how they interrelate.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
23.A.1a Identify basic parts of body systems and their functions (e.g., heart, lungs, eyes).	**23.A.2a** Identify basic body systems and their functions (e.g., circulatory, respiratory, nervous).	**23.A.3a** Explain how body systems interact with each other (e.g., blood transporting nutrients from the digestive system and oxygen from the respiratory system, muscular/skeletal systems [movement] and structure of the brain).	**23.A.4a** Explain how body system functions can be maintained and improved (e.g., exercise/fitness, nutrition, safety).	**23.A.5a** Explain how the systems of the body are affected by exercise and the impact that exercise has on learning.

B. Explain the effects of health-related actions on the body systems.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
23.B.1a Identify healthy actions that influence the functions of the body (e.g., cleanliness, proper diet, exercise).	**23.B.2a** Differentiate between positive and negative effects of health-related actions on body systems (e.g., drug use, exercise, diet).	**23.B.3a** Explain the effects of health-related actions upon body systems (e.g., fad diets, orthodontics, avoiding smoking, alcohol use, and other drug use).	**23.B.4a** Explain immediate and long-term effects of health habits on the body systems (e.g., diet**/**heart disease, exercise/fat reduction, stress management/ emotional health).	**23.B.5a** Understand the effects of healthy living on individuals and their future generations (e.g., not using alcohol, tobacco, and other drugs during pregnancy).

C. Describe factors that affect growth and development.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
23.C.1a Identify individual differences in growth and development among people.	**23.C.2a** Identify physical, mental, social and cultural factors affecting growth and development of children (e.g., nutrition, self-esteem, family, and illness).	**23.C.3a** Describe the relationships among physical, mental, and social health factors during adolescence (e.g., the effects of stress on physical and mental performance, effects of nutrition on growth).	**23.C.4a** Describe changes in physical health and body functions at various stages of the life cycle.	**23.C.5a** Explain how the aging process affects body systems (e.g., vision, hearing, immune system).
	23.C.2b Identify stages in growth and development (e.g., stages in the life cycle from infancy to old age).			

D. Describe and explain the structures and functions of the brain and how they are impacted by different types of physical activity and levels of fitness

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
23. D.1a Locate and identify basic parts of the brain.	**23. D.2a** Locate, identify and describe functions of the basic parts of the brain.	**23. D.3a** Explain how the brain is affected by movement.	**23. D.4a** Explain how brain functions can be maintained and improved through activity.	**23. D.5a** Analyze and communicate information regarding physical activity and fitness levels and their effects on how the brain functions.

STATE GOAL 24: Promote and enhance health and well-being through the use of effective communication and decision-making skills.

Why This Goal Is Important: From an early age, students need to know how to communicate their health needs and learn to take responsibility for their own health. They also need to know how and why personal decisions can affect their own health and well-being. Consideration for the needs of others becomes part of health promotion as well. Students who can clearly identify and communicate about health-related issues—and can make healthful personal decisions—will benefit as they grow and mature in school and into responsible workers and citizens.

A. Demonstrate procedures for communicating in positive ways, resolving differences and preventing conflict.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
24.A.1a Differentiate between positive and negative behaviors (e.g., waiting your turn vs. pushing in line, honesty vs. lying).	**24.A.2a** Identify causes and consequences of conflict among youth.	**24.A.3a** Describe possible causes and consequences of conflict and violence among youth in schools and communities.	**24.A.4a** Describe the effects (e.g., economic losses, threats to personal safety) of conflict and violence upon the health of individuals, families, and communities.	**24.A.5a** Compare and contrast strategies to prevent conflict and resolve differences.
24.A.1b Identify positive verbal and nonverbal communication skills (e.g., body language, manners, listening).	**24.A.2b** Demonstrate positive verbal and nonverbal communication skills (e.g., polite conversation, attentive listening, body language).	**24.A.3b** Demonstrate methods for addressing interpersonal differences without harm (e.g., avoidance, compromise, cooperation).	**24.A.4b** Formulate strategies to prevent conflict and resolve differences.	
		24.A.3c Explain how positive communication helps to build and maintain relationships at school, at home and in the workplace.		

B. Apply decision-making skills related to the protection and promotion of individual, family, and community health.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
24.B.1a Recognize how choices can affect health (e.g., not brushing/tooth decay, smoking/risk of cancer and heart disease).	**24.B.2a** Describe key elements of a decision-making process.	**24.B.3a** Apply a decision-making process to an individual health concern.	**24.B.4a** Explain how decision making affects the achievement of individual health goals.	**24.B.5a** Explain immediate and long-term impacts of health decisions to the individual, family and community.

C. Demonstrate skills essential to enhancing health and avoiding dangerous situations.

EARLY ELEMENTARY	LATE ELEMENTARY	MIDDLE/JUNIOR HIGH SCHOOL	EARLY HIGH SCHOOL	LATE HIGH SCHOOL
24.C.1a Demonstrate basic refusal skills (e.g., "Just Say No," "Stranger Danger").	**24.C.2a** Describe situations where refusal skills are necessary (e.g., cyber bullying, pressure to smoke, use alcohol, and other drugs; join gangs; physical abuse; and exploitation).	**24.C.3a** Apply refusal and negotiation skills to potentially harmful situations.	**24.C.4a** Formulate a plan to achieve individual health goals.	**24.C.5a** Evaluate progress toward the attainment of a health goal.

PHYSICAL DEVELOPMENT AND HEALTH PERFORMANCE DESCRIPTORS

GRADES K-12

Performance Descriptor Stages and Corresponding Grade Level

	K-1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Early HS	Late HS
Stage A	1	2								
Stage B	1	2	3							
Stage C		2	3	4						
Stage D			3	4	5					
Stage E				4	5	6				
Stage F					5	6	7			
Stage G						6	7	8		
Stage H							7	8	9-10	
Stage I								8	9-10	11-12
Stage J									9-10	11-12

Physical Development & Health Performance Descriptors

19A Students who meet the standard can demonstrate physical competency in a variety of motor skills and movement patterns.

Stage A	Stage B	Stage C	Stage D
1. Respond to cues that enhance the development of basic locomotor, non-locomotor, and manipulative skills. 2. Demonstrate locomotor, non-locomotor, and manipulative skills. 3. Understand the differences between personal space and general space. 4. Participate in activities/games that make the heart beat faster and increases the rate of breathing.	1. Discuss cues that enhance the development of selected manipulative skills. 2. Demonstrate basic locomotor, non-locomotor, and manipulative skills using developmentally appropriate form. 3. Combine two or more locomotor and/or non-locomotor skills in a sequence. 4. Demonstrate an awareness of others while moving in general and/or personal space. 5. Identify physical activities/games that make the heart beat faster and increase the rate of breathing. 6. Participate in activities/games that make the heart beat faster and increase the rate of breathing.	1. Move through space while changing direction. 2. Demonstrate a proper form while executing all locomotor and non-locomotor movements. 3. Use correct form executing selected manipulative skills. 4. Demonstrate control in general and self space. 5. Discuss perceived exertion. 6. Participate in moderate to vigorous physical activity for an extended period of time (e.g., rate of perceived exertion 4-7 on a 10 point scale).	1. Combine basic locomotor and non-locomotor patterns. 2. Develop control while performing manipulative skills. 3. Demonstrate balance when performing basic skills 4. Participate in moderate to vigorous physical activity for an extended period of time (e.g., rate of perceived exertion 4-7 on a 10 points scale). 5. Understand the concept of perceived exertion.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

19A Students who meet the standard can demonstrate physical competency in a variety of motor skills and movement patterns.

Stage E	Stage F	Stage G
1. Utilize locomotor and/or non-locomotor movements in physical activity. 2. Refine control while performing a manipulative skill. 3. Refine control while performing a locomotor and/or a non-locomotor sequence. 4. Perform two or more locomotor and/or non-locomotor skills in combination/sequence with control. 5. Combine basic locomotor and non-locomotor patterns with smooth transitions. 6. Develop control when moving through space while adjusting speed, force, level, pathway and direction. 5. Participate in moderate to vigorous physical activity for an extended period of time (e.g., rate of perceived exertion 4-7 on a 10 point scale). 6. Report exertion levels during a variety of activities/games.	1. Create combinations of locomotor/non-locomotor movement and manipulative skills in selected activities. 2. Demonstrate locomotor/non-locomotor skills while manipulating objects. 3. Practice combinations of sport related skills using correct form (ready position, hitting phase, follow-through). 4. List specific elements of proper form for various sport skills. 5. Use vocabulary specific to activities, games, or sport. 6. Participate in moderate to vigorous physical activity for an extended period of time (e.g. rate of perceived exertion 4-7 on a 10 point scale).	1. Demonstrate effective movement patterns in a variety of movement forms. 2. Perform selected sport skills using correct form. 3. Apply sport skills in game-like situations using correct form. 4. Participate in moderate to vigorous physical activity for an extended period of time (e.g. rate of perceived exertion 4-7 on a 10 point scale, reaching an appropriate heart rate training zone). 5. Classify physical activities as being either ‘aerobic’ or ‘anaerobic’.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

19A Students who meet the standard can demonstrate physical competency in a variety of motor skills and movement patterns.

Stage H	Stage I	Stage J
1. Utilize a variety of motor patterns while manipulating objects. (changing pathway, direction). 2. Use correct form while performing skills during activities, games, or sport. 3. Demonstrate effective skill performance in selected activities, games, or sport. 4. Identify personal performance factors that impact the outcome of activities, games, or sport. 5. Participate in moderate to vigorous physical activity for an extended period of time (e.g. rate of perceived exertion 4-7 on a 10 point scale, reaching an appropriate heart rate training zone).	1. Demonstrate skill competencies in a variety of leisure activities, individual/dual sports, team sports, creative movement patterns, and work-related activities. 2. Demonstrate mechanically correct movement during activities, games, or sports. 3. Demonstrate physiologically efficient movement during activities, games, or sports. 4. Choose proper application of skill during game play. 5. Combine knowledge of basic skills and strategies to participate successfully in each of the following categories: work-related activities, leisure activities, creative movement activities, team sports, and individual/dual sports. 6. Participate in moderate to vigorous physical activity for an extended period of time (e.g., rate of perceived exertion 8-10 on a 10 point scale, reaching an appropriate heart rate training zone).	1. Analyze personal performance for effective movement. 2. Apply results of self-analysis for personal improvement. 3. Critique self-selected activity for his/her own ability to adjust to the changing environment. 4. Apply basic skills inherent to any activity with consistent positive results. 5. Compare skill development changes that occur from childhood to adulthood in a self-selected individual/ dual/team sport, creative movement activities, or work-related activities. 6. Participate in moderate to vigorous physical activity for an extended period of time (e.g., rate of perceived exertion 8-10 on a 10 point scale, reaching an appropriate heart rate training zone).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

19B Students who meet the standard can analyze various movement concepts and applications.

Stage A	Stage B	Stage C	Stage D
1. Move in different ways, alone or within a group, understanding with whom or with what the mover is relating. 2. Respond to teacher prompts that enhance the development of weight bearing and balance activities on a variety of body parts. 3. Demonstrate spatial awareness in personal and general space (directional, levels, pathways) behind, ahead of, next to, near to, over, under, on, through, beside.	1. Identify personal space. 2. Demonstrate a combination of two simple weight bearing and/or balance movements or activities. 3. Distinguish between moving behind, ahead of, next to, near to, over, under, on, through, beside. 4. Relate activity-based movement skills to movement concepts using the qualities of movement such as speed and flow (e.g., participate in dodging/ fleeing activities in slower speeds without running into others or objects).	1. Move accurately in various directions (behind, ahead of, next to, near to, over, under, on, through, beside). 2. Demonstrate flow and smooth transitions between multiple movements or within movement patterns (e.g., participate successfully in obstacle course activities, participate successfully in dodging/fleeing activities without running into others or objects, participate, with teacher prompts, in physical activities without interfering with others or objects). 3. Identify simple cues involved in weight transfer and balance movements. 4. Demonstrate the manipulation of objects to change direction and/or distance.	1. Explain movement in terms of effort, flow, space, and time. 2. Participate in physical activities without interfering with others or objects with fewer teacher prompts. 3. Sequence combinations of more complex weight transfer and balance movements (mule kick vs. cartwheel). 4. Demonstrate control while manipulating object(s) to change direction and/or distance. 5. Identify the components of a variety of locomotor, non-locomotor, and manipulative skills.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

19B Students who meet the standard can analyze various movement concepts and applications.

Stage E	Stage F	Stage G
1. Demonstrate locomotor movements using a variety of changes in effort, flow, space, and time. 2. Demonstrate manipulative skills using a variety of changes in effort, flow, space, time, weight transfer, balance, absorption, and application of force. 3. Participate in a wide variety of physical activities without interfering with others or with objects. 4. Identify biomechanical principles of movement related to weight transfer, balance, absorption, and application of force. 5. Demonstrate movement where balance is established, lost, and gained. 6. Perform a sequence that combines weight transfer and balance movements. 7. Identify the components of a variety of locomotor, non-locomotor, and manipulative skills. 8. Manipulate object(s) with accuracy to change its direction and/or distance.	1. Develop movement skills that demonstrate mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base). 2. Define additional biomechanical principles (e.g., torque, projection angle, weight transfer). 3. Apply concepts of effort, flow, space, and time into establishment of mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base).	1. Explain manipulative and locomotor movement combinations in terms of mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base). 2. Demonstrate proper biomechanical principles (torque, projection angle, tracking, weight transfer). 3. Demonstrate mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base) in a variety of manipulative skills. 4. Explain how to alter the outcome of a skill by application of a biomechanical principle. 5. Identify biomechanical / movement concepts that are applied in each activity in which they participate (e.g. weight transfer: paddle stroke, follow through: to enhance force and direction when throwing, speed and weight transfer: dance steps).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

19B Students who meet the standard can analyze various movement concepts and applications.

Stage H	Stage I	Stage J
1. Identify mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base) in a variety of locomotor, non-locomotor, and manipulative skills. 2. Relate biomechanical principles to mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base). 3. Demonstrate mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base) in a variety of manipulative skills. 4. Predict the result of a change in movement by manipulating a biomechanical principle (i.e., the harder you hit an object, the farther it will go). 5. Observe and critique performance of a manipulative skill of a classmate and identify the effective use of mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base).	1. Analyze the effectiveness of a variety of skills based on the application of biomechanical principles and mechanically correct form (typically, moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base). 2. Demonstrate mechanically correct form (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base) of a variety of manipulative skills within a game or performance setting. 3. Observe classmates or a self-video and evaluate a variety of skills based on the application of biomechanical principles (moving into position, establishing a balanced base, preparatory phase, movement phase, follow through, and return to base). 4. Identify effective use of selected biomechanical principles involved in the performance of skills, games, and/or rhythmic movements.	1. Observe and critique a performance of a manipulative skill of a classmate and identify a variety of biomechanical principles that contribute to the effectiveness of the performance. 2. Observe and critique a performance of a classmate and identify the level of efficiency of the performance. 3. Select a skill and analyze the skill for maximum effectiveness and efficiency. 4. Design a plan for improvement of the skill to increase effectiveness and efficiency. 5. Design a plan for improvement of a game or dance performance to increase effectiveness and efficiency. 6. Design a plan for learning a new skill based on requirements of effectiveness and efficiency. 7. Design a plan for modifying a new skill based on requirements of effectiveness and efficiency in performing the skill. 8. Identify the effect of fitness levels on the performance of a variety of skills (movement efficiency). 9. Identify the effect of fitness levels on the performance of games and dance (movement efficiency).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

19C Students who meet the standard can demonstrate knowledge of rules, safety and strategies during physical activity.

Stage A	Stage B	Stage C	Stage D
1. Develop responsibility for safe movement practices. 2. Recite the safety guidelines for daily activities. 3. Participate safely in physical activity by following rules and directions. 4. Work cooperatively with others during activity. 5. Repeat safe practices and/or behaviors for physical activity. 6. With teacher support, demonstrate safe movement in general and personal space. 7. List possible injuries that can occur when not following safety rules.	1. Recognize the safety factors associated with participating in physical activities. 2. Apply class rules, procedures, and safety practices. 3. Choose between safe and unsafe practices/behaviors. 4. Work cooperatively with others during activity 5. Identify safety procedures when participating in group physical activity. 6. Move with an awareness of others in general space.	1. Apply safe moving practices with some teacher prompts. 2. Follow class rules, procedures, and safety practices. 3. Demonstrate understanding of personal and group safety. 4. Work cooperatively and show respect for others during activity 5. Participate safely in group physical activity. 6. Identify necessary precautions to avoid injury. 7. Define offense and defense in activities, games, or sports. 8. Discuss the importance of warm-ups and cool down.	1. Explain the importance of warm-ups and cool down. 2. Develop proper techniques for warm-up and cool down activities. 3. Identify ways to measure rate of exertion during physical activity.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

19C Students who meet the standard can demonstrate knowledge of rules, safety and strategies during physical activity.

Stage E	Stage F	Stage G
1. Demonstrate safety procedures/rules when participating in group physical activity. 2. Demonstrate the knowledge of fair play during physical activity 3. Apply rules for activity necessary to maintain a safe environment. 4. Explain offensive, defensive, and cooperative strategies. 5. With teacher support, identify principles of training (intensity, duration, frequency) that can help them to improve components of fitness. 6. Describe the importance of measuring rate of exertion during physical activity. 7. Follow guidelines for proper use of equipment and facilities for specific physical activities (e.g. not lofting a bowling ball). 8. Participate in activity-appropriate warm-ups and cool down. 9. Describe how participating in physical activity, at a moderate to vigorous rate, will maintain and/or improve health and cognition.	1. Adhere to safety procedures during activity. 2. Create safety rules for specific activities, games, or sports. 3. Discuss the potential consequences of participating in a safe and unsafe environment during activity. 4. Demonstrate cooperative strategies during activity. 5. Apply offensive, defensive, and cooperative strategies in selected activities, games, or sports. 6. Follow rules when participating in a wide variety of activities, games, or sports. 7. Define and model the components of sportsmanship and fair play. 8. Respect individual differences and abilities during physical activity. 9. With teacher support, select principles of training (intensity, duration, frequency) that can help them to improve components of fitness. 10. Describe how monitoring rate of exertion contributes to assisting students with maintaining and/or improving their health and level of fitness. 11. Follow guidelines for proper use of equipment and facilities for specific physical activities (e.g. not lofting a bowling ball). 12. Participate in physical activities, at a moderate to vigorous rate, in order to maintain and/or improve health and cognition.	1. Recognize potentially unsafe situations, facilities, and/or equipment. 2. Discuss how cooperative strategies might be employed during activity. 3. Practice offensive, defensive, and cooperative strategies used during games, activities, or sports. 4. Apply appropriate game rules. 5. Demonstrate sportsmanship. 6. Discuss ways to resolve conflict during physical activity. 7. Participate in physical activities, at a moderate to vigorous rate, in order to maintain and/or improve health and cognition.
Grade 6 (E-F-G)	Grade 7 (F-G-H)	Grade 8 (G-H-I)	Grade 9-10 (H-I-J)	Grade 11-12 (I-J)

Physical Development & Health Performance Descriptors

19C Students who meet the standard can demonstrate knowledge of rules, safety and strategies during physical activity.

Stage H	Stage I	Stage J
1. Engage in safe practices before, during, and after activities, games, or sports. 2. Demonstrate cooperative strategies during physical activity. 3. Apply offensive, defensive, and cooperative strategies used during activities, games, or sports. 4. Apply rules during physical activity. 5. Demonstrate good sportsmanship. 6. Participate in physical activities, at a moderate to vigorous rate, in order to maintain and/or improve health and cognition.	1. Apply safe practices, rules, and procedures in all physical activity settings. 2. List rules and procedures to enhance safety. 3. Apply offensive, defensive, and cooperative strategies during activities, games, or sports. 4. Apply rules during activities, games, or sports. 5. Demonstrate good sportsmanship. 6. Participate in physical activities, at a moderate to vigorous rate, in order to maintain and/or improve health and cognition.	1. Take part in activities in a safe and appropriate manner. 2. Apply cooperative strategies during activities, games, or sports. 3. Select appropriate strategies to offset the opponent's strategies. 4. Apply rules during self-officiated activities, games, or sports. 5. Modify existing components of a specific activity to improve that activity (increase the participation). 6. Create an activity using rules, strategies, and safe methods in which classmates can participate. 7. Participate in physical activities, at a moderate to vigorous rate, in order to maintain and/or improve health and cognition.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

20A Students who meet the standard know and can apply the principles and components of health-related and skill-related fitness as they apply to learning and performance of physical activities.

Stage A	Stage B	Stage C	Stage D
1. Participate in health-related and skill-related fitness activities. 2. Identify activities that will change your heart rate. 3. Demonstrate how to locate a pulse in the wrist or neck to measure heart rate.	1. Participate in health-related and skill-related fitness activities. 2. Identify activities that help improve health-related and skill-related fitness. 3. Identify activities that will change your heart rate. 4. Discuss changes that take place in the body after physical activity. 5. List components of health-related and skill-related fitness.	1. Participate in health-related fitness and skill-related activities. 2. Match a variety of physical activities to their fitness component. 3. Identify what activities will improve health-related and skill-related fitness. 4. Discuss the benefits of physical activity. 5. Discuss changes that take place in the body before, during, and after physical activity as it pertains to learning. 6. Differentiate between risks and benefits of health-related fitness activities.	1. Participate in health-related fitness activities that will improve cardiovascular endurance, flexibility, muscular strength, and muscular endurance. 2. Participate in skill-related fitness activities that will improve balance, coordination, spatial awareness, speed and reaction time. 3. Identify activities that positively impact overall fitness. 4. Identify the immediate effects of exercise on the body. 5. Discuss the benefits of physical activity. 6. Label the components of health-related and skill-related fitness.
Grade K-1 (A-B)	Grade 2 (A-B-C)	Grade 3 (B-C-D)	Grade 4 (C-D-E)	Grade 5 (D-E-F)

Physical Development & Health Performance Descriptors

20A Students who meet the standard know and can apply the principles and components of health-related and skill-related fitness as apply to learning and performance of physical activities.

Stage E	Stage F	Stage G
1. Participate in moderate to vigorous levels of physical activity on a daily basis. 2. Participate in a progression of activities that will maintain or improve personal fitness levels and preparedness to learn. 3. Identify activities appropriate for warm-up and cool down. 4. Identify the benefits of health-related and skill-related fitness (e.g. aerobic activities improving CV Endurance and cognition). 5. Identify diseases/disorders associated with poor levels of fitness. 6. Define the effects of selected components of health-related and skill-related fitness on current and future health. 7. Use and understand age-appropriate vocabulary related to fitness. 8. Identify principles of training (FITT: frequency, intensity, time, and type) in a physical activity.	1. Discuss the effects of physical activity and fitness on health (current and future) and cognitive function. 2. Perform physical activity that will benefit cardiovascular fitness, flexibility, muscular strength, and muscular endurance, balance, spatial awareness, coordination, speed, power. 3. Participate in moderate to vigorous levels of physical activity on a daily basis. 4. Participate in a progression of activities that will maintain or improve personal fitness levels and readiness to learn. 5. Define principles of training (FITT: frequency, intensity, time, and type) in a physical activity.	1. Identify and describe the benefits and elements of health-related and skill-related fitness. 2. Identify the reasons for changes in your personal level of fitness (e.g., FITNESSGRAM ®). 3. Participate in moderate to vigorous levels of physical activity on a daily basis. 4. Participate in a progression of activities that will maintain or improve personal fitness levels and readiness to learn. 5. Identify and define principles of training (FITT: frequency, intensity, time, and type) in a physical activity.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

20A Students who meet the standard know and can apply the principles and components of health-related and skill-related fitness as apply to learning and performance of physical activities.

Stage H	Stage I	Stage J
1. Describe how various activities can affect fitness components. 2. Identify potential risks to health based on components of a fitness profile that are below the healthy level. 3. Understand how exercise affects body composition. 4. Understand how exercise affects brain function. 5. Participate in moderate to vigorous levels of physical activity on a daily basis. 6. Participate in a progression of activities that will maintain or improve personal fitness levels and cognitive function. 7. Demonstrate muscular strength while engaged in physical activity. 8. Demonstrate muscular endurance while engaged in physical activity. 9. Demonstrate flexibility while engaged in physical activity. 10. Demonstrate cardiovascular fitness while engaged in physical activity. 11. Define principles of training (FITT: frequency, intensity, time, and type) in a physical activity. 12. Use appropriate vocabulary to identify the principles of health-related fitness. 13. Apply principles of FITT to establish a progression for improving fitness components. 14. Apply principles of FITT to establish a warm-up, workout, and cool down as elements of a workout plan.	1. Explain the effects of various exercises and physical activities on the components of health-related and skill-related fitness. 2. Describe the limitations and benefits of various fitness-training programs. 3. Participate in moderate to vigorous levels of physical activity on a daily basis. 4. Participate in a progression of activities that will maintain or improve personal fitness levels. 5. Participate in various fitness training programs (interval training, plyometrics). 6. Identify the relationship between fitness and academic performance.	1. Participate regularly in health-enhancing and skill-related fitness in and out of school. 2. Participate in moderate to vigorous levels of physical activity on a daily basis. 3. Participate in a progression of activities that will maintain or improve personal fitness levels. 4. Demonstrate the knowledge, skill, and ability to monitor and adjust physical activity levels to meet personal fitness needs. 5. Interpret and evaluate personal physical fitness assessment plan. 6. Formulate a fitness plan that can be implemented and tested by collecting data. 7. Include principles of exercise frequency, intensity, time, type, specificity, progression, and overload into a regular exercise program, including warm up and cool down. 8. Explain data recorded throughout an exercise program. 9. Demonstrate correct adjustment and use of fitness equipment. 10. Display proper exercise technique. 11. Analyze and interpret fitness data and standardized test scores and interpret the data.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

20B Students who meet the standard can assess individual fitness levels.

Stage A	Stage B	Stage C	Stage D
1. Describe what happens to the body when one exercises. 2. Recognize changes that take place in the body during physical activity. 3. Recognize that physical activity will increase the heart rate. 4. Engage in physical activities that will cause increased heart rate. 5. Introduce fitness training.	1. Recall the immediate effects of exercise on the body. 2. Match the components of health-related fitness to fitness assessments. 3. Match level of fitness to health-related fitness components. 4. Participate in health-related fitness activity. 5. Identify personal preferences related to physical activity.	1. Monitor the physiological changes occurring during moderate physical activity. 2. Engage in activities that help achieve the target heart rate zone for a specific amount of time. 3. Explain the immediate effects of exercise on the body. 4. Explain effects of physical activity on the body when changing the level of intensity. 5. Identify personal fitness strengths and weaknesses.	1. Review the immediate effects that physical activity has on the body. 2. Explain what happens to the body the harder one plays, runs, or does physical activity. 3. Explain effects of physical activity on the body when changing the level of intensity. 4. Identify personal fitness strengths and weaknesses 5. Select activities that help achieve the target heart rate zone for a specific amount of time.
Grade K-1 (A-B)	Grade 2 (A-B-C)	Grade 3 (B-C-D)	Grade 4 (C-D-E)	Grade 5 (D-E-F)

Physical Development & Health Performance Descriptors

20B Students who meet the standard can assess individual fitness levels.

Stage E	Stage F	Stage G
1. Record heart rate after engaging in physical activity. 2. Identify target heart rate, maximum heart rate, resting heart rate. 3. Recognize the immediate effects of exercise on heart rate. 4. Demonstrate ways to monitor exertion and heart rate before, during, and after physical activity. 5. Match health-related fitness components to a valid assessment of each component. 6. Identify the health-related fitness components in various activities. 7. Understand how to perform at the intensity level needed to improve cardiovascular fitness and cognition while exercising your heart (e.g., pulse rate, perceived exertion, heart monitor). 8. Explain how to calculate target heart rate zone.	1. Compare one's rate of perceived exertion to one's heart rate after activity. 2. Participate in a variety of assessments to measure level of fitness 3. Match health-related fitness components to a valid assessment of each component. 4. Define and evaluate: target heart rate zone, maximum heart rate, resting heart rate, recovering heart rate, and rate of perceived exertion. 5. With teacher cues, calculate a target heart rate zone.	1. Identify and monitor heart rate during activity (recommended: use of a heart rate monitor). 2. Describe what happens to heart rate as intensity levels increase. 3. Interpret fitness test data. 4. Record heart rate before, during, and after exercise. 5. Match health-related fitness components to a valid assessment of each component. 6. Perform at the intensity level needed to improve cardiovascular fitness and cognition while exercising your heart (e.g., pulse rate, perceived exertion, heart monitor).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

20B Students who meet the standard can assess individual fitness levels.

Stage H	Stage I	Stage J
1. Demonstrate effective use of a heart rate monitor during physical activity. 2. Calculate resting, target, and recovery heart rates. 3. Record individual resting, target, and recovery heart rates during selected fitness activities. 4. Compare resting heart rate to recovery heart rate. 5. Report the perceived level of exertion during an activity. 6. Evaluate fitness scores using health-related test norms. 7. Select activities to improve physical fitness level. 8. Match health-related fitness components to a valid assessment of each component.	1. Create a profile to track heart rate and fitness levels over an extended period of time. 2. Assess personal fitness levels. 3. Match health-related fitness components to a valid assessment of each component. 4. Use technology to understand physiological data. 5. Analyze physiological data. 6. Prepare an individual health-related fitness profile and evaluate fitness level on each component.	1. Create a profile to track heart rate and fitness levels over an extended period of time. 2. Measure health/fitness levels in body composition, muscular strength, muscular endurance, flexibility, and cardiovascular endurance. 3. Use multiple assessments to determine current levels of fitness within each component. 4. Match health-related fitness components to a valid assessment of each component. 5. Interpret health-related fitness data collected over a period of time, with and without the use of technology, to assess all components of health-related fitness: body composition, muscular strength, muscular endurance, flexibility, and cardiovascular fitness before, during, and after engaging in an exercise program. 6. Assess improvements in a fitness profile and set new goals. 7. Evaluate behavioral choices and their impact on fitness level. 8. Evaluate the possible effects of heredity on physical wellness. 9. Evaluate the effects of fitness choices on physical wellness.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

20C Students who meet the standard can set goals based upon fitness data and develop, implement, and monitor an individual fitness improvement plan.

Stage A	Stage B	Stage C	Stage D
1. Discuss realistic health-related fitness goals. 2. Set a goal based on fitness data with teacher guidance. 3. Discuss behavioral choices that impact wellness levels.	1. Set goals based on fitness data with teacher guidance. 2. Participate in teacher directed activities that can develop health-related fitness goals. 3. Discuss behavioral choices that impact wellness levels.	1. Identify a realistic health-related goal. 2. Monitor progress of a health-related fitness goal. 3. Identify positive and negative behavioral choices and their impact on wellness levels.	1. List health-related goals based on fitness assessments. 2. Evaluate progress of health related fitness goals. 3. Explain fitness scores to parents/guardians. 4. Evaluate positive and negative behavioral choices and their impact on wellness levels.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

20C Students who meet the standard can set goals based upon fitness data and develop, implement, and monitor an individual fitness improvement plan.

Stage E	Stage F	Stage G
1. Set a personal goal specific to a component of health-related fitness. 2. Monitor progress in reaching the goal. 3. Write a planned list of activities used to accomplish a personal goal. 4. Explain how movement can improve health-related fitness components. 5. Explain the relationship between various movements and health-related fitness components (e.g., running/ cardiovascular). 6. Interpret personal fitness results. 7. Explain the relationship between behavioral choices and wellness levels.	1. Select an additional health-related fitness goal and based on the level of fitness, write a list of activities to accomplish the goal. 2. Monitor progress in reaching the goal.	1. Set personal goals from health-related fitness scores. 2. Identify a health-related fitness goal based on fitness levels, and select activities to meet that goal. 3. Identify fitness levels with use of data on level of fitness. 4. Construct a personal plan to improve health-related fitness scores for one component. 5. Record scores and monitor progress. 6. Choose from a list of activities that can improve one's health/fitness plan. 7. Explain what activities can be used to improve health-related fitness scores. 8. Identify components of the FITT principles needed to create a plan for achieving a goal. 9. Develop a list of healthy behavioral choices to improve fitness levels.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

20C Students who meet the standard can set goals based upon fitness data and develop, implement, and monitor an individual fitness improvement plan.

Stage H	Stage I	Stage J
1. Understand how to set a realistic fitness goal. 2. Develop short-term and long-term goals as related to fitness. 3. Select a health-related fitness component, set a short-term goal, and write a plan. 4. Select a health-related fitness component, set a long-term goal, and write a plan. 5. Identify opportunities within the community for regular participation in physical activities (e.g., swimming, community walks and runs, park district programs). 6. Identify facilities within the community to use for regular participation in physical activities (e.g., parks, ice rinks, tennis courts). 7. Use frequency, intensity, time, and type (FITT) when writing a plan to meet your fitness goal. 8. Implement healthy behavioral choices as part of a fitness program.	1. Set short-term fitness goals specific for each component of health-related fitness based on individual needs assessment. 2. Design a personal fitness program that incorporates all health-related fitness components and principles. 3. Analyze personal fitness profile. 4. Evaluate opportunities within the community for regular participation in physical activities (e.g., swimming, community walks and runs, park district programs). 5. Evaluate facilities within the community to use for regular participation in physical activities (e.g., parks, ice rinks, tennis courts). 6. Evaluate a fitness product or advertisement. 7. Compare and contrast behavioral choices to personal fitness levels.	1. Write health-related fitness goals that reflect current fitness level, length of available time, equipment and facilities, and realistic goals. 2. Incorporate the specific health and exercise behaviors necessary to attain the short-term and long-term goals. 3. Recognize possible difficulties in achieving both short and long-term goals and identify strategies to overcome these difficulties. 4. Determine the level of success in meeting these goals. 5. Analyze results of health-related goals for each specific health-related fitness component. 6. Evaluate short-term goals. 7. Perform periodic assessments of each component of health-related fitness. 8. Revise a fitness program to reflect changes in age and/or possible changes in health status (e.g., illness or injury). 9. Adjust or modify personal fitness plan as warranted. 10. Keep a personal fitness log that includes warm-up activities, complete descriptions of conditioning exercises and activities, workout hours and minutes, intensity, repetitions, sets, frequency, and cool down activities. 11. Evaluate the contents of a personal exercise log. 12. Evaluate behavioral choices and their impact on personal fitness levels.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

21A Students who meet the standard can demonstrate personal responsibility during group physical activities.

Stage A	Stage B	Stage C	Stage D
1. Listen to class procedures during physical activity. 2. Remember the safety procedures that should be followed during physical activity. 3. Participate safely in physical activity. 4. Repeat safe practices and/or behaviors during physical activity. 5. Demonstrate the ability to work independently and cooperatively during physical activity. 6. Complete part(s) of a task when participating in physical activity.	1. Recall the class procedures followed for participation in physical activity. 2. Repeat the safety procedures followed when participating in physical activity. 3. Participate safely in physical activity. 4. Choose between safe and unsafe practices and/or behavior. 5. Follow directions when participating in physical activity. 6. Perform independently and cooperatively when participating in physical activity. 7. Complete a task when participating in physical activity.	1. List the class procedures followed for participating in physical activity. 2. Identify the safety procedures followed when participating in physical activity in class. 3. Participate safely in group physical activity. 4. Follow rules and directions when participating in group physical activity. 5. Perform individual roles when participating in group physical activity. 6. Complete a task in a given amount of time when participating in a group physical activity. 7. Identify individual behaviors that need to be changed in order to work successfully in a group. 8. Give examples of ways to settle disagreements.	1. Identify the safety procedures to be followed during participation in a group physical activity. 2. Respect the personal space of others when moving within individual self-space. 3. List the class procedures to be followed to participate successfully in a group physical activity. 4. Discuss the benefits of having rules when participating in physical activity. 5. List the consequences of not following the class procedures and/or rules. 6. Demonstrate knowledge of the rules in effect when participating in a group physical activity. 7. Follow directions when participating in physical activity. 8. Change individual behaviors to work successfully within a group. 9. Examine how to settle disagreements when participating in physical activity.
Grade K-1 (A-B)	Grade 2 (A-B-C)	Grade 3 (B-C-D)	Grade 4 (C-D-E) Grade 5 (D-E-F)

Physical Development & Health Performance Descriptors

21A Students who meet the standard can demonstrate personal responsibility during group physical activities.

Stage E	Stage F	Stage G
1. Discuss the class procedures to be followed during participation in a group physical activity. 2. Explain the safety procedures and rules to be followed during participation in a group physical activity. 3. Respect the personal space of others as well as the relationship to objects when moving safely within individual self-space. 4. List the consequences for not following the class procedures/rules. 5. Follow rules and instructions when participating in a group activity. 6. Follow specific rules and guidelines for participating safely in specific activities (e.g., spotting in weight training or gymnastics, wearing appropriate clothing) 7. Demonstrate how to settle disagreements concerning rule discrepancies without teacher intervention during physical activity. 8. Analyze the impact of individual behaviors on group physical activity. 9. Discuss the need for officiating during physical activity. 10. Demonstrate the ability to remain on task when participating in physical activity.	1. Demonstrate the ability to remain on task when participating in physical activity. 2. Explain all the rules of safety and why each rule is important in group physical activity. 3. Engage in safe physical activity when a leader is officiating (e.g., apply safety procedures and rules). 4. Create rules for physical activities. 5. List individual behaviors that can positively and/or negatively affect the success of a group. 6. Follow specific rules and guidelines for participating safely in specific activities (e.g., spotting in weight training or gymnastics, wearing appropriate clothing).	1. Recognize situations where the decision-making process is needed when participating in physical activity. 2. Demonstrate the ability to remain on task when participating in physical activity for a designated period of time. 3. Demonstrate individual responsibility during group physical activity. 4. Apply safety rules in effect during group physical activity. 5. Engage in safe physical activity when a teacher or peer is officiating. 6. Create rules for small groups engaged in physical activity. 7. Demonstrate positive behaviors that contribute to the success of a group. 8. Recognize the role an individual plays in group physical activity. 9. Examine how to change the rules of an activity or game in order to include every participant. 10. Follow specific rules and guidelines for participating safely in specific activities (e.g., spotting in weight training or gymnastics, wearing appropriate clothing).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

21A Students who meet the standard can demonstrate personal responsibility during group physical activities.

Stage H	Stage I	Stage J
1. Establish various roles within groups that are engaged in physical activity. 2. Demonstrate individual responsibility during group physical activity. 3. List the leadership skills used when participating in physical activity. 4. Demonstrate the decision-making model. 5. Remain on task when participating in group physical activity until a task is completed. 6. Demonstrate safety rules in effect during group physical activity. 7. Engage in physical activity when under the direction of a leader. 8. Create rules for large groups engaged in physical activity. 9. Examine the roles individuals play in group physical activity. 10. Examine how to change the rules of an activity or game in order to include every participant. 11. Identify and follow specific rules and guidelines for participating safely in specific activities (e.g., spotting in weight training or gymnastics, wearing appropriate clothing).	1. Apply decision-making process when participating in physical activity. 2. Practice decision-making skills both independently and with others when participating in physical activity. 3. Select and determine the appropriate decision-making strategy to use in selected situations when participating in physical activity. 4. Formulate a plan within a group to complete a problem-solving initiative when participating in physical activity. 5. Apply all safety rules and procedures when participating in physical activity. 6. Establish safety limitations for a group physical activity. 7. Apply leadership skills as a group leader when participating in physical activity. 8. Examine how to change the rules of an activity or game in order to include every participant. 9. Identify and follow specific rules and guidelines for participating safely in specific activities (e.g., spotting in weight training or gymnastics, wearing appropriate clothing).	1. Demonstrate problem-solving skills and strategies when participating in physical activity. 2. Coach/facilitate a group of peers when participating in a physical activity. 3. Compare safety procedures used in a variety of physical activities and explain why they are important. 4. Self-officiate games and/or activities when participating in a physical activity. 5. Design a group activity including rules and safety procedures. 6. Examine how to change the rules of an activity or game in order to include every participant. 7. Identify and follow specific rules and guidelines for participating safely in specific activities (e.g., spotting in weight training or gymnastics, wearing appropriate clothing).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

21B Students who meet the standard can demonstrate cooperative skills during structured group physical activity.

Stage A	Stage B	Stage C	Stage D
1. Listen to safe practices and/or behaviors for the day's structured physical activity. 2. Demonstrate the ability to work cooperatively with a partner for a structured physical activity. 3. Complete part(s) of a task when working with a partner or group.	1. Repeat safety practices and/or behaviors when working with a partner during physical activity. 2. Demonstrate the ability to work cooperatively with a partner or small group during physical activity. 3. Complete a task when working with a partner or group with some teacher intervention during physical activity.	1. Identify safety procedures followed when participating in structured group physical activity. 2. Perform cooperatively with a partner when participating in a structured group physical activity. 3. Complete a task with a partner or group in a given amount of time during group physical activity. 4. Recognize the need for individual and shared goals during group physical activity.	1. Identify safety procedures followed when working with a partner during structured group physical activity. 2. Perform cooperatively with a partner or a small group when participating in physical activity. 3. Complete a task with a partner or small group in a given amount of time with little teacher intervention during a physical activity. 4. Discuss the need for individual and shared goals during structured group physical activity.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

21B Students who meet the standard can demonstrate cooperative skills during structured group physical activity.

Stage E	Stage F	Stage G
1. Explain safety procedures that should be followed when working with a partner during structured group physical activity. 2. Perform cooperatively in a small group when participating in structured group physical activity. 3. Complete a task with a partner or small group in a given amount of time with no teacher intervention. 4. Give examples of ways to achieve individual and/or shared goals during group physical activity.	1. Identify and define characteristics of an effective leader. 2. Identify a variety of supportive roles within a cooperative group setting. 3. Identify responsible decision-making skills regarding use of time and rules application. 4. Identify the steps in a decision-making model (i.e. DECIDE model: define the problem, explore the options, consider consequences, identify value, develop action plan, evaluate outcomes) 5. Respect decisions made by others in an activity concerning rules, procedures, and process. 6. Work cooperatively with others. 7. Recognize individual differences in performance within a group.	1. Demonstrate effective leadership skills while interacting with others during structured group physical activity. 2. Practice making decisions when participating in structured group physical activity. 3. Apply decision-making model strategies during a variety of structured group physical activities. 4. Identify consequences of a variety of behavioral choices used when participating in structured group physical activity. 5. Identify strengths and weaknesses of roles played during a cooperative group physical activity. 6. Resolve conflicts that arise during structured group physical activity. 7. Respect and accept individual differences within a group participating in structured physical activity. 8. Make choices based on providing safety to self and others during structured group physical activity. 9. Find positive ways to assert independence during structured group physical activity.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

21B Students who meet the standard can demonstrate cooperative skills during structured group physical activity.

Stage H	Stage I	Stage J
1. Apply leadership skills in various settings during structured group physical activity. 2. Develop a strategy to maximize the contribution of all members of a group during structured group physical activity. 3. Apply decision-making model strategies during a variety of structured group physical activities. 4. Identify positive and negative peer influences when participating in structured group physical activity. 5. Create a plan for improvement of roles played in a cooperative group physical activity. 6. Resolve interpersonal conflict during structured group physical activity. 7. Respect the contribution of others when participating in structured group physical activity. 8. Make choices based on providing safety to self and others during structured group physical activity. 9. Find positive ways to assert independence during structured group physical activity. 10. Consider consequences when confronted with behavior choices when participating in structured group physical activity.	1. Evaluate the quality of decisions made during structured group physical activity. 2. Support others, both physically and emotionally, during structured group physical activity. 3. Resolve interpersonal conflicts with others during structured group physical activity. 4. Demonstrate appropriate techniques for resolving conflicts during structured group physical activity. 5. Plan a strategy to reach an agreed upon goal during structured group physical activity. 6. Explain boundaries, directions, and rules of a given task or game prior to the group physical activity. 7. Recognize effective and ineffective strategies used during a group physical activity. 8. Respect the contribution of others during structured group physical activity. 9. Respect the performance of others during structured group physical activity.	1. Share leadership and supportive roles during structured group physical activity. 2. Support group decisions when participating in structured group physical activities. 3. Compromise/adapt to group needs during physical activity. 4. Resolve interpersonal conflicts with others during structured group physical activity. 5. Encourage others to respond positively to challenges, successes, and failures in structured group physical activities. 6. Assess the group's ability to perform at higher levels of team building in competitive and non-competitive settings during structured group physical activity. 7. Plan a strategy to reach an agreed upon goal during structured group physical activity. 8. Assess the contribution of group members toward goal achievement during structured group physical activity. 9. Respect and acknowledge the different physical performance levels of others when participating in structured group physical activities. 10. Follow through with plans and strategies established to achieve group goals (including team building strategies) when participating in physical activity. 11. Evaluate strengths and weaknesses of the plan or process used to complete a task during structured group physical activity.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

22A Students who meet the standard can explain the basic principles of health promotion, illness prevention, and safety including how to access valid information, products and services.

Stage A	Stage B	Stage C	Stage D
1. Recall the feelings one had when sick. 2. Recognize the importance of covering one's mouth and nose when sneezing or coughing. 3. Demonstrate how to avoid infecting others with germs. 4. Recognize the necessity of washing hands to prevent the transmission of germs. 5. Recite the rules that are in effect on school buses. 6. Show knowledge of safety rules that are in effect on the playground. 7. Explain the meaning of the colors red, yellow, and green on traffic lights. 8. Recognize the color and shape of stop signs. 9. Talk about the importance of taking medicines in the presence of a responsible adult. 10. Practice procedures to follow during tornado and fire drills. 11. Know the proper amount of sleep necessary to maintain good health. 12. Demonstrate how to dress properly in varying types of weather.	1. Recognize the signs and symptoms of sickness (e.g., headache, stomachache, fever). 2. Simulate proper hand washing techniques. 3. Understand the need to brush teeth to remove bacteria. 4. Demonstrate proper tooth brushing techniques. 5. Recognize the importance of proper Kleenex disposal as a way to control disease. 6. Demonstrate proper Kleenex disposal. 7. Recognize the need for and use of seat belts. 8. Demonstrate the use of proper equipment when bicycling, skateboarding, and rollerblading. 9. Recognize the importance of following traffic signs. 10. Discuss basic traffic rules that need to be followed on the way to/from school. 11. Explain what can happen if medicines are used improperly. 12. Demonstrate proper procedures and techniques used during tornado and fire drills. 13. Know what fatigue is and how to take care of it.	1. Explain how good hygiene can prevent illness. 2. Discuss the importance of regular dental exams. 3. Realize how bacteria grow. 4. Describe ways that viruses are transmitted. 5. List ways that people can prevent accidents. 6. Show proper safety procedures on buses and on playgrounds. 7. Follow playground safety rules. 8. Simulate proper procedures to follow when dealing with a variety of traffic situations. 9. List places at home where dangerous chemicals can be found, and explain what should be done to make sure that they do not cause injury or illness. 10. Compare and contrast the feelings of being well and sick. 11. List the three types of primary teeth and their function. 12. Simulate personal response to fire situations (stop/drop/roll, don't open doors with hot doorknobs, move on knees).	1. Discuss the importance of using one's own utensils (eating utensils, toothbrush, comb/brush). 2. State the potential causes of accidents at school, at home, and in the community. 3. Choose and follow proper procedures in a variety of traffic situations. 4. State ways and places that dangerous chemicals can be properly stored. 5. Explain what can happen if dangerous chemicals are ingested. 6. Recognize when symptoms of illness require attention from an adult or a health care provider. 7. Compare and contrast the feelings of being well and being sick. 8. Describe the symptoms of common childhood illnesses (fever, rashes, cough).
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

22A Students who meet the standard can explain the basic principles of health promotion, illness prevention, and safety including how to access valid information, products and services.

Stage E	Stage F	Stage G
1. Discuss procedures to be followed if fire is suspected. 2. Apply safety precautions and basic first aid to injuries (cuts, scrapes, poisons). 3. Explain the importance of regular health screenings (eye, dental, physical). 4. Name items checked by physicians during regular health screenings. 5. State signs and symptoms of illnesses (e.g., measles, mumps, chicken pox). 6. Discuss the benefits of early detection and treatment of illness. 7. Recognize that some diseases can be controlled more easily than others. 8. Discuss behaviors that may be considered to be abusive. 9. Know what to do if abusive behavior is suspected or discovered. 10. Explain the importance of vaccinations. 11. Follow guidelines for proper use of equipment and facilities for specific physical activities (e.g., not throwing a bat, not lofting a bowling ball). 12. Discuss safety precautions when using the internet and social media.	1. Discuss the differences between bacteria and viruses. 2. Apply basic first aid to injuries (burns). 3. Describe common emergency procedures (e.g. fire, weather). 4. List stressors. 5. Describe different types of stress. 6. Describe the signs and symptoms of illness that indicate a person should seek medical treatment (e.g., conscious and unconscious). 7. Describe signs and symptoms of common childhood illnesses. 8. List early detection methods of diagnosing illnesses. 9. Distinguish the difference between communicable and non-communicable diseases. 10. Recognize abusive behaviors. 11. Practice methods to be followed when abusive behavior is suspected or discovered. 12. Identify the types of vaccinations used to maintain health. 13. Follow guidelines for proper use of equipment and facilities for specific physical activities (e.g., not lofting a bowling ball).	1. Compare and contrast bacteria and viruses. 2. Show awareness of rules, regulations, and safety procedures to be followed while engaged in physical activity. 3. Participate in warm-up and cool down activities. 4. Describe safety rules and guidelines to be followed when engaged in physical activity. 5. Talk about various careers that promote health and safety or prevent illness. 6. Apply basic first aid procedures (e.g., bleeding). 7. Describe behaviors/choices that reduce health risks (sleep, nutrition, activity, stress management, hygiene). 8. Recognize that prolonged exposure to stress can be detrimental to health.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

22A Students who meet the standard can explain the basic principles of health promotion, illness prevention, and safety including how to access valid information, products and services.

Stage H	Stage I	Stage J
1. Apply basic first aid procedures (e.g., weather-related injuries). 2. Follow rules, regulations, and safety procedures while engaged in physical activity and encourage others to do so. 3. Explain routine safety precautions (e.g., in motor vehicles, on a bicycle, in and near water, as a pedestrian). 4. Explain safety precautions when using the internet and social media. 5. Indicate behaviors/choices that may increase risks to one's health. 6. Compare and contrast personal health-related behaviors/choices made now and in the past. 7. Demonstrate behaviors/choices that reduce health risks. 8. Explain the possible consequences that prolonged exposure to stress may have on the body. 9. Describe and name STDs. 10. Identify the signs and symptoms of common STDs. 11. Demonstrate basic knowledge of HIV and AIDS.	1. Explore ways that technology can be used to impact health and safety. 2. Discuss ways that the media has influenced health and safety issues. 3. Apply basic first aid procedures (e.g., CPR, Heimlich maneuver). 4. Recognize the differences between communicable and non-communicable diseases. 5. Define the terms 'chronic' and 'acute'. 6. Describe the differences among chronic and acute diseases. 7. Know the differences among diseases that are communicable, non-communicable, acute, chronic, and degenerative. 8. Determine the signs and symptoms of the top three chronic diseases (cancer, heart disease, and diabetes). 9. Identify organisms that cause STDs. 10. Investigate ways that effective health promotion and illness prevention can maintain and/or improve health. 11. Identify 'safe havens' within a community.	1. Chronicle past, present, and future technologies that impact health and safety. 2. Cite specific examples of how the media has impacted views and/or responses to health or safety issues. 3. Apply basic first aid procedures (all presented to date). 4. Describe strategies used to manage communicable diseases. 5. Identify strategies that can be used to manage chronic and degenerative diseases. 6. Analyze personal health strategies that can be followed to maintain and/or improve health. 7. Compare and contrast chronic and communicable diseases. 8. Evaluate the effectiveness of health prevention and illness prevention methods and/or programs. 9. Discover long-term consequences of STDs.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

22B Students who meet the standard can describe and explain the factors that influence health among individuals, groups, and communities.

Stage A	Stage B	Stage C	Stage D
1. Relate to others hygiene habits that improve or maintain health. 2. List personal hygiene behaviors/choices that will increase health and safety. 3. Recognize skills necessary to ensure safety and cleanliness. 4. Know the differences between behaviors that will and will not promote the spread of infectious diseases. 5. Identify people and services within the school responsible for health-related issues. 6. Demonstrate how to prevent the spread of infectious diseases.	1. List hygiene habits that are used daily to maintain or improve health. 2. Use personal hygiene behaviors/choices that will improve health and safety. 3. Listen to and follow rules for playground safety. 4. Demonstrate skills and behaviors used to prevent the spread of infectious diseases. 5. Name the people within the school responsible for health-related services. 6. Identify people and services within the community responsible for health-related services (e.g., fire, paramedics, police). 7. Encourage others to use skills and make choices that will help prevent the spread of infectious diseases.	1. Record daily personal hygiene behaviors. 2. Recite and follow rules for playground safety. 3. Demonstrate knowledge of safety rules within the school. 4. Explain the roles of school personnel responsible for health-related services. 5. Recognize when to use health-related services within the school. 6. Describe how to access health-related services within the school. 7. Cite ways that the media influences health-related behavior.	1. Observe family members and record hygiene behaviors seen. 2. Encourage proper hygiene among family members and classmates. 3. Recognize potential dangers within the school and community. 4. Discuss how to avoid dangers within the school and community. 5. Describe the roles of community personnel responsible for health-related services. 6. Recognize when to use health-related services within the community. 7. Describe how to access health-related services within the community. 8. Give examples of how the media influences health-related behavior. 9. Investigate what job responsibilities different health care personnel have.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

22B Students who meet the standard can describe and explain the factors that influence health among individuals, groups, and communities.

Stage E	Stage F	Stage G
1. Discuss the components of a decision-making process. 2. Cite examples of how the media portrays situations showing self-diagnosis and self-medication. 3. Tell others how they influence other people's health choices/behaviors. 4. Recall positive health behaviors, choices, and skills. 5. Give examples of health-related advertisements. 6. Describe how the media influence health-related behaviors, choices, and skills. 7. Discuss ways to make the school and community safer. 8. List components of moderate to vigorous exercise (e.g., at least 4 on a perceived exertion scale, target heart rate zone, faster breathing).	1. Compare and contrast safety and hygiene of other people and/or cultures. 2. Formulate a plan for making the school a safer place. 3. Use a decision-making process to make a healthy choice in a peer pressure situation. 4. Know where to go for health care and medicines. 5. Discuss how peers influence health-related choices/behaviors. 6. Discuss how to evaluate health-related information. 7. Describe components of moderate to vigorous exercise (e.g., at least 4 on a perceived exertion scale, target heart rate zone, faster breathing) and how they influence cognition.	1. Recognize emergency situations that can impact health and well-being (e.g., tornado, flood, fire). 2. Recall actions and procedures that need to be taken and followed in order to lessen the impact of emergencies on a person's health. 3. Evaluate the reliability of health-related information. 4. Discuss how peers affect health-related choices. 5. Recognize the seriousness of signs and symptoms of illnesses. 6. Articulate how moderate to vigorous physical activity influences cognition.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

22B Students who meet the standard can describe and explain the factors that influence health among individuals, groups, and communities.

Stage H	Stage I	Stage J
1. Demonstrate actions to be taken during emergency situations (tornadoes, fire, lightning). 2. Distinguish between reliable and unreliable health information and advertising. 3. Analyze teen trends and their relationship to health (diet, skin products, body piercing, tattoos). 4. Explain when it is appropriate to stay at home because of an illness. 5. Investigate the history and treatment of disease and their influences on the way we deal with diseases today. 6. Identify and describe factors that affect choices relating to lifelong physical activity (e.g., climate/geography; availability of facilities and equipment; cost).	1. Discuss laws that have been written to govern the production and dissemination of health information and products (e.g., food labels). 2. Identify the steps to follow to become an informed and intelligent health consumer. 3. Explain what it means to be health literate. 4. Discuss how people's productivity (at school, at work, at home) is affected by health. 5. Know the differences between personnel and agencies whose job it is to prevent illness and control and maintain health. 6. Discuss the role that the media have had and should have in the dissemination of health information and in the promotion of health-related products. 7. Investigate the socio-economic effects of health-related issues (prevention, productivity, insurance, health care). 8. Explain the need for appropriate health care throughout life for the prevention and maintenance of health.	1. Analyze laws that govern the production and dissemination of health information and products. 2. Demonstrate the ability to find reliable health information. 3. Recommend ways that individuals, families, and communities can help improve and/or maintain health. 4. Summarize ways that the media have influenced the perception of health issues or health choices. 5. Plan ways to improve and/or maintain health throughout the life cycle.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development and Health Performance Descriptors

22C Students who meet the standard can explain how the environment can affect health.

Stage A	Stage B	Stage C	Stage D
1. Identify elements of the environment that can become polluted. 2. Explain what it means to recycle. 3. Be aware of what pollution is. 4. Name something in the air that can affect personal health.	1. Name the three R's of "saving' the environment (reduce, reuse, recycle). 2. Name recycling methods used at home and at school. 3. List items that can be recycled. 4. Describe ways in which the skin can be burned (e.g. sunburn, tanning beds, radiation). 5. List things that pollute the environment. 6. Recognize different types of pollution (e.g., air, soil, water, noise). 7. Identify the sources of air pollution.	1. Explain how prolonged exposure to the sun can pose a health risk. 2. Cite examples of noise pollution. 3. Name items that are seen or used daily that pollute the environment. 4. Discuss forms of pollution found in the school, community, and home. 5. Identify ways that pollution can be a health risk. 6. Describe how elements of the environment affect personal health. 7. Discover possible causes of air pollution. 8. Discover possible causes of water pollution. 9. Describe what the ozone layer is and why it is important.	1. Describe the benefits of using sunscreens. 2. Investigate specific ways that individuals and communities can reduce pollution. 3. Discuss ways individuals and communities reduce pollution. 4. Know the difference between pollutants and sources of pollution. 5. Identify sources of noise pollution. 6. Investigate the cleanliness of the water within the community. 7. Describe the physical effects that air pollution can have on the body. 8. Explain how recycling can reduce health risks. 9. Compare and contrast health risks related to known pollutants. 10. Recognize that air pollution affects the ozone layer. 11. Explain the relationship between prolonged exposure to the sun and cancer.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development and Health Performance Descriptors

22C Students who meet the standard can explain how the environment can affect health.

Stage E	Stage F	Stage G
1. Discuss methods used by schools, communities, and individuals to dispose of waste. 2. Explain how depletion of the ozone layer can affect health. 3. Explain the possible effects of noise pollution on health. 4. Compare healthy environments and healthy people to unhealthy environments and unhealthy people. 5. Discuss how temperatures affect health. 6. Analyze hazards associated with the prolonged exposure to the sun (ultra-violet rays). 7. Analyze the cleanliness of the water in one's environment. 8. Discover water purification systems used in communities, at home, and at school. 9. Recognize possible sources of pollution in specific environments (your home, your school, your community).	1. Name community and national groups responsible for regulating pollution. 2. Research laws and/or community ordinances that pertain to pollution. 3. Analyze the amount of noise produced by common products and sources and list possible health effects of noise. 4. Research ways to reduce noise pollution in one's environment. 5. Analyze tanning products and their effectiveness in preventing health-related problems. 6. Collect and analyze water from a variety of sources (tap, rain, river). 7. Describe the effects of cigarette smoking on the environment. 8. Investigate the possible health problems caused by inappropriate waste disposal.	1. Research waste disposal and how it may affect future generations and the environment. 2. Identify specific agencies within the community that are responsible for specific environmental concerns/problems. 3. Name organisms that cause food borne illnesses. 4. Recognize food borne illnesses and diseases caused by environmental factors. 5. List chemicals found in cigarette smoke that pollute the body and the environment.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development and Health Performance Descriptors

22C Students who meet the standard can explain how the environment can affect health

Stage H	Stage I	Stage J
1. Debate ways that communities can get rid of waste more efficiently and effectively. 2. Research and report on possible solutions to local community and school environmental problems. 3. Explain the difference between e-coli, salmonella, and botulism. 4. Research the effects on the body and the environment of substances found in cigarette smoke.	1. Discuss global environmental problems and how they affect people. 2. Analyze the history and progress of environmental problems. 3. Investigate food preparation and its effect on food borne illnesses. 4. Discover ways that an individual can reduce the risks of being afflicted with a food borne illness. 5. Recognize the relationship between the environment, disease, and health (e.g., genetic altering of food supply, use of pesticides).	1. Describe specific steps one can take to minimize environmental problems. 2. Research ways the global community is addressing environmental issues. 3. Summarize ways that individuals can impact environmental issues at home, at school, in their community, and in the global community. 4. Compare and contrast how individuals, communities, states, and countries prevent and correct environmental problems.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

22D Students who meet the standard can advocate for the health of individuals, families and communities.

Stage A	Stage B	Stage C	Stage D
1. Know procedures for going to see the school nurse. 2. Communicate your needs to teachers, staff and parents. 3. Practice asking for help in appropriate ways. 4. Identify positive health choices (e.g. washing hands, eating fruits/vegetables). 5. Demonstrate ability to call 9-1-1 and give information.	1. Identify people within the school who can aid with health-related issues. 2. Describe medical emergencies that would require a 9-1-1 call. 3. Ask for help in appropriate ways. 4. Communicate your needs to teachers, staff and parents.	1. Encourage and support peers to make positive health choices (e.g. going out to play rather than computer or TV time). 2. Identify health-enhancing items that are missing in personal environment (e.g. soap, recycling bins). 3. Identify people within the school who can aid with health-related issues and explain the process / procedures for seeing them. 4. Understand and communicate needs to others.	1. Express opinions about health issues. 2. Identify people within the school who can aid with health-related issues and explain the process / procedures for seeing them. 3. Talk about ways to reach out to others when you or they need help and/or friendship. 4. Draw and explain an E.D.I.T.H. plan (e.g. for your home or classroom) – Exit Drills in the Home, emergency exit plan.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

22D Students who meet the standard can advocate for the health of individuals, families and communities.

Stage E	Stage F	Stage G
1. Identify people within the school who can aid with health-related issues and explain the process / procedures for seeing them. 2. Reach out to others when you or they need help and/or friendship 3. Identify personal limitations, assets, and accommodations needed for success. 4. Identify strategies to overcome barriers when communicating information, ideas, feelings, and opinions about health issues.	1. Encourage others (e.g, peers, family, friends) to make healthy choices. 2. Identify people within the school who can aid with health-related issues and explain the process / procedures for seeing them. 3. Make a personal health plan based on limitations, assets, and accommodations. 4. Explain the importance of being a health advocate. 5. Identify ways to communicate health information and ideas to individuals and groups (e.g., being a healthy role model, posters, health fairs). 6. State a health-enhancing position on a topic. 7. Develop strategies to overcome barriers when communicating information, ideas, feelings, and opinions about health issues.	1. State a health-enhancing position on a topic and support it with reliable information/data. 2. Identify people within the school and community who can aid with health-related issues and explain the process / procedures for seeing them. 3. Demonstrate the ability to influence and support others in making positive health choices (e.g., anti-bullying). 4. Identify myths and facts related to health issues (e.g. HIV transmission, drug use). 5. Identify people within the school and community who can aid with health-related issues and explain the process / procedures for setting up an appointment with them.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

22D Students who meet the standard can advocate for the health of individuals, families and communities.

Stage H	Stage I	Stage J
1. Describe ways to influence others to make healthy choices. 2. Support others as they make healthy choices (e.g., compromise, listen actively). 3. Identify community-based health resources that advocate for healthy individuals, families, and communities. 4. Work with others to advocate for healthy individuals, families, and schools.	1. Identify ways in which health messages are communicated (e.g., TV commercials, ads). 2. Explain/describe how to influence others to make healthy choices. 3. Explore school health policies and discuss their effectiveness. 4. Explain ways to change ineffective school health policies. 5. Discuss advertising techniques used to communicate health messages and their effectiveness (e.g. using cartoon characters, TV stars, athletes).	1. Communicate a position on a health-related topic and support it with accurate, reliable information. 2. Describe steps necessary to influence community or national health policy. 3. Discuss types of questions to be asked and information needed when communicating with a physician. 4. Explain how individuals can improve or help sustain school or community health initiatives and/or services (e.g., exercise voting privileges on health issues, talk with legislators, help develop health policies).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23A Students who meet the standard can describe and explain the structure and functions of the human body systems and how they interrelate.

Stage A	Stage B	Stage C	Stage D
1. Identify basic body parts (head, legs, arms, chest, feet, hands, eyes, ears, nose). 2. Position the eyes, ears, and nose correctly on a human being facsimile.	1. Identify the ankles, knees, hips, fingers, elbows, shoulders, neck, and toes. 2. Arrange body parts to form the outline of a human being (head, arms, chest, legs, hands, feet). 3. Explain the function of the eyes, ears, nose, and brain. 4. Demonstrate how ankles, knees, hips, shoulders, elbows, and neck function.	1. Build/construct a human body, consisting of the following parts: head, neck, shoulders, elbows, arms hands, fingers, chest, legs, hips, ankles, feet, and toes. 2. Explain the function of the ankles, knees, hips, shoulders, elbows, and neck. 3. Understand the basic function of a muscle.	1. Locate the brain, heart, lungs, and stomach. 2. Recognize muscles of the body. 3. Locate bones in the body.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

23A Students who meet the standard can describe and explain the structure and functions of the human body systems and how they interrelate.

Stage E	Stage F	Stage G
1. Explain what muscles do for the body. 2. Identify what gives the body its size and shape. 3. Recognize the parts of the digestive system. 4. Label the parts of the respiratory system. 5. Identify the parts of the circulatory system. 6. Identify parts/structures of the nervous system 7. Explain the basic functions of the nervous system. 8. Describe the basic functions of the digestive system. 9. Describe the basic functions of the circulatory system. 10. Explain the basic functions of the respiratory system.	1. Explain how nerves and the brain work together. 2. Explain how exercise affects the brain. 3. Discover how blood travels throughout the body. 4. Analyze how oxygen gets to the lungs. 5. Illustrate how food is processed and moves through the digestive system. 6. Explain the basic functions of the reproductive system. 7. Describe how body systems work together within the body.	1. Discover how oxygen travels throughout the body. 2. Analyze what happens to food once it has been digested. 3. Describe how blood circulates throughout the body. 4. List ways that the body's systems work together. 5. Explain the basic functions of the reproductive system.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23A Students who meet the standard can describe and explain the structure and functions of the human body systems and how they interrelate.

Stage H	Stage I	Stage J
1. Describe how the circulatory and respiratory systems work together. 2. List substances from other systems that are carried by blood. 3. Explain what happens to the brain when it does not get oxygen. 4. Discuss ways that systems impact one another either in a positive or negative way.	1. Recognize that all of the body's systems interrelate and impact each other. 2. Describe the effects of nutrition, stress, substances, and disease on the body's systems. 3. Analyze the effects of different forms of exercise on the body's systems. 4. Investigate ways and behaviors that can improve or maintain the functioning of the body's systems. 5. Recognize personal health behaviors and choices that help or hinder the functioning of the body's systems.	1. Analyze the interrelationships that the systems have on one another. 2. Predict the impact that a person's health behaviors and/or choices may have on the body's systems.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23B Students who meet the standard can explain the effects of health-related actions on the body systems.

Stage A	Stage B	Stage C	Stage D
1. Recognize why it is important to brush your teeth. 2. Describe how germs can cause illness. 3. Understand reasons for consulting a responsible adult before using medicines and/or chemical substances. 4. Recognize the importance of eating breakfast. 5. Identify healthy snacks. 6. Recognize that food (nutrients) is needed for growth and development. 7. Name healthy behaviors that relate to personal hygiene, nutrition, and exercise. 8. List choices that have a positive influence on health. 9. List choices that have a negative influence on health.	1. Demonstrate knowledge of activities that help promote personal cleanliness, improve appearance, and reduce transmission of disease. 2. State rules for taking medicines. 3. Discuss the relationship between germs and disease. 4. Observe and discuss the consequences of behavior choices. 5. Explain the importance of eating a variety of foods. 6. Recognize the relationship between exercise and muscular development. 7. Recognize the importance of calcium to bones. 8. Memorize the USDA food guidelines 9. List choices that have a positive influence on health. 10. List choices that have a negative influence on health.	1. Discuss proper drug use vs. drug abuse. 2. Identify consequences (good and bad) of choosing to use any type of substance. 3. Define the word 'nutrient'. 4. Identify major nutrients and their food sources. 5. Distinguish between 'good' food and 'junk' food. 6. Cite ways to build physical activity into daily routines. 7. Recognize how feelings/emotions affect physical, mental, emotional, and social health. 8. List choices that have a positive influence on health. 9. List choices that have a negative influence on health.	1. Discuss the effects of drug abuse on physical, mental, emotional, and social well-being. 2. Distinguish between drug use, drug misuse, and drug abuse. 3. List the effects that caffeine and nicotine have on the body. 4. Describe positive health behaviors and choices that may prevent common injuries, diseases, and illnesses. 5. Choose healthy foods. 6. Explain how health choices affect the performance of the body's systems. 7. Explain the functions of major nutrients. 8. Explore the relationship between eating habits and the circulatory system. 9. List choices that have a positive influence on health. 10. List choices that have a negative influence on health.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

23B Students who meet the standard can explain the effects of health-related actions on the body systems.

Stage E	Stage F	Stage G
1. List the effects of alcohol, drugs, and tobacco on the body's systems. 2. Explain the relationship between diet and exercise to the body. 3. Recognize the positive effects of physical activity on the body's systems. 4. Recognize the negative effects of physical activity on the body's systems. 5. Define the word 'calorie'. 6. List foods that have high caloric content. 7. Classify foods into groups based on their major nutrient contribution. 8. List choices that have a positive influence on health. 9. List choices that have a negative influence on health.	1. Identify the benefits of both aerobic and anaerobic activities on the body's systems. 2. Predict what will happen if someone eats too many high calorie foods. 3. List choices that have a positive influence on health. 4. List choices that have a negative influence on health.	1. Recognize the importance of establishing an ongoing exercise plan in order to sustain the health of the body's systems. 2. Identify the components of a healthy lifestyle. 3. Evaluate a personal daily diet. 4. List choices that have a positive influence on health. 5. List choices that have a negative influence on health. 6. Describe the short-term effects of tobacco use on the body's systems.
Grade 6 (E-F-G)	Grade 7 (F-G-H) Grade 8 (G-H-I)	Grade 9-10 (H-I-J) Grade 11-12 (I-J)

Physical Development & Health Performance Descriptors

23B Students who meet the standard can explain the effects of health-related actions on the body systems

Stage H	Stage I	Stage J
1. Analyze the effects of drug use, misuse, and abuse on health status. 2. Identify factors affecting basic nutrient and energy requirements. 3. Recognize the impact of diets on health. 4. Discuss the health risks of fad diets and eating disorders (anorexia, bulimia, overeating). 5. Explain the possible dangers of tattooing and body piercing. 6. List choices that have a positive influence on health. 7. List choices that have a negative influence on health. 8. Describe the long-term effects of tobacco, alcohol, and drug abuse on the body's systems.	1. Analyze the effects of drug use on vehicle operation. 2. Analyze how behaviors can impact the maintenance of health and/or the prevention of disease. 3. Discuss the effects of sleep deprivation on the body. 4. Describe the short-term and long-term effects of stress on the body. 5. Know the effects that disease can have on the body's systems (e.g., diabetes, cancer). 6. Compare nutritional value of supplements and additives. 7. Evaluate a diet in terms of sugar, sodium, fats, and fiber. 8. List choices that have a positive influence on health. 9. List choices that have a negative influence on health.	1. Explain how the use of drugs, alcohol, and tobacco can affect a fetus or an infant. 2. Design and construct a diet based on the Dietary Guidelines for Americans and the USDA food guidelines. 3. Analyze how health-related choices made today can affect a person's health in the future. 4. Explain how choices made by a pregnant woman can affect the health status and development of a fetus. 5. List choices that have a positive influence on health. 6. List choices that have a negative influence on health.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23C Students who meet the standard can describe factors that affect growth and development

Stage A	Stage B	Stage C	Stage D
1. Discuss the value of practicing good health habits (sleep, nutrition, relationships). 2. Describe/discuss healthy family activities (meals, doctor visits). 3. Describe how families share time together. 4. Give examples of what makes a friend a friend. 5. Explain the importance of being physically active. 6. Recognize that food (nutrients) is needed for growth and development. 7. Recognize basic emotions/ feelings such as mad, sad, happy, frustrated, afraid. 8. Describe the importance of choosing healthy food as a fuel for physical activity and learning.	1. Recognize caring adults who are significant in one's life. 2. Study the structure of families. 3. Identify ways to help others feel good about themselves. 4. Identify responsibilities one has in daily life. 5. Discuss how one's behavior has consequences. 6. Compare one's growth to that of one's peers. 7. List characteristics that make students similar, different, and unique. 8. Discuss the importance of belonging to a group and what it feels like to be included or excluded. 9. Demonstrate a balance between regular vigorous activities and rest and relaxation. 10. Identify sources of sugar in one's diet. 11. Identify ways that people express feelings. 12. Describe the importance of food, water and sleep as fuel for physical activity and learning.	1. Describe factors that promote dental cavities. 2. Define the word 'stress'. 3. Cite examples of positive and negative stressors. 4. Explain the relationship between fitness and physical activity. 5. Recognize and accept individual differences. 6. Define the words 'prejudice' and 'discrimination'. 7. List growth factors that change one's self-image. 8. Explain how eating and activity affect growth and development. 9. Describe how emotions affect choices, behaviors, and functions of the body. 10. Identify ways that environment affects feelings. 11. Describe different kinds of friendships. 12. Realize that learning to get along with others is a process unique to every person. 13. Describe the effects healthy and unhealthy lifestyle choices have on growth and development. 14. Describe the importance of regular, sustained participation in physical activity for developing strong lungs, muscles, bones and heart.	1. Explain the relationship between behaviors and environment (weather/ appropriate dress; pollen/allergies; pollution/respiration). 2. Classify health choices that are learned from parents, peers, or the media as being healthy or unhealthy. 3. Recognize characteristics of an individual that allow for a unique rate of growth and development. 4. Describe how a family's health history can be passed from parent to child. 5. Examine factors and behaviors that affect growth. 6. List types of prejudice and discrimination. 7. Recognize ingredients listed on food labels. 8. Describe how family, friends, and peers affect food choices. 9. Identify how emotions/feelings affect eating behaviors. 10. Use communication effectively to promote better interpersonal relations. 11. Demonstrate respect for others' feelings, rights, and property.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

23C Students who meet the standard can describe factors that affect growth and development.

Stage E	Stage F	Stage G
1. Describe the effects of drug use (caffeine, nicotine, alcohol, and other drugs) on growth and development of the body. 2. Recognize personal health behaviors and/or choices that reduce risks of health problems. 3. Demonstrate interpersonal behaviors that can help people feel comfortable with one another. 4. Identify risk-taking behaviors. 5. Understand how proper amounts of rest, work, sleep, exercise/activity/play, and nutrition promote physical, mental, and social well-being. 6. Define the word 'puberty'. 7. Identify changes associated with puberty. 8. Identify characteristics of puberty and the effects of these changes on physical, mental, and social development. 9. List factors that contribute to positive self-esteem. 10. Identify ways of knowing how much sugar, fats, sodium, and fiber one consumes. 11. Recognize reliable sources of food and dietary information. 12. Develop the ability to formulate new friendships. 13. Explain how and which hereditary traits are passed on from parent to child.	1. Explain why each individual is primarily responsible for his or her own decisions regarding the use, misuse, or abuse of substances. 2. Describe the rate of growth change during puberty. 3. Explain the effects of diet and exercise on body weight and composition. 4. Identify portion size and number of servings suggested to fulfill basic nutritional needs. 5. Identify the roles significant people in an individual's life play in providing a mental, emotional, and social support system. 6. Define the phrase 'peer pressure'. 7. Describe the process of group decision-making. 8. List ways to counteract negative risk factors (delay factor, refusal skills). 9. Recognize the effects of personal health practices/choices on physical, mental, emotional, and social well-being. 10. Describe physical, emotional and social benefits of daily participation involving moderate to vigorous physical activity.	1. Describe situations and/or choices affecting the use, misuse, or abuse of substances that will affect physical, mental, emotional, and social growth and development. 2. Investigate options for healthy weight loss and gain. 3. Discuss physical, mental, emotional, and social changes that occur during puberty. 4. Recognize the relationships between diet (excesses and deficiencies) and the body's systems. 5. Describe the principles of energy balance (calorie intake and expenditure). 6. Describe how peers influence one's life. 7. Discuss dating as one way of exploring friendships and learning new social skills. 8. Identify criteria for acceptable dating behavior. 9. Identify and develop effective coping skills. 10. Investigate the impact that significant people have on the health choices/lifestyles of others.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23C Students who meet the standard can describe factors that affect growth and development.

Stage H	Stage I	Stage J
1. Discuss the influences and behaviors that may lead to eating disorders. 2. Identify situations that cause stress. 3. Recognize stress management techniques. 4. Identify the possible impact of death, loss, and/or divorce on the family and friends. 5. Investigate the relationships of, and the disparities among, physical, mental, emotional, and social changes occurring during puberty. 6. Use the principles of energy balance to plan a diet and activity routine that will result in healthy body weight and composition. 7. Use knowledgeable consumer skills to purchase healthy foods. 8. Recognize social forces and norms that exert positive or negative influences on health practices, including fitness and diet. 9. Practice effective methods of communication (written, verbal, non-verbal). 10. Practice conflict resolution skills. 11. Identify health-related choices which, if made today, can affect a person's physical, mental, emotional and social growth and development in the future. 12. Discuss how making healthy choices and knowing family health history can help a person live a more healthy life.	1. Identify the responsibilities and consequences in relationships. 2. Demonstrate stress management techniques. 3. Explain the long-term effects of stress on physical, mental, emotional, and social health. 4. List interventions and strategies that can be utilized in a variety on health-related situations. 5. Discuss the characteristics and development needs related to the stages of the life cycle. 6. Identify the different stages of the life cycle. 7. Explain the relationship between conception and the fertility cycle. 8. Apply the principles of energy balance, calorie intake, and expenditure to plan a diet and activity routine that will result in healthy body weight and composition. 9. Incorporate effective methods of communication (verbal, non-verbal, and written) into daily activities. 10. Analyze food choices and activity practices used to maintain weight and body composition. 11. Discuss how health-related choices made today can affect a person's physical, mental, emotional, and social growth and development in the future.	1. Analyze the interrelationships of work, family roles, school, and peers on a person's physical, mental, emotional, and social health. 2. Design and implement a personal health plan adaptable to changing lifelong needs. 3. Explain how choices and behaviors of a pregnant woman can affect fetal health and development. 4. Analyze diets for variety and balance. 5. Evaluate dietary options, supplements, and additives as they might affect health. 6. Analyze marketing/media influences on health choices. 7. Analyze how health-related choices made today can affect a person's physical, mental, emotional, and social growth and development in the future.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23D Students who meet the standard can describe and explain the structures and functions of the brain and how they are impacted by different types of physical activity and levels of fitness

Stage A	Stage B	Stage C	Stage D
1. Locate the brain in the body.	1. Locate and identify basic parts of the brain (e.g. cerebrum, cerebellum, medulla (brain stem).	1. List ways the brain benefits from exercise.	1. Map the brain and identify the cerebrum, prefrontal cortex and medulla (brain stem). 2. Explain what happens to neurons during aerobic exercise. 3. Tell others how the brain benefits from being fit and exercising.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

23D Students who meet the standard can describe and explain the structures and functions of the brain and how they are impacted by different types of physical activity and levels of fitness.

Stage E	Stage F	Stage G
1. Given a picture of the brain, identify the cerebrum, prefrontal cortex, and medulla (brain stem) and give the general function of each. 2. Explain how skills/movements affect the brain. 3. Draw and label a picture of axons, dendrites and synapses and explain electrical impulse communication.	1. Understand how level of fitness affects the brain. 2. Describe how aerobic exercise 'helps build' a strong brain. 3. Draw a picture or mind-map showing how communication happens between parts of the brain and the body during activity.	1. Communicate how level of fitness relates to brain function. 2. Define the terms 'neuroplasticity' and 'neurogenesis'. 3. Identify chemicals that are released in greater quantity during moderate to vigorous activity. 4. Use a visual to explain the importance of exercise and fitness on the brain (e.g. PSA, poster).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

23D Students who meet the standard can describe and explain the structures and functions of the brain and how they are impacted by different types of physical activity and levels of fitness.

Stage H	Stage I	Stage J
1. Describe how 'complicated' physical activities and complex movements improve concentration, focus and attention. 2. Analyze graphs showing data on levels of fitness and standardized test scores. 3. Describe a 'runner's high' and what happens in the brain to make it occur.	1. Explain why sustained moderate to vigorous physical activities can reduce symptoms of depression and anxiety. 2. Communicate to others the importance and function of brain-derived neurotrophic factor (BDNF) and serotonin and other neurotransmitters on the brain.	1. Examine, analyze, and summarize articles relating to physical activity and its effects on the nervous system. 2. Identify chemicals in the brain that are released in greater quantity during moderate to vigorous activity and explain their effects.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

24A Students who meet the standard can demonstrate procedures for communicating in positive ways, resolving differences, and preventing conflict.

Stage A	Stage B	Stage C	Stage D
1. Recall safety rules at home, at school, and in the community. 2. Recognize when to ask an adult for help. 3. Recognize basic emotions. 4. Name the components of good listening skills. 5. Identify good communication skills. 6. Identify good manners. 7. List behaviors at home, at school, and in the community that show respect toward others. 8. Discuss good and bad behaviors. 9. Define the word 'choice'.	1. Demonstrate safety rules at home, at school, and in the community. 2. Recognize caring adults who are significant in one's life. 3. Practice asking an adult for help. 4. Give examples of how one shows basic emotions. 5. Identify situations or behaviors that elicit different types of emotional responses. 6. Explain how using good listening skills can help avoid conflict. 7. Practice good communication techniques. 8. Define the word 'conflict'. 9. Demonstrate good manners. 10. Explain how choices affect personal behavior. 11. Tell how to make good choices. 12. Classify behaviors at home, at school, and in the community as being good or bad. 13. Define the word 'bullying'.	1. Name positive and negative components of a healthy relationship. 2. Describe how emotions affect choices and behavior. 3. Recognize that people have different emotional responses to situations. 4. Demonstrate the ability to make good choices. 5. Identify causes of conflict. 6. List types of nonverbal communication (e.g., eyes, facial expressions, posture). 7. Discuss rules for communicating in a group situation. 8. Apply good communication skills to avoid conflict. 9. Predict the consequences of behavior choices. 10. Compare and contrast possible consequences of behavior at home, at school, and in the community. 11. Identify motives for bullying.	1. Compare and contrast healthy and unhealthy relationships. 2. Examine emotional responses in different situations. 3. Identify consequences of conflict. 4. Describe the procedure in reporting unsafe behaviors. 5. Describe the procedures in reporting safety hazards. 6. Demonstrate the ability to communicate in a group situation. 7. Identify behaviors that reflect cooperation. 8. Describe the effects of negative or unsafe behaviors on others. 9. Tell how a person avoids conflict in a nonviolent way.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

24A Students who meet the standard can demonstrate procedures for communicating in positive ways, resolving differences, and preventing conflict.

Stage E	Stage F	Stage G
1. Explain how to build and maintain healthy relationships. 2. Identify common causes of conflict among peers and parents. 3. Describe negotiating, mediation, and consensus building skills. 4. Simulate ways to settle disagreements among peers and parents. 5. Predict your emotional responses in different situations. 6. Analyze possible consequences of conflict. 7. Apply positive communication skills to avoid conflict. 8. Simulate situations where bullying occurs. 9. Discuss consequences of bullying. 10. Relate how positive and negative communication affects others. 11. Identify acceptable methods of asserting yourself in peer group situations. 12. Express acceptable methods of asserting yourself in peer group situations. 13. Describe and give examples of how media influences choices and behavior.	1. Model good relationship skills. 2. Determine consequences of conflict among peers and parents. 3. Use negotiation, mediation, and conflict resolution skills. 4. Examine how negative/ unsafe behavior affects others in the school environment. 5. Demonstrate ways that emotions are communicated. 6. Give examples of positive communication. 7. Role-play situations where positive communication skills are used to avoid conflict. 8. Appraise communication skills in relation to peer behavior. 9. Cite examples of how violence is portrayed by the media. 10. Define methods for addressing interpersonal differences in a positive manner.	1. Predict the consequences of bullying. 2. Demonstrate how peers can help one another avoid and cope with potentially dangerous situations. 3. Decide what actions to take when bullying occurs. 4. Identify passive, aggressive, passive-aggressive, and assertive forms of communication. 5. Demonstrate body language and actions that reflect passive, assertive, aggressive, and passive-aggressive forms of communication
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

24A Students who meet the standard can demonstrate procedures for communicating in positive ways, resolving differences, and preventing conflict.

Stage H	Stage I	Stage J
1. Explain how positive communication can help build and maintain a healthy relationship. 2. Demonstrate conflict mediation and conflict resolution skills. 3. Recommend ways to promote a safe school environment. 4. Hypothesize how emotions could be communicated in different situations (e.g., winning the lottery, death, divorce). 5. Explain how positive communication helps to build and maintain relationships at school, at home, and in the workplace. 6. Examine possible causes of violence. 7. Apply acceptable methods of asserting yourself in peer group situations. 8. Compare and contrast methods for addressing interpersonal differences (e.g., avoidance, confrontation, compromise).	1. Practice negotiation, mediation, and conflict resolution skills. 2. Describe the effect of conflict and violence upon the health of the individual. 3. Describe the effect of conflict and violence upon the health of a family. 4. Describe the effect of conflict and violence upon the health of the community and school. 5. Discuss strategies for maintaining a safe school environment. 6. Advocate ways to promote a safe school environment. 7. Predict how emotions may be communicated in different situations. 8. Analyze good communication skills in relationships. 9. Analyze causes and effects of violence. 10. Critique the media's influence on behavior. 11. Identify positive methods for addressing interpersonal differences.	1. Analyze the impact of conflict and violence on your community (e.g., crime rates, economic losses). 2. Compare the effect of conflict and violence upon the health of an individual, family, and community. 3. Advocate ways to promote a safe school environment. 4. Express acceptable methods of asserting yourself in peer group situations. 5. Discuss how emotions may be communicated in different situations. 6. Critique communication skills. 7. Theorize about the possible causes and effects of violence. 8. Assess the media's influence on behavior. 9. Simulate positive methods for addressing interpersonal differences.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

24B Students who meet the standard can apply decision-making skills related to the promotion and protection of individual, family, and community health.

Stage A	Stage B	Stage C	Stage D
1. Observe how to correctly brush teeth. 2. Remember to wash hands at appropriate times. 3. List good personal hygiene practices. 4. Locate safety hazards at home or at school that affect health. 5. Define the word 'choice'. 6. Give examples of good and poor health choices. 7. Discuss consequences for poor health choices.	1. Explain how brushing and flossing teeth prevents tooth decay. 2. Demonstrate how to wash hands correctly. 3. Demonstrate basic cleanliness. 4. Change unsafe conditions (that affect health) to safe conditions at home or at school. 5. Recall choices that affect health on a daily basis. 6. Predict consequences for good and poor health choices.	1. Recall how brushing and flossing teeth prevents tooth decay. 2. Practice brushing teeth with proper technique. 3. Explain how basic cleanliness protects your health. 4. Explain how unsafe choices negatively affect health. 5. Explore ways to make appropriate choices. 6. Explain consequences for poor health.	1. Describe how basic cleanliness protects your health. 2. Recommend safe choices to positively affect health. 3. Conclude that good choices make a difference to your health and the health of others. 4. List possible positive and negative consequences of health-related choices.
Grade K-1 (A-B)	Grade 2 (A-B-C)	Grade 3 (B-C-D)	Grade 4 (C-D-E) Grade 5 (D-E-F)

Physical Development & Health Performance Descriptors

24B Students who meet the standard can apply decision-making skills related to the promotion and protection of individual, family, and community health.

Stage E	Stage F	Stage G
1. List ways cleanliness affects personal hygiene/health. 2. Describe key components of a decision-making process. 3. Give examples where and when a decision-making process can be used. 4. Differentiate between rights and responsibilities. 5. Identify options available to solve a problem or make a decision. 6. Analyze consequences for poor health choices. 7. Select a health problem and give examples of choices and consequences.	1. Discover how personal hygiene affects the process of an individual going through puberty. 2. Use the decision-making process to assess and solve an individual health problem. 3. Discuss how individuals can control their responses to other people's choices. 4. Compare and contrast consequences for good and bad health choices.	1. Discuss how emotional and social changes that occur during puberty affect decision-making. 2. Apply the decision-making model to solve a health problem.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

24B Students who meet the standard can apply decision-making skills related to the promotion and protection of individual, family, and community health.

Stage H	Stage I	Stage J
1. List health-related problems that affect adolescents. 2. Explain how choices one makes now can affect one's health in the future. 3. Formulate a plan to solve a health-related problem. 4. Identify barriers that can affect the decision making process.	1. Explain how adolescent health problems can affect others. 2. Explain the value of identifying options to solve a health-related problem. 3. Analyze the options to solve a health-related problem. 4. Determine which option best solves the health-related problem. 5. Analyze option choices and determine the impact each could have on successfully solving a health-related problem or making a health-related decision.	1. Give examples of how community actions affect health (e.g. laws pertaining to seat belts, helmets, non-smoking areas). 2. Identify community actions that may impact your health. 3. Explain the immediate and long-term impacts of individual decisions concerning health issues.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

24C Students who meet the standard can demonstrate skills essential to enhancing health and avoiding dangerous situations.

Stage A	Stage B	Stage C	Stage D
1. Discuss who strangers are and why one should be cautious around them. 2. Define 'good touch' and 'bad touch'. 3. Describe 'uncomfortable situations' as they pertain to strangers. 4. Discuss ways to behave around strangers. 5. Recite your name, address, and phone number. 6. Practice using emergency numbers in your community, including 911 if it is available. 7. Explain the role of fire fighters and police officers.	1. Identify uncomfortable situations. 2. Identify dangerous situations. 3. Write your name, address, and phone number. 4. Memorize emergency and medical phone numbers. 5. Know appropriate authority figures to contact in a dangerous or uncomfortable situation.	1. Discuss how one might feel when experiencing 'good touches' and 'bad touches'. 2. Define and recite 'refusal skills'. 3. Describe a situation when you would use a refusal skill. 4. Describe a situation when you would need assistance. 5. Discover the functions of emergency medical services (911).	1. Practice what to do if someone touches you inappropriately. 2. Practice how to tell a trusted adult when you feel uncomfortable or threatened. 3. Identify when you may need emergency medical assistance.
Grade K-1 (A-B) Grade 2 (A-B-C) Grade 3 (B-C-D) Grade 4 (C-D-E) Grade 5 (D-E-F)			

Physical Development & Health Performance Descriptors

24C Students who meet the standard can demonstrate skills essential to enhancing health and avoiding dangerous situations.

Stage E	Stage F	Stage G
1. Recognize situations that can cause children to feel uncomfortable. 2. Identify places to avoid because of potential danger. 3. Identify safe places and activities. 4. Identify characteristics of peer pressure. 5. Practice using refusal skills.	1. Identify ways to seek assistance when uncomfortable. 2. Establish a plan of action for avoiding dangerous situations. 3. Demonstrate refusal skills within the context of dangerous situations (e.g., drugs, alcohol, tobacco, inappropriate touches). 4. Discuss peer pressure in terms of needing to use refusal skills. 5. Identify the signs and behaviors related to dating violence.	1. Find school and community health-related resources available for assistance when in need. 2. Analyze the possible outcomes of being in dangerous situations (e.g., riding without a helmet, riding in a car with someone who is intoxicated) and suggest different options that could have been chosen. 3. Apply refusal skills to potentially avoid harmful situations (e.g., substance use, gangs, peer pressure).
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Physical Development & Health Performance Descriptors

24C Students who meet the standard can demonstrate skills essential to enhancing health and avoiding dangerous situations

Stage H	Stage I	Stage J
1. Discover the services available from school or community health-related resource agencies. 2. Predict the outcomes of being in dangerous situations. 3. Employ refusal skills and negotiation skills to avoid becoming involved in potentially harmful situations. 4. Discuss long- and short-term goal setting and the importance of each. 5. Describe the components of a well-written goal (is specific, is measurable, has an action plan, is realistic, has a timeframe).	1. Identify short-term personal life goals. 2. Identify long-term personal life goals. 3. Monitor achievement and revise short-term personal life goals. 4. Identify personal health goals (i.e., avoiding substances, dating limits, nutrition, and fitness). 5. Use decision-making skills to determine personal health goals (e.g., determining whether or not to smoke). 6. Identify barriers that could limit achievement of personal health goals.	1. Monitor achievement and revise short-term personal goals. 2. Monitor achievement and revise long-term personal goals. 3. Predict barriers to achieving short and long-term personal goals. 4. Design a plan to achieve personal health goals. 5. Formulate a plan to overcome barriers that could limit achievement of personal health goals.
Grade 6 (E-F-G) Grade 7 (F-G-H) Grade 8 (G-H-I) Grade 9-10 (H-I-J) Grade 11-12 (I-J)		

Enhance P.E. Task Force

Illinois State Board of Education
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State Superintendent of Education

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Research Summary:

Exploring the Link between Physical Activity, Fitness and Cognitive Function

Prepared for the Illinois Enhance Physical Education Task Force
March 2013

This research review describes how cognitive functioning and academic achievement are associated with physical activity and fitness level. It was prepared by the Illinois Public Health Institute (IPHI) to inform the work of the Illinois Enhance Physical Education (PE) Task Force, which is charged with revising the state learning standards for physical development and health based on neuroscience research. This document organizes the neuroscience research by the relevant Illinois learning standards on Movement Skills (Goal 19) and Physical Fitness (Goal 20). The review includes discussion of the residual effects of acute exercise on cognition, which suggests that sequencing physical activity before difficult learning tasks may be beneficial. In preparing this summary, IPHI received input and guidance from subject matter experts including Darla M. Castelli, Ph.D., who has extensively reviewed the literature on this topic and generously shared many references, as well as neuroscientist Charles H. Hillman, Ph.D., and author of *Spark* John J. Ratey, M.D.

There is substantial evidence of a relationship between physical activity, fitness and improved cognitive and executive functioning and executive control. Executive functioning refers to the cognitive processes necessary for goal-directed cognition and behavior which develop across childhood and adolescence (Best, 2010). Executive control refers to a division of goal-directed, self-regulatory processes involved in the selection, scheduling, and coordination of computational processes underlying perception, memory, and action. Specific tasks include scheduling, planning, working memory, multi-tasking and dealing with ambiguity (Hillman et al., 2008), as well as working memory, response inhibition, mental flexibility (Hillman et al., 2009).

ILLINOIS STATE GOAL 19: Movement Skills - Acquire movement skills and understand concepts needed to engage in health-enhancing physical activity.

Research supports an emphasis on aerobic exercise and motor skills, including motor activities that are bimodal and complex, to facilitate enhanced cognitive and executive functions and executive control. This neuroscience research has been corroborated by multiple studies that found positive associations between physical activity and academic performance in school-age children. Aerobic exercise is physical activity that requires increased heartbeat and harder breathing.

- Moderate-intensity aerobic activity: heart rate is raised, break a sweat. (e.g., fast walking, playing doubles tennis)
- Vigorous-intensity aerobic activity: even higher heart rate; break a sweat, hard to speak without pausing for a breath. (e.g., jogging, running, singles tennis, basketball, soccer) (CDC, 2011).

Physical Activity and Cognitive Function

As noted by the Centers for Disease Control and Prevention (CDC), research has shown that physical activity can affect the physiology of the brain by increasing cerebral capillary growth, blood flow, oxygenation, production of neurotrophins, growth of nerve cells in the hippocampus (center of learning and memory), neurotransmitter levels, development of nerve connections, density of neural network, and brain tissue volume. These changes may be associated with improved cognitive functions including attention, information processing, storage, and retrieval, enhanced coping, enhanced positive affect, reduced sensations of cravings and pain (Trudeau et al. 2008, Rosenbaum et al, 2001, as cited by CDC 2011).

Best (2010) explains that cognitive function, and specifically executive functioning, is enhanced through aerobic physical activity. To date, most studies examining these topics have analyzed the impact of acute exercise bouts because of cost and participation benefits. In a review of eight studies (two chronic exercise studies and six acute exercise studies), he finds that chronic and acute aerobic exercises affect cognition differently and that each component of cognitive functioning can be impacted uniquely depending on where an individual is developmentally. For instance, in one study of chronic exercise, running programs that became more physiologically demanding over time were found to enhance mental flexibility and divergent thinking[1] associated with executive functioning in children in 4th-8th grade (Tuckman and Hinkle, 1986; Hinkle et al., 1993; as cited by Best, 2010).

[1] Divergent thinking includes thought processes used to generate creative ideas by exploring many possible solutions.

Children in acute exercise studies were found to have improved concentration, response accuracy, reading comprehension, task accuracy and task completion.

Another such study by Hillman et al. (2009) found that acute bouts [20 minutes of walking at 60% of max heart rate (HR)] of exercise are associated with larger amplitude and shorter latency levels of P3 (an event-related potential component elicited in the process of decision-making), which improves cognitive processes central to problem-solving and goal-oriented action, including response speed and accuracy. Specifically, acute, moderately-intense exercise, like walking, has a positive effect on inhibition (a process of the prefrontal, temporal, and parietal cortices) and ability to focus. As stated by Hillman, the "ability to inhibit attention to task irrelevant or distracting stimuli is central to the ability to sustain attention and allow control over one's actions" (p. 1045). These data suggest that single bouts of exercise affect specific underlying processes that support cognitive health and may support effective functioning across the lifespan. Similarly, Ellemberg & St. Louis Deschênes (2010) demonstrated that boys (7-10 years old) who participated in 30 minutes of aerobic exercise at moderate intensities showed significant improvement in cognitive function, as demonstrated by simple reaction response time (tapping low level sensori-motor functions associated with primary visual and motor cortices) and choice response time tasks (cognitive task involving decision making processes that tap executive functioning), compared to those who watched TV.

Further, limited research suggests there may be cognitive benefits to participation in cognitively-engaging exercises. For instance, Budde et al. (2008) found acute 10-minute bouts of complex coordination exercise (bimanually coordinative) with moderate aerobic intensity require more executive functioning, which enhanced prefrontal neural functioning in adolescents aged 13-16. Specific results revealed better task accuracy and completion of task time when compared to 10-minute bouts of repetitive motor movements, like running/treadmill, in adolescents. Researchers controlled for heart rate to isolate the impact of the complex coordination activity.

Physical activity continues to have positive cognitive benefits over a lifetime. Findings from Ratey and Loehr (2011) show how physical activity positively impacts cognition throughout adulthood. This conclusion suggests that learning the basic skills necessary to engage in physical activity at a young age will be beneficial for future cognitive functioning.

Building on the significant and compelling body of research demonstrating a link between physical activity and cognitive functioning in youth, research on the brain neurochemistry of mice suggests that there may be additional cognitive benefits that have not yet been observed in youth. Such studies show that light to moderate physical activity lead to increased brain-derived neurotropic factor (BDNF) levels in the brain due to stimulation of the hippocampus, a part of the prefrontal cortex that houses executive control functions (Berg, 2010). Although this has yet to be demonstrated in children, it has been shown that higher-fit children show greater bilateral hippocampal volumes and superior relational memory task performance compared to lower-fit children, leading to enhanced memory performance (Chaddock, et al., 2010b) and that childhood aerobic fitness is associated with

less behavioral interferences on a selective attention paradigm tool, greater basal ganglia volume and superior task performance, and greater dorsal striatal volumes, leading to enhanced cognitive control (Chaddock et al., 2010a). Additional physical activity is also beneficial.

Researchers have also found that the "dose" of physical activity influences the effect on cognitive function. The previously mentioned study by Davis et al. (2007) also demonstrated that higher doses of physical activity (40 minutes) was associated with significantly better cognitive performance than lower doses (20 minutes), as measured by their standard scores for Planning (a test of executive functioning).

Physical Activity and Academic Performance

There is a growing body of evidence that physical activity is associated with improved academic performance. Aerobic training in the form of group games requiring more complex motor activities (e.g., running games, modified basketball, soccer) increased activity in the prefrontal cortex and improved performance on tasks requiring executive functioning as well as having a marginal positive effect on mathematics achievement (Davis et al. 2007). Another study demonstrated that a substantial dose of regular, vigorous exercise for overweight children (HR>150 bpm) can positively affect executive functioning scores and math achievement (Davis et al. 2011). In a longitudinal study of K-5 students, girls enrolled in higher amounts of PE (70-300 min/week) were observed to have a small but significant academic benefit in reading and mathematics achievement, compared with girls enrolled in less PE (0-35 min/week); however, there was no significant finding among boys in the study (Carlson, et al. 2008).

Physical activity throughout the school day has also been shown to have positive benefits on academic achievement. A study by Donnelly et al. (2009) demonstrates the effectiveness of Physical Activity Across Classrooms (PAAC) on BMI and academic achievement over a three year longitudinal study. PAAC promoted 90 min per week of MVPA delivered by classroom teachers. Results include increased academic achievement, smaller increases in BMI, and increased energy expenditure in the students where ≥75 minutes of PAAC per week was delivered compared to <75 min. Further, students in the PAAC program were shown to spend more time in and out of school participating in MVPA. Increased activity on the weekends is thought to be due to a change in attitude fostered by the PAAC program, but is not definite. While some research suggests a positive association between physical activity and academic performance, it should be noted that not all studies have found statistically significant associations; for a more comprehensive review please reference CDC's publication: The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance (CDC, 2010).

Residual Effects on Cognition: Time course effect of acute aerobic exercise

Research suggests that due to the residual effects of acute aerobic physical activity on improved executive functioning, physical activity should be scheduled in advance of other academic courses such as reading and mathematics. A study by Joyce et al. (2009) found that the beneficial effects of acute steady-state moderate intensity exercise on cognitive performance can be maintained 30 minutes post exercise and can last for up to 52 minutes after exercise cessation in 13-14 year old students. The findings suggest the 30 minutes of exercise performed at moderate intensity (40% of heart rates close to 130 BMP) will yield such results. Increases in cognitive performance are due to response inhibition improvement; as described above, acute aerobic exercise affects inhibition, which is associated with cognitive processes central to problem solving and goal-oriented behavior.

Studies have found shorter P3 latency and larger P3 amplitude following acute exercise on tasks requiring cognitive control during inhibitory tasks. The findings were observed 25 minutes after the cessation of exercise (Hillman et al., 2009), and 48 minutes after exercise (Hillman et al., 2003). Further, Hillman et al. (2009) and Pontifex et al., (in press) both show improvements in academic achievement during the 1 hour (approximately) period following the cessation of the acute bouts of exercise.

This recent evidence lays a strong foundation for the assertion by Kubesch et al. (2009), whose study showed that a single 30 minute PE program led to an improvement in the ability focus, that physical education should be scheduled "before important subjects like mathematics and not at the end of the school day" (p. 240).

Gallotta, et al. (2012) found that different types of exertion contributed to students' (ages 8-11) immediate attentional performances. Generally, children showed higher working speed and concentration scores after each of three types of controlled lessons (traditional physical education lesson, corresponding to physical exertion; coordinative physical education lesson, corresponding to a mixed cognitive and physical exertion; and school curricular lesson, corresponding to cognitive exertion). The authors propose that children showed higher attention levels at the end of physical education lessons versus the beginning due to the arousal hypothesis [see Budde, 2008], which relates attention to increases in cerebral blood volume and excited cerebellum and frontal cortex.

Raviv (1990) found that levels of concentration and attention were lower later in the school day because of the efforts required by the learning process.

<u>ILLINOIS STATE GOAL 20: Physical Fitness</u> - Achieve and maintain a health-enhancing level of physical fitness based upon continual self-assessment

Cardiorespiratory fitness is a measure of how well the body is able to transport oxygen to its muscles during prolonged exercise, and of how well the muscles are able to absorb and use the oxygen. It is measured through $VO2_{max}$ testing (maximum oxygen consumption). Research demonstrates a correlation between physical fitness and improved cognitive functioning. This neuroscience research has been further corroborated by multiple studies that found positive associations between fitness and academic performance in school-age children.

Fitness and Cognitive Function

Cardiorespiratory fitness appears to relate to the ability to successfully engage executive control strategies to optimize task performance across the lifespan. Pontifex et al. (2011) found that higher-fit preadolescent children ($VO2_{max}$ above the 70th percentile) demonstrated higher P3 amplitude and shorter latency compared to lower-fit preadolescent children ($VO2_{max}$ below the 30th percentile). This suggests that "lower levels of cardiorespiratory fitness relate to deficits in the flexible allocation of cognitive control to meet task demands" (p. 1341), indicating that lower-fit children have general impairments when performing tasks requiring more cognitive control.

Further, Hillman et al. (2005) also found that high-fit children had greater P3 amplitude and shorter P3 latency compared with low-fit children, as well as high- and low-fit adults. High-fit children had faster reaction time than low-fit children suggesting that fitness was positively associated with neuroelectric indices of attention and working memory, and response speed in children. Hillman cites additional studies that link enhanced math and reading abilities to the same brain regions and concludes that similarities exist in the neural networks that underlie both cognitive functioning and academic achievement (p. 1045). In a randomized control study, Kamijo et al (2011) found that a physical activity afterschool program designed to increase cardiorespiratory fitness of preadolescent children lead to improved Sternberg task performance, which tests working memory demands. These results further exemplify that cardiorespiratory fitness is positively associated with improvements in executive control of working memory.

Lastly, a consistent relationship occurs between cardiorespiratory fitness and cognitive performance. Aberg, et al. (2009) found significantly higher intelligence test scores in male subjects, whose cardiovascular fitness improved between 15 and 18 years old, indicating that changes in cardiovascular fitness are associated with improved cognitive performance in adolescence, even though causal relationship could not be established.

Fitness and Academic Performance

Research on the association between fitness and academic achievement seems to corroborate the mechanisms proposed by neuroscience research. Extensive research on the association between fitness and academic achievement conducted in China, Illinois, Massachusetts, California, and Texas shows a connection between increased levels of physical fitness, as measured by fitness tests such as the FITNESSGRAM®, and academic achievement (Chih & Chen, 2011; Castelli et al., 2007; Chomitz et al., 2009; London & Castrechini, 2011; Roberts et al., 2010; Van Dusen et al., 2011). For instance, Van Dusen, et al. (2011) found that all FITNESSGRAM® variables except body mass index (BMI) were positively associated with academic performance; measures of cardiovascular fitness were found to have the highest connection to cognition. Further, each additional unit of cardiovascular fitness across quintiles was associated with improved performance on a standardized test, specifically the Texas Assessment of Knowledge and Skills. Also using the FITNESSGRAM® test, preliminary results presented at the American College of Sport Medicine conference by Bass et al. (2010) suggest that students in the healthy fitness zone for cardiorespiratory fitness were six times more likely to meet or exceed the Illinois Standardized Achievement Test (ISAT) reading test requirements and over two and a half times more like to meet or exceed ISAT math test requirements than students who were not in the healthy fitness zone. In addition, Srikanth et al. (2010) found that when comparing the effect of social support, self-esteem and cardiorespiratory fitness on middle school students' reading and math tests, cardiorespiratory fitness was the only factor correlated with higher scores.

A consistent relationship between fitness and academic achievement is also exemplified by Grissom's research (2005). His results indicate that a relationship exists between fitness and academic achievement, in that as one improved, so did the other. Results from a study by Cottrell et al. (2007) show that there is a significant relationship between children's cardiorespiratory risks such as fitness index and blood pressure, as well as weight, and their reading/language, arts, mathematics, and science test scores. These results suggest that there is value in implementing surveillance programs to evaluate weight risks, fitness, risk for diabetes, and/or high blood pressure.

Lastly, P.E. should be fun:

Much brain research suggests that cognitive input to the executive function networks is more likely when stress is low and lessons are stimulating and challenging, passing though the reticular activating system (a lower brain filter that focuses attention on changes perceived in the environment) (Willis, 2007). Willis specifies that pleasurable classroom activities release dopamine, a neurotransmitter that stimulates the memory, as well as promotes the release of acetylcholine, which increases attention.

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Illinois Enhance Physical Education Task Force
Action Plan

Adopted by the Committee to Promote Enhanced PE
April 2013

The purpose of this Action Plan is to support the strategic goals and objectives of the Enhance Physical Education (PE) Task Force, as set forth in Public Act 97-1102, by outlining specific actions that task force members can implement. The plan serves as a guide for communicating a set of core messages about the value of enhanced PE, and targeted messages about specific changes required to implement enhanced PE, to seven audiences: superintendents and district administrators, school boards, principals, PE teachers and adapted PE teachers, non-PE teachers, parents, and students. The plan includes a strategic goal, key objectives, core communications messages for all audiences, targeted asks by audience, as well as each audience's respective communication venues, channels, messengers, timeline, and the task force lead.

Table of Contents

Overarching Goal and Objectives

Goal:

All Illinois K-12 school students will participate in daily, high-quality physical education in order to promote academic achievement and realize the lifetime benefits of exercise and fitness.

Objectives:

Promote and recommend enhanced physical education this State, including and health curriculum in elementary and secondary schools in programs that can be integrated with a broader wellness strategy

- Educate and promote leadership on enhanced physical education among school district and school officials
- Develop and utilizing metrics to assess the impact of enhanced physical education
- Promote training and professional development in enhanced physical education for teachers and other school and community stakeholders
- Identify and seek local, State, and national resources to support enhanced physical education

Key Communication Messages

The core communication message identifies the fundamental information that all target audiences must understand for them to be motivated to take action. When bolstered by supportive research and evidence, this message provides a compelling argument for improving the quality of PE and amount of physical activity opportunities in Illinois schools.

Core message: Enhancing PE and adding more physical activity during the school day improve academic achievement, student behavior and conduct, and health.

Supportive Messaging:

- Enhancing PE entails changing policies, practices, and curricula to ensure students spend more time in moderate to vigorous physical activity (MVPA).
- Schools benefit from a return on investment (ROI) from the allocation of dollars and time for PE and physical activity during the school day.
- Quality PE also includes integration of other academic topics into PE, scheduling PE before challenging classes to maximize its impact on academic achievement, and adopting collaborative learning approaches.

Audience: Superintendents and District Officials

Primary Asks:

1) Learn about the connection between PE/PA and academic achievement and the Return on Investment (ROI)
2) Utilize metrics to assess impact of Enhanced PE and its connection to academics and behavior
3) Measure how the daily PE mandate is being implemented and encourage daily, quality PE for every student.
4) Educate your school board about the importance of enhanced PE and PA.
5) Encourage more rigorous physical activity during existing PE and other movement time (e.g., recess)

Secondary Asks:

1) Provide leadership in communicating the value of PE and proper nutrition to parents and community
2) Make changes to the school day to allow for daily PE and physical activity.
3) Ask leaders to be champions and share information with colleagues
4) Facilitate integration of academic subjects into PE, and PE into academic subjects
5) Become a leader on including daily, quality PE and MVPA in wellness policy

Include, if possible:

1) Create demand for a central location for professional development for teachers & other school staff

Key Venues	Channels	Asks	Messenger/Voice	Timeframe	Task Force Lead
Superintendents Conference (Panel Presentation)	PPT template on core messaging & TF recommendations	All	Superintendents and other school officials	Submission deadline: May 28 (Submitted); Presentation: October 9 – 11, 2013	Sophie, in coordination with IASA
Triple I Conference	PPT template on core messaging & TF recs	All	Superintendents and other school officials	Proposal submitted; Presentation is in November 22-24, 2013	Sophie, Crotty, Nowak
IASBO Conference	PPT template on core messaging & TF recs	All	School district officials	Plan to submit a proposal for the spring 2014 conference	Crotty
State Superintendent's Weekly Message	Letter from Dr. Koch	Primary asks	Dr. Chris Koch	Disseminate by May 3, 2013	ISBE Support Staff
IASA Newsletters	Fact sheet; Catalogue of links & resources; Template letter to request a school board meeting; Article by Sophie	All	Message from IASA ED & Jean Sophie [Inform them that school boards, PTAs, etc are receiving this information as well]	IASA will start with "appetizers" in June and then roll-out more information in the new school year (August).	Sophie
Online web trainings on IASA and ISBE websites	PPT on core messaging	All	School administrator & an expert on PE/PA link with learning, behavior, health	Conduct webinars in June/July and Sept/Oct	Sophie, Crotty, ISBE support staff
IASA and IASBO websites	- Research & resources	All	EPE Task Force	IASA website – June 2013 IASBO - April 2013 (complete)	Sophie, Crotty
IASBO Peer to Peer network site	P2P Posts by members	All	District or school business official	Post and initiate discussion by May 31	Crotty

Audience: School Boards

Primary Asks:

1) Learn more about correlation between enhanced PE and academic achievement and the Return on Investment (ROI)
2) Encourage more rigorous physical activity during existing PE and other movement time (e.g., recess)
3) Encourage daily PE time for every student.

Secondary Asks:

1) Allocate resources: staff development, equipment, curricula, and, if possible, staff
2) Update mission, vision and guiding principles and/or Wellness Policy
3) Provide leadership in communicating the value of PE to parents and community

Include, if possible:

1) Request changes to the school day to allow for PE and physical activity

Key Venues	Channels	Asks	Messenger/Voice	Dissemination Timeline	Task Force Lead
Triple I Conference (Panel Presentation)	PPT on core messaging & TF recommendations	All	School Board reps and other school officials	Proposal submitted; Presentation is in November 22-24, 2013	Sophie, Crotty, Nowak
IASB website (update) http://www.iasb.com/healthy/	Updated resources & links	All	Link to another website that is actively updated	Posted online by June 30	Nowak
IASB emails (periodic)	Fact sheet	Primary	IASB rep on task force	[pending information re submission deadlines]	Nowak
IASB Magazine (every other month)	- Research, e.g., white paper & "The Learning Connection II"	All	Nowak will write letter that discusses the work of the task force.	[pending information re submission deadlines]	Nowak
School Board Training / Division meetings 2x per year	Continuing Education Training	All asks, new learning stds, and Comp. Foods	Subject Matter Experts/Trainers	Create draft talking points and propose potential presenters for IASB Division meetings in Fall 2013 and Spring 2014, for presentations during fall 2014 or Spring 2015. In the event individual IASB divisions do not elect to sponsor a presenter/program on EPE, work with division officers to distribute informational materials to attendees at these meetings.	Nowak
School Board Meetings	PPT template on core messages & presenter packet	Primary & Secondary Asks	Superintendent	Superintendent requests the PE be put on the agenda at a meeting during 2013-2014 school year	Bohren, Nowak, IDPH, IPHI, Healthy Schools Campaign, Amanda Minor & Mike Isaacson, Jean Sophie

Audience: Principals

Primary Asks:

1) Learn more about correlation between enhanced PE and academic achievement and the Return on Investment (ROI)
2) Encourage daily PE for every student.
3) Encourage more moderate to vigorous physical activity during existing PE and other time already allocated for movement (e.g., recess)

Secondary Asks:

1) Provide training and information for faculty on the benefits of enhanced PE and MVPA
2) Provide leadership in communicating the value of PE to parents and community
3) Ensure classroom teachers have the knowledge, tools, curricula & resources they need to integrate quality movement into the classroom

Include, if possible:

1) Attend trainings and become a leader on integrating enhanced PE with a broader wellness strategy
2) Facilitate integration of academic subjects into PE and PE into academic subjects by allowing for time to exchange ideas, cross-training, disseminating resources, etc.
3) Assess PE Teachers using an appropriate evaluation tool

Key Venues	Channels	Asks	Messenger/ Voice	Dissemination Timeline	Task Force Lead
Triple I Conference	PPT on core messaging & TF recommendations	Primary & Secondary Asks	Principals & other school officials	Proposal submitted Conference: November 22-24, 2013	Sophie, Crotty, Nowak, Truesdale
IPA emails (Short updates via weekly broadcast email)	Fact sheet; other brief blurbs that can link to other places for more information	Primary & Secondary Asks	IPA leadership	Disseminate by June 30, 2013	William Truesdale
IPA's Principals Professional Conference	PPT on core messaging & TF recommendations	Primary & Secondary Asks	Principals and Paul Zientarski	Proposal submitted 4/24/13 October 20-22, 2013	William Truesdale
Webinar, joint with IASA, IASBO, and IASB	Continuing Education Training (professional development units available)	All asks	Subject Matter Experts/ Trainers	Arrange outline and partners/ presenters by June 2013 Implement in Summer 2013	William Truesdale, IPHI, IASA, IASBO, IASA
IPA Podcast	Recorded discussion between IPA Exec Dir and a PE Expert (from Task Force)	Primary & Secondary Asks	Dr. Koch Jason Leahy	Script by July 30; Recorded by August 15 August 31, 2013: Release when new recommendations are submitted to GA	William Truesdale, ISBE, other task force member
IPA Connect Blog Post	Written blurb re TF and a principal's experience improving PE	Primary Asks	Principal that has improved PE	Written/posted by June 30	William Truesdale
IPA Resources	Catalogue of resources and links	Primary & Secondary Asks	IPA staff	Compiled by May 31 Posted online by June 30	William Truesdale, IPHI
Principals' annual welcome/ orientation for students	Talking points for principals	Info on the link between PE/PA and learning, health, behavior	Principals, with talking points coming from IPA	Drafted by May 31 Disseminated through IPA by beginning of school year	William Truesdale

Audience: PE Teachers, Adapted PE Teachers, and PE Program Coordinators

Primary Asks:

1) Apply principles of Enhanced PE to school curriculum and lessons
2) Attend workshops, conferences, institute days, webinars to become familiar with Enhanced PE
3) Advocate for Enhanced PE
4) Provide ideas, resources, modeling, materials and "scripts" to support more MVPA in PE and others classes
5) Encourage more MVPA during existing PE and other movement time (e.g., recess)

Secondary Asks:

1) Help principal and district office administrators lead the effort
2) Evaluate your current curriculum

Include, if possible:

1) Reach out to classroom teachers to integrate literacy, math, science, etc into PE classroom
2) Update classes to promote lifelong physical activity
3) Bridge the gap between home and PE classroom (e.g., give PA homework)

Key Venues	Channels	Asks	Messenger/ Voice	Timeframe	Task Force Lead
IAHPERD State Convention	PPT on core messaging & TF recommendations	All	PE teacher	Proposal submitted. Conference: November 21-22, 2013	Noel/Duncan
IAHPERD District conferences	PPT on core messaging & TF recommendations	All	PE teacher	?	Noel/Duncan
School district workshops	Train-the-Trainer model for Enhanced PE Manual for use during professional development time	All	Trainers	Develop curricula summer 2013; trainers trained fall 2013; school district workshops in winter/spring 2014	Noel/Duncan, ISBE support staff
Illinois Coalition for Adapted PE listserv/webpage	Fact sheet Research paper	Primary	Coalition lead	By June 30, 2013	Madrigal
"On the Move" Newsletter	Fact sheet Research paper	Primary & Secondary Asks	PE teacher	Periodic – at least one by June 30	Noel/Duncan
DuPage County PE Institute	PPT on core messaging & TF recommendations	Primary & Secondary Asks	PE teacher	Spring 2014	Noel/Duncan
Illinois Association for Curriculum Development (IL ASCD)	IAHPERD coordination with IL ASCD on training	Primary & Secondary Asks	PE teacher	Outreach begins in May 2013	Noel/Duncan

Audience: Non-PE Teachers

Primary Asks:

1) Learn about the benefits of physical activity and where/how to incorporate it into the classroom in order to improve attention, behavior, and learning.
2) Plan the day to allow brain-based physical activity breaks
3) Collaborate with your PE teachers to utilize existing physical activity in a better manner

Secondary Asks:

1) Attend training workshops and webinars that provide information about the benefits of exercise and brain breaks during the school day
2) Work with PE teachers to integrate academic lessons into PE

Key Venues	Channels	Asks	Messenger/ Voice	Dissemination Timeline	Task Force Lead
Unions (IFT, IEA)	Fact sheet White paper	Primary & Secondary	Union reps on TF	By June 30, 2013	Brunson, Fournier, Morrison, Pryor, Vogel
In-Service Trainings - Illinois Association for Supervision and Curriculum Development (IL ASCD)	Coordination with IL ASCD on training	Primary & Secondary	Non-PE teacher from TF	*Pending*	Brunson, Fournier, Morrison, Pryor, Vogel

Audience: Parents

Primary Asks:

1) Learn and understand the connection between PA/PE and academic outcome and hold a meeting on the topic; Invite your PE teacher to present.
2) Advocate for daily, quality PE for students taught by a certified Physical Education teacher
3) Become a role model; Communicate with your children and show by example the importance of physical activity at home
4) Encourage and support the school board & administration to adopt changes to promote children's health

Secondary Asks:

1) Become familiar with School Wellness Policy
2) Spread the word
3) Publicize on their websites and newsletters

Include, if possible:

1) Support with dollars and understanding

Key Venues	Channels	Asks	Messenger/ Voice	Timeframe	Task Force Lead
PTA web site	Fact sheet	Primary	IL PTA president	By May 30, 2013	Bohren
PTA Facebook	Fact sheet	Primary	IL PTA	By May 30, 2013	Bohren
PTA electronic newsletter	White paper Fact sheet	Primary & Secondary	IL PTA	Initial message (sent Jan 2013) Follow-up message:	Bohren
PTA convention (Panel presentation)	PPT on core messaging & TF recommendations	Primary & Secondary	Members of IL PTA, content expert (e.g., Paul Zientarski)	Occurs in the spring (April 19-21, 2013); plan for April 2014	Bohren
Parent Training Resource Centers	Training	All	Trainers	*pending*	Madrigal
PTA Packet	Fact sheet, White paper, Catalogue of resources and links; Guidelines for holding meetings on PE/PA	Primary & Secondary	IL PTA, PE Teachers	Delivered to PTAs in fall 2013	Bohren
PTA National Newsletter	TBD	Primary & Secondary	Request that CDC provide content	TBD	IPHI support staff and Bohren

Audience: Students

Primary Asks:
1) Participate
2) Learn about the connection between PE/PA and academic achievement

Secondary Asks:
1) Request that PE/PA not be taken away as punishment
2) Advocate for daily, quality PE taught by a certified teacher
3) Teach/encourage parents to support healthy, active lifestyle

Include, if possible:
1) Ask PE teachers about Enhanced PE
2) Look for student leaders to lead some of the sessions
3) Create urgency among teachers to provide better/more moderate to vigorous PA in class and in PE
4) Support with dollars and understanding

Key Venues	Channels	Asks	Messenger/ Voice	Timeframe	Task Force Lead
PE class	Awards for achieving PA goals	Primary	PE Teachers	During the school year	EPE Committee
School-based programs	E.g., NFL/Dairy Council - Michelle Obama & Let's Move; Walk Across Illinois; Students Taking Charge program Illinois Public Health Institute PE Manual; Healthy Schools Campaign programs; CLOCC	Primary	Teachers and program administrators/ coordinators	During the school year	Illinois Public Health Institute; Healthy Schools Campaign; CLOCC
Orientation Day for students	Presentation by Principal	Primary asks	Principals	Beginning of 2013 school year	William Truesdale (see above under "Principals")

Summary: Support Materials

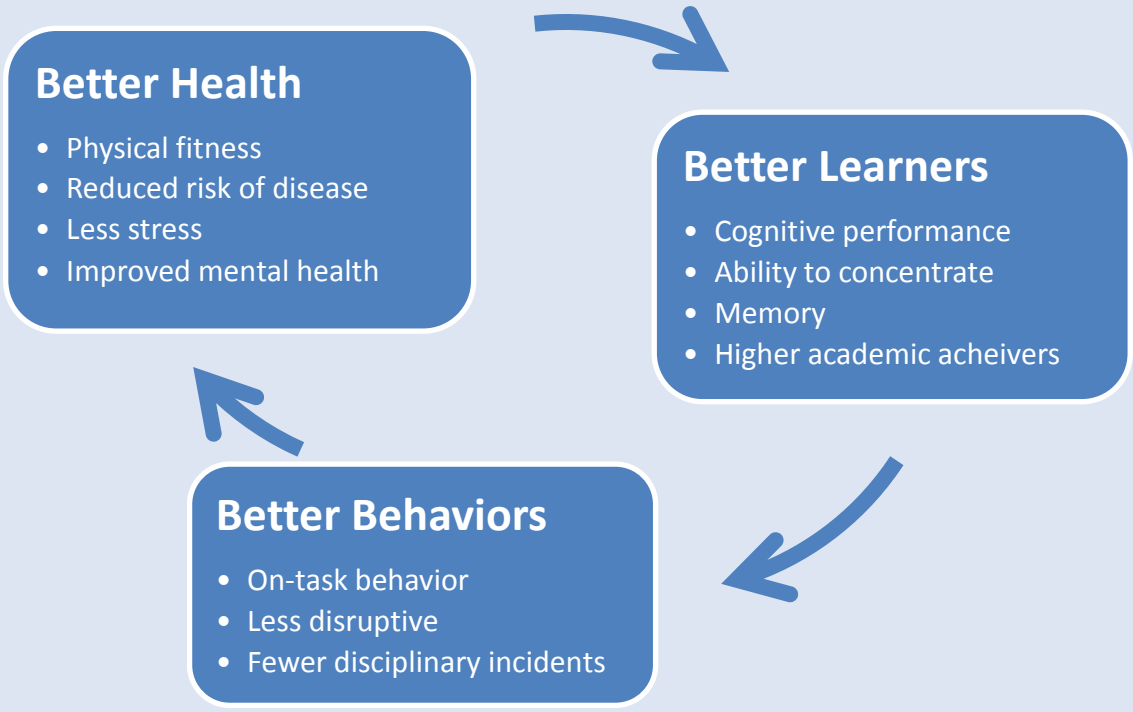
Outputs	Audience	Activities	Timeline	Person/Group Responsible
PPT template on core messaging ONLY & presenter packet	Superintendents & District Officials (at regional meetings) School Boards (presentation by superintendents)	Create template PPT presentation and presenter packet	By May 30, 2013	IPHI with TF input
		Disseminate through IASA	June and July 2013	Sophie
		Presentations made by superintendents and regional superintendents	August – December 2013	Sophie
Panel presentations on core messaging & TF recommendations	Superintendents & District Officials, School Boards, Principals	Abstract template written	By April 13 (April 15 is first hard deadline)	Lead TF members; IPHI will help prepare
		Finalize slate of potential speakers from task force and from among local school administrators, boards, principals	May 15, 2013	Lead TF members with assistance from all members
		Presentations prepared and delivered at various conferences	Oct-Nov 2013	Relevant TF members
Continuing Education Training - webinar (new learning standards & competitive foods)	School Boards, Principals	Request permission to offer training opportunity from relevant authority	May 15, 2013	Nowak, Truesdale
		Develop training outline/content	By October 2013 (after new standards are proposed)	IAHPERD, ISBE, IDPH, Healthy Schools Campaign, other TF members
		Identify professional development trainers on PE/PA and competitive foods	By November 2013	IAHPERD, ISBE, IDPH, Healthy Schools Campaign, other TF members
		PD delivered to principals & boards	Spring 2014 or Summer 2014 [after adoption of new learning standards]	Professional associations (IASB and IPA)
Catalogue of resources & links – general and audience-specific	Superintendents & District Officials, School Boards, Principals, PE & adapted PE teachers, non-PE teachers, parents	Compiled	By April 30, 2013	IPHI with input from TF
		Posted online at ISBE and various associations websites	By June 30, 2013	TF members
Fact Sheet	Superintendents & District Officials, School Boards, Principals, PE & adapted PE teachers, non-PE teachers	Draft approved by Task Force	May 15, 2013	IPHI with input from TF
		Disseminate	June and beyond	TF members
IPHI's Research	Superintendents & District	Created and approved by TF	March 30, 2013	IPHI

Summary	Officials, School Boards, Principals		(completed)	
		Disseminate	April and beyond	TF members
Superintendent's Weekly Message (Letter from Dr. Koch)	Superintendents & District Officials, Principals, School Boards	Drafted	By April 15, 2013	ISBE staff with input from TF
		Disseminate	Late April 2013	ISBE staff
Recorded discussion between IPA Exec Director and a TF member	Principals	Script completed	By July 30, 2013	Truesdale, ISBE, IPA
		Recorded	By August 15, 2013	Truesdale (IPA)
		Posted on IPA website	By August 31, 2013, when new recommendations are submitted to GA	IPA
Task Force Final Report	General Assembly and Governor	Draft in stages for review by task force	Review outline: June 14 Approve final: August 2	IPHI, Committee Chairs, Task Force Chairs
Professional Development – Train-the-Trainer	PE/Adapted PE Teachers Non-PE Teachers	Identify potential resources to support train-the-trainer and other professional development during 2013-2014 school year	By August 2013	ISBE staff

Enhancing Physical Education in Illinois: How Investing in P.E. Yields Higher Achievers

Enhancing P.E. and physical activity during the school day lead to better learners, better behavior in the classroom, and better student health. Enhancing P.E. entails changing policies, practices, and curricula so that students spend more time in moderate to vigorous physical activity (MVPA) during each class.[1] Schools will see a return on investment on the dollars and time dedicated to P.E. and physical activity.

Benefits of Enhancing P.E. and School-Based Physical Activity



How to Maximize the Benefits of P.E.

- Students spend at least 50% of P.E. class in MVPA by participating in small-sided games, reduced wait-time and time spent taking attendance or giving instruction, and other approaches that minimize inactivity
- Administrators schedule P.E. before challenging academic subjects to maximize the residual cognitive benefits of activity on learning and academic achievement
- Teachers emphasizes health-related fitness and achievement of each student's personal best, modifying instruction to accommodate varying levels of physical ability
- Teachers emphasize teamwork and cooperation
- Schools periodically evaluate P.E. curriculum and instruction against state and national standards
- P.E. includes a broader wellness approach focused on developing life-long skills for physical activity and nutrition

For more information on the fundamentals of Enhanced P.E., consult this basic fact sheet.

BETTER LEARNERS

What does the research say?

There is substantial evidence of a relationship between both physical activity and fitness and improved cognitive and executive functioning. These brain functions play a significant role in goal-directed behavior and the ability to concentrate. Improved executive functioning allows students to organize and prioritize tasks and information. [2, 3, 4] Regular physical activity, even short bouts, enhances various aspects of brain activity that affect academic performance, including learning, memory, concentration, and mood.[5]

How does it work?

A growing body of evidence suggests a relationship between moderate to vigorous physical activity and the structure and function of the student brain. Active children show greater attention, have faster cognitive processing speed, and perform better on standardized academic tests than children who are less active.[6]

Cardiorespiratory fitness, a measure of how well the body can transport oxygen to its muscles during exercise, is also related to optimizing task performance across one's lifespan as well as increasing academic achievement and test performance. Studies demonstrate that higher fit children display higher levels of cognitive control, better task performance, faster reaction times, enhanced working memory, and attention.[7,8]

Return on Investment:

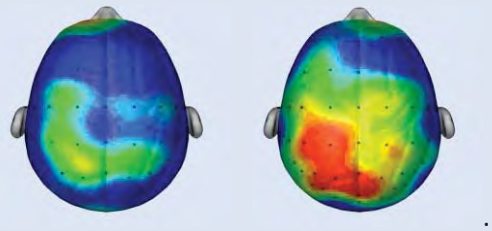
Fit students perform better academically

Studies have shown time and again that there is a positive association between fitness and academic achievement, as measured by standardized tests and improved grades. This relationship has been observed in China, Illinois, Massachusetts, California, and Texas. [9, 10, 11, 12, 13, 14] Higher fit children have been found to have enhanced math and reading abilities.[15]

Cognitive Effects of Exercise On Preadolescent Children

Average composite of 20 students' brains taking the same test after 20 minutes of:

Sitting Quietly Walking



Scan compliments of Dr. Charles Hillman University of Illinois

Preliminary results from a 2010 study suggest that students in the Fitnessgram® "Healthy Fitness Zone" (HFZ) for cardiorespiratory fitness were two to four times more likely to meet or exceed the Illinois Standardized Achievement Test (ISAT) reading and math test requirements than students who were not.[16] As fitness level increases, so does academic achievement.[17]

PE can improve performance in other academic classes

The residual cognitive benefits of exercise have been found to last from 30 minutes to about 1 hour. [18, 19, 20,] Physical education classes should be held before challenging academic subjects to take advantage of the residual effects of exercise on students' abilities to focus, elevated concentration and improved cognitive skills resulting in higher academic scores.[21] Research has found that longer doses (40 min) of exercise are more beneficial than shorter doses (20 min.).[22]

For more in-depth information about the neuroscience related to physical education, consult **'Summary of Neuroscience Research: Exploring the Link between Physical Activity and Cognitive Function'.**

It's like Miracle-Gro® for the Brain! - Dr. John Ratey

Brain-derived neurotrophic factor (BDNF) helps the brain grow, and can improve learning. Exercise has been proven to cause BDNF secretion in mice. Physical activity causes the human brain to produce:

Adrenaline - provides energy
Cortisol energy - memory
Noradrenaline - enhances focus
Serotonin - attention, mood
Dopamine - thinking, working memory
Glucose-energy - memory formation

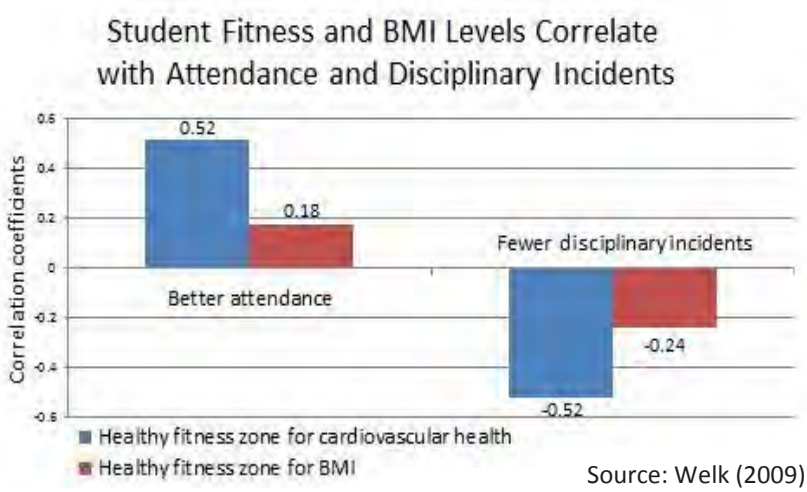
BETTER BEHAVIOR

What does the research say?

Physical education is related to better academic behaviors: Studies have found positive associations between P.E. and attention/concentration, self-concept, impulse control, perception of academic or intellectual competence, and other cognitive skills and attitudes.[23]

Simple in-class activities can boost performance Studies suggest that children who participate in short bouts of physical activity within the classroom have more on-task behavior, with the best improvement seen in students who are least on-task initially.[24]

Benefits for children with ADHD: When children with ADHD participated in physical activity, parents and teachers reported improved behavior scores, including social and attentional problems and less anxiety. [25]



Source: Welk (2009)

Return on Investment:

Fewer suspensions means more kids in class Researchers analyzed FITNESSGRAM® test results from more than 2.4 million Texas students in grades 3 to 12 during the 2007–08 school year and found higher physical fitness achievement was associated with better school attendance rates and fewer disciplinary incidents.[26]

BETTER HEALTH

What does the research say?

Physical inactivity may be one of biggest public health problems of the 21st century.[27] Being physically active and fit can reduce the risk of chronic diseases like type 2 diabetes, heart disease, and some cancers – even in the presence of higher body mass index (BMI). When compared with BMI, body composition (% body fat) and weight status, research shows that physical fitness has a stronger association with good health.[28]

Addressing the state's public health problem:

Nearly 1 in 3 Illinois children are either obese or overweight. The impact of enhancing P.E. will not only help reverse this trend, but also stands to positively impact children over the course their entire lives. Helping children become fitter and establish behavioral patterns that encourage lifelong fitness will help in the prevention of diseases such as obesity, hypertension, and cardiovascular disease.[29, 30]

Return on Investment: The Big Picture

Children sleep better: Poor sleeping patterns are linked to poor school performance and an increased risk of being overweight or obese. For every sedentary hour, a child needs 3 extra minutes to fall asleep. Children who are more physically active fall asleep an average 15 minutes sooner – and better - than their sedentary peers. [31]

The many benefits of exercise on mental health: Exercise has been shown to elevate mood, positively influence depression and anxiety, reduce psychosocial stress and enhance various aspects of self-esteem. [32]

Overall wellness for all: In addition to physical activity, a quality P.E. curriculum may also support good nutrition, which is essential to overall health and well-being. Establishing healthy nutritional habits early in life, reduces kids' risks of developing diabetes, stroke, cancers, and heart disease later in life.[33]

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Enhance P.E. Task Force

Illinois State Board of Education
Christopher A. Koch, EdD
State Superintendent of Education

Illinois Department of Public Health
LaMar Hasbrouck, MD, MPH
Director

Enhanced Physical Education Resource Guide

Prepared by the Illinois Public Health Institute

This document is a product of the Enhance P.E. Task Force. Illinois Public Act 97-1102 created the task force, which is charged with promoting and recommending enhanced P.E. programs that can be integrated with a broader wellness strategy and health curriculum in K-12 schools in Illinois.

Enhanced Physical Education Resource Guide

Enhanced physical education (P.E.), defined as a curriculum change that leads to students spending more time in moderate to vigorous physical activity (MVPA) in P.E. class, is recommended in the Center for Disease Control and Prevention's Guide to Community Preventive Services for increasing physical activity in children. Enhanced P.E. not only correlates directly to the life long health and well-being of students, it has cognitive benefits, too, making students more receptive to learning. There is a significant body of research showing that children who are more physically active perform better in class and on standardized tests. Improving opportunities for physical activity is an imperative for improving our children's academic achievement and their health.

Illinois has long been a leader in valuing children's health. Although many states require P.E., Illinois was the first state in the nation to require daily P.E. for all students. Many schools have designed or adopted model programs to meet this requirement and create opportunities for physical activity. Unfortunately, according to national research, the time children are actually physically active in P.E. class is consistently low. In a typical 30-minute (K-6 grade) class, students engage in only 11 minutes of physical activity. Thus, a traditional P.E. class contributes very little to ensuring students are meeting the 60 minutes per day of exercise recommended by the US Department of Health and Human Services in the Physical Activity Guidelines for Americans.

The Enhanced Physical Education Resource Guide is a product of the Illinois Enhance P.E. Task Force. Illinois Public Act 97-1102 created this task force, which is charged with promoting and recommending enhanced P.E. programs that can be integrated with a broader wellness strategy and health curriculum in K-12 schools in Illinois. It is doing this through educating and promoting leadership on enhanced physical education among school district and school district officials; developing and utilizing metrics to assess the impact of enhanced physical education; promoting training and professional development in enhanced physical education for teachers and other school and community stakeholders; identifying and seeking local, state, and national resources to support enhanced physical education; and other strategies.

For more information on enhanced P.E. in Illinois, please visit the Illinois State Board of Education's website on enhanced P.E.: ***www.isbe.state.il.us/EPE/***

Acknowledgment: Members of the Enhance P.E. Task Force, the Illinois Public Health Institute, and the Illinois Maternal and Child Health Coalition contributed to the compilation of resources available in this Resource Guide.

Updated August 9, 2013

Table of Contents

Research: Making the Case

Research Briefs

Research Summary: Exploring the Link between Physical Activity, Fitness and Cognitive Function

(isbe.net/EPE/pdf/iphi-epetf-rpt0313.pdf)

A research summary, created by the Illinois Public Health Institute for the Illinois Enhance Physical Education (P.E.) Task Force, explains the neuroscience linking exercise and fitness with academic achievement and improved test scores. The document goes into detail about which brain functions are enhanced with regular moderate to vigorous physical activity (MVPA), and how these improvements link to Illinois' Learning Standards for Physical Development and Health's Goal 19: Movement Skills and Goal 20: Physical Fitness. (March 2013)

The Learning Connection

(actionforhealthykids.org/storage/documents/pdfs/afhk_thelearningconnection_digitaledition.pdf)

This research brief, by Action for Healthy Kids, describes how healthy children are better learners. Yet, one-third of our kids are overweight or obese, putting them at risk for a variety of health complications and chronic diseases. Fortunately, solutions to this national epidemic, along with the keys to students' academic success, are within reach and they're documented in Action for Healthy Kids' new report. (April 2013)

The Wellness Impact: Enhancing Academic Success Through Healthy School Environments

(genyouthfoundation.org/wp-content/uploads/2013/02/The_Wellness_Impact_Report.pdf)

Released by GENYOUth, National Dairy Council (NDC), American College of Sports Medicine (ACSM) and the American School Health Association (ASHA), this research brief reinforces the crucial link between quality nutrition, physical activity and academic performance. (March 2013)

The Community Guide: Enhanced School-Based Physical Education

(thecommunityguide.org/pa/behavioral-social/schoolbased-pe.html)

In this section of the Guide to Community Preventive Services ("The Community Guide"), results from a systematic review of 14 studies demonstrate the effectiveness of enhancing school-based physical education curricula by making classes longer or having students be more active during class time. The studies suggest that an 8% increase in aerobic fitness among school-age children can be achieved through modifying P.E. curricula. (Review completed Oct. 2000)

Research: Making the Case

Shape of the Nation: Status of Physical Education in the USA

(heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_308261.pdf)

This report, compiled by NASPE (a non-profit member association that sets the standard for best practices in quality P.E. and sport), provides a current picture of P.E., finding areas of both improvement and decline since 2010. Thirty-eight states, 74.5%, mandate Physical Education in elementary, middle/high, and high school, but most do not require a specific amount of instructional time and more than half allow exemptions, waivers, and/or substitutions. (2012)

Active Living Research

(activelivingresearch.org/)

An organization dedicated to examining policies and conditions that impact people's ability to live active lives where they live, work and/or play.
Sample resources from Active Living Research:

Moving More at School

(Ilmaternal.org/icshc/docs/ALRresourcesSummarySchools090412.pdf)

This document contains links to Research Briefs and Facts Sheets that outline the impor tance of increasing physical activity and physical education, as well as the link between increased physical activity and improved academic performance. (Updated 9/4/12)

Do Short Physical Activity Breaks in Classrooms Work?

(activelivingresearch.org/activitybreaks)

A research brief on how programs that provide classroom physical activity breaks can increase physical activity and improve on-task behavior as well as some measures of health (Feb. 2013)

Understanding Local Governments' School-related Policies and Plans That May Affect Active Living Among School Stu dents and Community Members

(activelivingresearch.org/node/12897)

This PDF presentation is about the prevalence of local government's school-related, and community policies and plans for a more active life. (Feb. 2013)

Active Education: Physical Education, Physical Activity and Academic Performance

(activelivingresearch.org/files/ALR_Brief_ActiveEducation_Summer2009.pdf)

This research brief shows that children who are physically active and fit tend to perform better in the classroom and that daily physical education does not hurt academic performance. (Summer 2009)

School Policies on Physical Education and Physical Activity
(activelivingresearch.org/schoolpolicy)
This research brief summarizes the evidence-based ways to promote children's physical activity in schools. (Oct. 2011)

Fact Sheets

Enhanced School-Based Physical Education
(iphionline.org/pdf/IPHI_Enhanced_PE_Fact_Sheet_September_2011.pdf)
Illinois Public Health Institute's fact sheet defines evidence-based, Enhanced P.E. and details how expanding the quantity and quality of P.E. classes in schools can reduce Illinois' obesity epidemic in children. The document explains the health benefits of increasing physical activity and highlights the fundamental differences between traditional P.E. and enhanced P.E. (Sept. 2011)

Physically Active and Fit Children Perform Better in School
(alrstaging.commonmediainc.com/files/Brief_ActiveEducation_Factsheet_July2012.pdf)
This fact sheet by Active Living Research, shows that children who are physically active and fit tend to perform better in the classroom and that daily physical education does not hurt academic performance. (July 2012)

Supporting Physical Activity in School
(activelivingresearch.com/files/Synthesis_InSchoolPolicies_Factsheet_Nov2011_0.pdf)
This fact sheet summarizes the substantial and growing body of evidence about different ways to promote children's physical activity in schools. (Nov. 2011)

Infographics

NASPE's Infographic Series
(aahperd.org/naspe/publications/shape-of-the-nation-infographic.cfm)
This Series is on physical activity in US schools, based on the Shape of the Nation Report:
- Loopholes Stalling Progress in Physical Education Across the US
- States Skip Major Steps that Would Foster Physically Active Students

Burn to Learn
(makinghealtheasier.org/burntolearn)
The Centers for Disease Control and Prevention's infographic connecting physical activity with academic achievement.

Webinars

Enhanced P.E.: Making the Connection Between Physical Activity, Learning, Behavior & Health

(wp.me/P2qqPj-xv)

Illinois has long been a leader in valuing children's health by requiring daily physical education for grades K-12. With the instatement of the Enhance Physical Education (P.E.) Task Force, set forth in Public Act 97-1102, Illinois school leaders, teachers, and parents are becoming even more aware of the link between quality physical education and learning, behavior, social emotional wellness and health. We invite you to join this webinar to learn more about this connection and practical steps you can take to enhance P.E. and physical activity in your school or district.
(Originally recorded July 2013)

Exercise Your Mind: Collaborating to Enhance Physical Education in Illinois Schools

(wp.me/P2qqPj-5p)

The Illinois Public Health Institute's webinar about the link between P.E. and academic performance explains how P.E. has been redefined in recent years and practical ways in which this "new" P.E. can be implemented. The webinar shares information about the goals of Illinois' Enhanced P.E. Strategic Plan, published in June 2012, and identifies resources and tools for working with schools and communities to support improvements to P.E. (Originally recorded August 2012)

Improving School Policies and Settings to Increase Physical Activity

(activelivingresearch.org/node/12611)

This web-forum, presented by Active Living Research, showcases national leaders who summarize the science behind the role that schools play in supporting physical activity. IT provides examples of school policies and school-based interventions designed to get students more active.
(Originally recorded March 2012)

Books

Spark, by John Ratey (2008)

This book provides an explanation of the revolutionary connection between exercise and the brain's performance. Dr. Ratey emphasizes how even moderate exercise can "spark" mental circuits to combat stress, improve mood and thinking, and enhance memory. He explains the

National Initiatives to Improve Physical Education and Wellness

There are many national initiatives and programs that schools can participate in to increase the quality and quantity of physical education and improve overall wellness. Schools can participate in one or more of these programs, and should choose the ones that best fit their needs and interests.

Let's Move! Active Schools

(letsmoveschools.org/)

Let's Move! Active Schools is a comprehensive program that empowers school champions (P.E. teachers, classroom teachers, principals, administrators, and parents) to create active environments that enable all students to get moving and reach their full potential. Let's Move! Active Schools provides individual champions with a clear roadmap to create and active school environment. After signing up at the link above, champions will be guided through a simple, 6-step process currently being used by 15,000 schools as part of the Healthy Schools Program. Participating schools will have access to: activation grants, professional development, technical assistance, free resources and communication tools.

Presidential Youth Fitness Program

(presidentialyouthfitnessprogram.org/)

The President's Council on Fitness, Sports and Nutrition (PCFSN) engages, educates, and empowers all Americans to adopt a healthy lifestyle that includes regular physical activity and good nutrition. The Council's Presidential Youth Fitness Program partners with Fitnessgram® to provide fitness testing protocols, professional development, and recognition. This program is inclusive of students with disabilities.

The President's Council is made up of athletes, chefs, physicians, fitness professionals, and educators who are appointed by the President and serve in an advisory capacity through the Secretary of Health and Human Services. The **PCFSN** features Co-Chair Drew Brees of the New Orleans Saints, and Co-Chair Dominique Dawes, 3-Time Olympic gymnast. Their **public service announcements** elaborate on how children can get on the path to active and healthy lives.

Healthier US Schools Challenge

(fns.usda.gov/hussc)

A voluntary certification initiative to recognize schools that have created healthier school environments through nutrition and physical activity. Schools that participate in the National School Lunch Program are eligible.

National Initiatives to Improve Physical Education and Wellness

Alliance for a Healthier Generation's Healthy Schools Program National Recognition Award

(Schools.healthiergeneration.org/_asset/l062yk/Healthy-Schools-Program-Framework.pdf)

This award is given to acknowledge schools that have implemented changes that create healthier school environments. There are three levels of recognition: Bronze, Silver and Gold. Awards are given based on meeting benchmarks from the Healthy School's Framework for school wellness.

Fuel Up to Play 60

(fueluptoplay60.com/)

A program created with support from the NFL that empowers students to take charge in making nutritious food choices and get active for at least 60 minutes every day. By being involved and making healthy choices, students can win extraordinary prizes (e.g., Super Bowl tickets). However, resources are also included for supporters and educators to get involved and help students get active and healthy with activities such as the **Scavenger Hunt Challenge** and Plays of the Month.

Students Taking Charge

(studentstakingcharge.org/)

A program that empowers students to make changes in nutrition and physical activity. Powered by Action for Healthy Kids, this program allows students to investigate their schools on the subject of school wellness through **surveys**, learn information while becoming an advocate for Students Taking Charge, and act on nutrition and/or physical activity projects with helpful **action plans.**

ACES (All Children Exercise Simultaneously)

(lensaunders.com/aces/)

A signature program of the Youth Fitness Coalition, Inc., Project ACES takes place on the first Wednesday in May as part of National Physical Fitness and Sports Month along with National Physical Education Week. "The world's largest exercise class" since 1989, with millions of children from all over the world exercise together to promote proper health and fitness habits.

Curricula: Physical Education

Evidence-based curricula and other promising practices are critical tools for designing a quality P.E. curriculum. A selection of research-tested programs and other resources for designing a quality program are listed below.

Get Fit & Flourish: Enhanced Physical Activity Manual

(iphionline.org/pdf/Enhanced_Physical_Activity_Manual.pdf)

Developed by Golden Apple awardee Sandy Noel in collaboration with the Illinois Public Health Institute, this manual provides a variety of lesson plans with activities that help students develop the skills needed for life–long physical activity. Each lesson also focuses on the importance of team-building and cooperative learning. Handouts include tips for families, and resources for getting students moving more in physical education class, after-school programs, and at home.

SPARK Physical Education Programs

(sparkpe.org/physical-education/)

Four evidence-based physical education programs that promote new and innovative approaches to P.E. content and instruction for grades K-2, 3-6, middle, and high school. Each SPARK Program provides staff development, follow-up support, and content-matched equipment.

Coordinated Approach to Child Health (CATCH) for P.E.

(catchusa.org/)

A coordinated school health program designed to promote physical activity, healthy food choices, and the prevention of tobacco use in children. It is the most well known health promotion and childhood obesity prevention program available. It covers students from preschool through 8th grade. The central approach is to teach students that eating healthy and being physically active every day can be fun. It has proven that creating healthy habits leads to lasting behavior changes.

Eat Well and Keep Moving

(eatwellandkeepmoving.org/programOverview.cfm)

A comprehensive approach to motivating upper-elementary students to eat better and stay active. It is a six component program that encompasses the classroom, the cafeteria, and the gymnasium and includes tools to involve the family and the community. This resource allows users to teach about nutrition and fitness, and launch a school-wide program.

Curricula: Physical Education

Planet Health
(planet-health.org/)

Complete curriculum that helps physical education teachers guide middle school student in choosing healthy foods, increasing physical activity, and limiting TV and other screen time. This resource contains a CD-ROM, worksheets, parent information and other teacher resource materials in addition to ready-to-use lesson plans and materials, and FitCheck, a self-assessment tool to track student activity levels.

Five for Life
(focusedfitness.org/index.php?id=19&)

A K-12 fitness and health program that uses age appropriate academic tools in an activity-based setting that also allows students to measure their own fitness levels. There are basic, intermediate, and advanced programs available. Students will be able to develop the 5 components of fitness, have a better understanding of nutrition and body systems, perform fitness measurements, and manage their personal health.

Walk Across Illinois Physical Education Curriculum
(activetrans.org/sites/default/files/edu/WAI-PE-excerpts.pdf)

Energize students with a curriculum, developed by the Active Transportation Alliance, that connects physical activity and skill development with biking, walking and public transportation. The curriculum is divided into sections focusing on fall, winter and spring sports skills, with lessons designed to fit class periods as short as 30 minutes while keeping students actively moving over 75 percent of the class time. Teachers may use some or all of the lessons. Endorsed and promoted by Illinois Governor Quinn's Council on Fitness and Health.

Research-Tested Intervention Programs
(rtips.cancer.gov/rtips/reference/fact_sheet.pdf)

A fact sheet on enhanced school-based physical education interventions, based on the Guide to Community Preventative Services systematic review and recommendations by the National Cancer Institute.

Brain Breaks: Integrating Physical Activity into the School Day

Short bouts of physical activity throughout the school day, often called "brain breaks," have been proven to help students focus and stay on task. An extensive list of brain breaks is available through NASPE's Integrating Physical Activity into the Complete School Day, which explains the importance of physical activity breaks throughout the school day and provides plenty of outside resources for physical activity breaks. A selection of other resources for implementing brain breaks during the school day is available below.

Brain Breaks

(emc.cmich.edu/BrainBreaks/)

This book for elementary school teachers contains hundreds of "brain breaks" for young students in virtually every subject. The "breaks" provide for physical activity the classroom and address four domains: cognition, psychomotor skills, fitness, and psychosocial abilities.

10 Simple Activities to Encourage Physical Activity in the Classroom

(yourtherapysource.com/files/10_simple_activities_classroom.pdf)

A list of 10 games that can be done in the classroom to get students moving.

ABC for Fitness

(davidkatzmd.com/abcforfitness.aspx)

This program shows schools how to integrate brief episodes of physical activity into the classroom throughout the school day without losing instruction time. A video and study that took place in Missouri are available.

Energizers: Classroom-Based Physical Activities STET

(eatsmartmovemorenc.com/Energizers/Texts/K-5-Energizers.pdf)

This handbook provides teachers with specific instructions on how to do "energizers" for students K-5 that integrate physical activity with academic concepts. It includes 22 energizers for students in grades K-2 and 25 energizers for students in grades 3-5.

Playworks: Education Energized

(playworks.org/files/Playbook_10-11_final.pdf)

Playworks is a non-profit organization that aims to increase physical activity opportunities for children. Their 2010-11 Playbook contains a series of activities varying by level that are inclusive, kindergarten friendly, require no equipment, are rotational, and that are good for transitions to other games. Games range from "Ice Breakers" to the "Five Fingers of Safety."

Brain Breaks: Integrating Physical Activity into the School Day

Instant Recess®

(journeyworks.com/Instant-Recess-Building-a-Fit-Nation-10-Minutes-at-a-Time-Book/productinfo/4010/)

Specializing in creating health promotion materials, Journeyworks created Instant Recess®, resources which use culturally salient music and moves to encourage physical activity in 10-minute bouts throughout the school day.

Take 10!

(take10.net/)

This program incorporates grade-specific physical activities linked to core curriculum objectives for mathematics, science, language arts, social studies, and character education in 10-minute segments.

Active Academics

(activeacademics.org/)

Based on Take 10!, this program is a way to integrate physical activity into lessons, by grade and subject matter. Grade levels include K-5, and content areas cover classroom energizers, health, math, P.E., reading/language arts, recess/lunch break, and science/social studies. The lesson ideas are designed with activities lasting 10 minutes or less. They address content standards while keeping kids active.

Evaluation Tools: P.E. Teacher and P.E. Program

The following resources provide guidance on how to evaluate the quality of P.E. instruction and a P.E. program, as well as tools for measuring the amount of moderate to vigorous physical activity that students engage in during P.E. class and throughout the school day.

Evaluating your P.E. Teacher

Tools for Observing Quality Physical Education
(aahperd.org/naspe/publications/teachingTools/observepe.cfm)
NASPE provides information on components of a quality P.E. program, guidance on hiring, evaluating, and supporting PE teachers, as well as National Standards, guidelines and position statements.

P.E. Teacher Evaluation Tool
(michigan.gov/documents/mde/NASPETool_212381_7.pdf)
A tool for K-12 administrators and school district curriculum specialists to identify knowledge, skills, and behaviors necessary to provide well-rounded PE instruction to K-12 students. It can also be used to identify areas of professional growth for PE teachers, as well as an instructional tool in physical education teacher education programs. Specific examples for use are available.

Evaluating P.E. Curriculum

Physical Education Curriculum Analysis Tool (PECAT)
(cdc.gov/healthyyouth/pecat/index.htm)
Schools and districts can use this tool to conduct a complete and consistent analysis of a physical education curriculum based on national P.E. standards. The PECAT can help schools and districts revise, select, or develop a quality physical education curriculum.

Health Education Curriculum Analysis Tool (HECAT)
(cdc.gov/healthyyouth/HECAT/index.htm)
Schools and districts can use this tool to conduct a complete and consistent analysis of a health education curriculum based on National Health Education Standards. The HECAT can help schools and districts revise, select, or develop a quality health education curriculum.

Measuring Moderate to Vigorous Physical Activity

System for Observing Fitness Instruction Time (SOFIT)
(activelivingresearch.org/node/11944)

This tool allows researchers, teachers and supervisors to collect and analyze data about different physical education lessons and assess the success of those lessons as they relate to program goals. An observer training DVD and other materials are available.

System for Observing Play and Leisure Activity in Young (SOPLAY)
(activelivingresearch.org/node/10642)

SOPLAY is a validated tool for directly observing physical activity and associated environmental characteristics in free play settings (e.g., recess and lunch at school). SOPLAY provides objective data on the number of participants and their physical activity levels during play and leisure opportunities in targeted areas.

Wellness Policies: Requirements, Model Policies, and Guidance

Schools and districts can establish requirements related to the quantity and quality of physical education and physical activity during the school day by incorporating it into their local wellness policy. The resources below help assess opportunities for improved policies and practices related to wellness and provide a framework and model policies that can be used to develop a locally relevant wellness policy.

School Health Index (SHI): A Self-Assessment and Planning Guide

(cdc.gov/healthyyouth/shi/index.htm)

An online self-assessment and planning tool to develop an action plan for improving student health based on the Coordinated School Health approach. The SHI can help schools assess the strengths and weaknesses of their health policies and programs and develop an action plan to improve them. The latest version includes a focus on sexual health, modules for family and community involvement, and updated nutrition content.

The Wellness Policy Tool

(actionforhealthykids.org/resources/wellness-policy-tool)

Action for Healthy Kids created this tool that consists of eight steps to help develop, implement, and evaluate wellness policies. Each step is explained in detail, and was designed to help school district's meet their unique wellness goals.

Healthy, Hunger-Free Kids Act 2010

(fns.usda.gov/cnd/governance/legislation/cnr_2010.htm)

The legislation authorizes funding and sets policy for USDA's core child nutrition programs. **Section 204 of this Act**, Public Law 111-296, expands the scope of wellness policies; brings in additional stakeholders in its development, implementation and review; and requires public updates on the content and implementation of the wellness policies.

Illinois State Board of Education resources for developing wellness policies (ISBE)

(isbe.state.il.us/nutrition/htmls/wellness_policy.htm)

These resources include sample local wellness policies, child nutrition programs and regulations, legislation regulations policy and monitoring and program requirements, and links to other wellness policies and nutrition-related organizations.

ISBE Model Wellness Policy

(kidseatwell.org/flyers/School%20District%20Model%20Local%20Wellness%20Policy%202006.pdf)

ISBE recommends the use of the Local Model Wellness Policy as a framework to create a local policy that addresses the specific health needs of the school district.

Wellness Policies: Requirements, Model Policies, and Guidance

Model School Wellness Policies (schoolwellnesspolicies.org/)
These are also available from the National Alliance for Nutrition and Activity.

School Wellness Council Toolkit
(schools.healthiergeneration.org/_asset/wwj4dq/SchoolWellnessCouncilToolkit.pdf)
This toolkit, designed for schools in Alliance for a Healthier Generation's Healthy Schools Program, provides guidance for working with school wellness councils to convene, plan and implement action plans for school improvements.

School Boards: Opportunities to Improve Wellness

What School Boards Can Do To Enhance Student Learning by Supporting a Coordinated Approach to Health
(nsba.org/Board-Leadership/SchoolHealth/Board-Support.pdf)
This National School Boards Association fact sheet describes the role of schools in addressing physical, mental, social, and environmental factors related to health, wellbeing and learning. It describes NSBA's Key Work of School Boards framework and support resources. (Oct. 2010)

Moderate to Vigorous Physical Activity in P.E. to Improve Health and Academic Outcomes
(csba.org/EducationIssues/EducationIssues/Wellness/~/media/Files/EducationIssues/Wellness/200911_MVPA_FactSheet.ashx)
This fact sheet, developed by the California School Boards Association and Project Lean, explains that schools play a central role in providing opportunities for students to engage in moderate to vigorous physical activity (MVPA). It defines MVPA and its benefits, as well as current trends pertaining to it. In terms of policy, it points out cost-effective strategies, and actions that Boards can take to increase MVPA within P.E. curricula. (Nov. 2009)

Active Bodies, Active Minds: Physical Activity and Academic Achievement
(californiaprojectlean.org/docuserfiles/AcademicAchievement_FactSheet_WEB_final.pdf)
This fact sheet, developed by the California School Boards Association and Project Lean, points out that even with smaller budgets and greater pressure to improve academic achievement, there are cost effective strategies to maximize opportunities for physical activity in schools. Information is provided showing studies of how much and which kind of physical activity increases academic performance, and it describes the role of school boards in establishing policies and support for these activities.

School Board Engagement
(californiaprojectlean.org/doc.asp?id=171&parentid=20)
Additional guides, fact sheets, research and policy briefs, and sample policies are available from California Project Lean.

Standards & Recommendations: National and Illinois

National standards and recommendations for P.E. and physical activity

National Association for Sport and Physical Education-National Standards for Physical Education

(aahperd.org/naspe/standards/nationalStandards/PEstandards.cfm)

These standards are recognized as the national model for K-12 physical education standards. They reflect what students should know and be able to do as a result of a quality P.E. program.

Physical Activity Guidelines for Americans (PAG)

(health.gov/paguidelines/guidelines/default.aspx)

The Federal government's first ever issued description of the types and amounts of physical activity that offer substantial health benefits to Americans. The guidelines can help schools become knowledgeable about the health benefits of physical activity, understand how to participate in activity to meet the guidelines, and assist others in participating.

Healthy People 2020: Physical Activity Goals

(healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=33)

National goals for physical activity for Americans that reflect the scientific evidence of the health benefits of regular physical activity for youth and adults alike. Healthy People 2020 stresses a multidisciplinary approach to promoting physical activity. Objectives highlight how physical activity levels are affected by environments and policies. Policy is also addressed in regard to younger children in childcare settings, TV and gaming, and recess and P.E. in schools.

Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation

(iom.edu/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx)

The Institute of Medicine evaluated hundreds of prior strategies for their promise in accelerating obesity prevention over the next decade. It mapped how the most promising interacted with, reinforced, or slowed each other's progress. This "systems approach" way of thinking allowed the committee to identify recommendations and understand how they would be important individually and, when implemented collectively, would further strengthen efforts to prevent obesity. One of the key recommendations was to make schools a national focal point. The committee identified related recommendations, strategies, and potential implementation actions organized around five critical environments, including schools, that urgently need reform in order to accelerate progress. (May 2012)

School Health Guidelines to Promote Healthy Eating and Physical Activity
(cdc.gov/healthyyouth/npao/strategies.htm)

The CDC's School Health Guidelines to Promote Healthy Eating and Physical Activity can help schools develop, implement, and evaluate healthy eating and physical activity policies and practices for students. Workshops are available upon request.

The Role of School Nurses via the National Association of School Nurses
(nasn.org/portals/0/positions/2011psrole.pdf)

This position statement discusses how school nurses should have a role in encouraging and advocating for quality physical education and physical activity in schools, walk to school programs, and good nutrition.

State standards and recommendations for P.E. and physical activity

Illinois Learning Standards for Physical Development and Health
(Isbe.net/ils/pdh/standards.htm)

Based on the National Standards for P.E. and the National Health Standards, the Illinois standards include Goals 19-24, addressing movement skills, physical fitness, team-building, health promotion, prevention and treatment, human body systems, and communications and decision making. The enhanced P.E. Task Force, which produced this resource guide, is also reviewing and making recommendations to the ISBE on updating the standards.

Supporting Students with Disabilities

Students with disabilities deserve the many benefits of regular physical activity as much as any other student. Many resources exist to increase opportunities for physical activity and level of fitness among students with disabilities.

Creating Equal Opportunities for Children and Youth with Disabilities to Participate in Physical Education and Extracurricular Athletics

(www2.ed.gov/policy/speced/guid/idea/equal-pe.pdf)

This document includes an overview of the problem, suggestions to increase opportunities for children and youth to access P.E. and athletics, and three appendices. Appendix A includes references from the field, Appendix B includes an example of a state law that addresses equal opportunity to access P.E. and athletics, and Appendix C lists projects and collaborative efforts that address physical activity among people with disabilities and includes links to projects preparing adapted physical education personnel. (August 2011)

The Brockport Physical Fitness Test

(topendsports.com/testing/brockport.htm)

The Presidential Youth Fitness Program (PYFP) acknowledges the Brockport Physical Fitness Test as a useful resource when assessing students with disabilities. When it comes to conducting fitness assessments on students with disabilities, there is no "one size fits all" approach. Rather, the unique needs of each student must be considered. The **Guidance for Using the Brockport Physical Fitness Test** will help you get started on finding the right assessment tools for students with disabilities.

AAROW, Family Matters, & Family Resource Center on Disabilities

(fmptic.org/)

These Parent Training and Information Centers, funded by the US Department of Education, serve families of children and young adults from birth to age 22 with all disabilities including physical, cognitive, emotional and learning.

Resources from the National Center on Health, Physical Activity, and Disability (NCHPAD)

Inclusive Physical Education

(ncpad.org/248/1627/Inclusive~Physical~Education)

An article can be used to learn about consideration of factors that may affect students' ability to participate in P.E. activities, adaptation of the activities to suit the needs of each child, and finding more resources about the topic.

Assessing Children's Health-Related Physical Fitness

(ncpad.org/89/669/Assessing~Your~Child~s~Health-Related~Physical~Fitness)

An informative article about the history of health-related fitness tests for children with disabilities, which led to the Brockport Physical Fitness Test. A fitness test designed spe cifically to test the fitness of youth ages 10-17 that have disabilities.

Maintaining or Improving Fitness in Childhood Disorders:

(ncpad.org/326/1960/Maintaining~or~Improving~Fitness~in~Childhood~Disorders)

This article explains how the disability rights movement eventually led to the Individuals with Disabilities Education Act **(IDEA)**, which has given children with disabilities more chances to learn in "mainstream" environments, yet still leaves gaps for equal opportuni ties in P.E. This gave way to the **2008 Physical Activity Guidelines for Americans**. It also addresses the issue of creating community and school-based fitness programs that are more inclusive.

Awards and Recognition

Recognizing programs, teachers, and administrators that have positively impacted physical education and wellness reinforces the value of a school's hard work and provides an opportunity to share successes and lessons learned. Various awards and recognitions are available at the state and national level.

Blue Ribbon Award

(Iahperd.org/textpages/offerings/programs/blue_ribbon/)

A voluntary Illinois program to recognize excellent physical education and health programs, administered by the Illinois Association for Health, Physical Education, Recreation, and Dance (IAHPERD). All Illinois public, parochial and alternative schools are eligible. Physical education recognition is available for grades K-12; health education recognition is available for grades 5-8 and 9-12.

Illinois Interagency Nutrition Council Community Partnership Award

(inc.aces.illinois.edu/)

This award recognizes programs that promote healthy lifestyles in schools only.

American Alliance for Health Physical Education, Recreation & Dance (AAPERD) Recognition Awards: Access all here: (aahperd.org/whatwedo/awards/)

Margie R. Hanson Elementary P.E. Distinguished Service Award

An award given to recognize senior professionals who have made outstanding contributions to the field of physical education for children.

NASPE Teacher of the Year Award

An award that honors exemplary elementary, middle, and high school P.E. teachers across the country.

NASPE Outstanding Mentor of the Year Award

An award given to an outstanding role model who encourages student involvement in professional opportunities and provides exemplary academic preparation.

NFL P.E. Teacher of the Year Award

The National Football League Network awards $10,000 one-year stipend and a $10,000 school companion grant to a P.E. teacher committed to the fight against childhood obesity. The chosen teacher also acts as a spokesperson for the NFL program Keep Gym in School.

AAPERD Recognition Awards contined: (aahperd.org/whatwedo/awards/)

Channing Mann K-12 P.E. Administrator of the Year Award

An award given to administrators and supervisors dedicated to the mission of NASPE and school leadership.

NASPE Athletic Director of the Year Award

An award that recognizes secondary school athletic directors who exemplify the highest professional standards and who have made significant contributions to the community and school.

P.E. Teacher Education Honor Award

This award honors exemplary work for a service, product, or collaboration that benefits physical education teacher education. Eligible nominees include individuals, programs, associations, or government entities.

Training and Professional Development

On-going professional development and training for teachers and administrators is critical for keeping your P.E. and other wellness programs up-to-date with best practices.

Resources and Tools

ISBE Training Resources and Workshops
(Isbe.state.il.us/nutrition/htmls/workshops.htm)

This site directs users to eTrainings, Workshops and other training resources on the topics of nutrition and wellness. Examples include Child and Adult Care Food Program-Child Care Institution Training, National School Lunch Program, and the Summer Food Service Program as well as other miscellaneous trainings.

Training Tools for Healthy Schools: Promoting Health and Academic Success
(cdc.gov/healthyyouth/TTHS/)

The Centers for Disease Control and Prevention (CDC) has created training tools, formerly known as the DASH Training Network, or "D-Train," a national unit of master trainers to provide workshops on using and implementing CDC's school health tools. The workshops offer ways to modify and improve school health policies and programs via information about the national standards for health or P.E., and assistance in revising health-related education curricula by aligning schools with the CDC's guidelines to promote healthy eating and physical activity.

Action for Healthy Kids Resource Clearinghouse
(actionforhealthykids.org/resources/resource-clearing-house/search/summary)

AFHK's Resource Clearinghouse highlights nationally recognized, evidence-based tools, programs, and best practices for infusing nutrition and physical activity into the school day. Filter easily through hundreds of resources by audience, age, type, and topic. Topics include classroom education, nutrition education, food at school, physical activity, physical education and more.

NASPE E-Learning Center
(aahperd.org/naspe/professionaldevelopment/elearningcenter.cfm)

These free, hour long webinars and sessions created by NASPE bring the latest standards-based professional development concerning P.E. issues to your computer and include take-home materials and contact hours for participation.

Physical Best Workshops (NASPE)
(aahperd.org/naspe/professionaldevelopment/physicalbest/)
Developed by physical educators for physical educators, this education program focuses on educating all children regardless of talent, abilities or disabilities, moving students toward independence of their own fitness and health, and promoting regular, enjoyable physical activity. The site includes an overview and fact sheet of the program, as well as information on how to become certified as a **Physical Best Heath-Fitness Specialist.**

Project Adventure (PA)
(pa.org/programs/physical-education-fitness/about-our-pe-program/)
PA is an international, nonprofit, education organization whose mission is to provide leadership in the expansion of adventure-based experiential programming. The curriculum for grades K-12 P.E. attracts students, engages teachers, makes a positive impact on school climate, and relates P.E. as a tool for academic success.

Conferences and Events

Regional and State Conventions in Illinois
(Iahperd.org/textpages/conventions/IAHPERD/)
For more information, visit IAHPERD's **website**.

Action For Healthy Kids Events
(actionforhealthykids.org/events/event/7)
Action for Healthy Kids hosts webinars, local trainings, and conferences to help you start making healthy differences in your schools.

PIPEline Workshops
(aahperd.org/naspe/professionaldevelopment/pipeline/)
The Program Improvement in Physical Education workshops provide in-service training for K-12 P.E. teachers. Information is also provided regarding **what** workshops are available as well as the **cost.**

ProLink Workshops and Consultation
(aahperd.org/naspe/professionaldevelopment/proLink/)
Together, NASPE and ProLink provide educators with resources including curriculum reviews, advocacy presentations, tailored workshops and in-services, and accreditation preparation for coaching education or sport management programs in addition to the consulting services ProLink has to offer.

National P.E. Institute

(nationalpeinstitute.com/)

This annual conference (July 29- August 2, 2013, in Asheville, N.C.), will provide educators with tools, strategies, and information on how to develop a K-12 curriculum aligned with student assessment. Participants will also have the chance to learn from others who have already implemented and linked these data-driven assessments to K-12 curricula.

P.E. Tech Camp

(polar.com/us-en/b2b_products/physical_education/training/specialist_workshop)

This conference features Polar heart rate monitors, Polar Active, and the Polar Cardio GX- some of the latest technology used in P.E. today. Attendees will also learn about software for your PC and to manage data, and Polar TriFIT Assessment Systems (July 10-12, 2013, at Illinois State University).

Enhance P.E. Task Force

Illinois State Board of Education
Christopher A. Koch, EdD
State Superintendent of Education

Illinois Department of Public Health
LaMar Hasbrouck, MD, MPH
Director

Glossary of Neuroscience Terms

Updated August, 2013

A

Amygdala – a routing site for moving information based upon emotional state; when negative emotions (e.g. fear, anxiety, boredom) are experienced the amygdala's filter takes in excessive amounts of brain's nutrients and oxygen; this puts brain into 'survival' mode which can block information from getting into the prefrontal cortex

Axon – part of a neuron that takes information away from the cell body

B

BDNF (brain-derived neurotrophic factor) – aids in making and helping to ensure the growth and survival of new cells; gives synapses the tools needed to take information, process it, associate it, remember it and put it into context; is unleashed when we get blood pumping

Brain – an organ composed of billions of neurons that coordinate all behavior

C

Cerebellum – part of the brain; important role in motor control (does NOT initiate movement); also involved in cognitive functions such as attention and language

Corpus Callosum – bridge of neural fibers connecting the two hemispheres of the brain

Cross lateral skills/movements – those skills or movements that have a part of the body move over an imaginary line that divides the body in two, either horizontally of vertically.

D

Dendrite – part of the neuron that takes information to the cell body

Dopamine – neurotransmitter that carries electrical messages (pieces of information) across a synapse from one neuron to another; amounts best increased moderate, sustained activities; increases alertness, memory and executive function

E

Endorphins – neurotransmitter;'natural painkillers'; creates a 'runner's high'

Executive Function – processes involved in planning, abstract thinking, rules acquisition, initiating appropriate actions and inhibiting inappropriate actions

F

Frontal lobe – area of the cerebral cortex involved with reasoning, planning, speech, movement and emotions

G

Glia – support cells of the nervous system

H

Hemisphere – one half of the brain

Hippocampus – place where the brain links new sensory input to both memories of the past and knowledge already stored so that new rational memories can be made; new rational memories can then be processed in the prefrontal cortex

I

J

K

L

M

Meninges – series of three membranes (dura mater, arachnoid, pia mater) that cover the brain and spinal cord

N

Neuron – a nerve cell; 'blank slate' stem cells that something to do in order to survive (use 'em or lose 'em); learning and stimulation helps them to survive and gives them purpose

Neurogenesis – the process by which new nerve cells are generated from stem cells

Neuroplasticity – refers to changes in neural pathways and synapses which are due to changes in behavior (e.g. exercise), environment and neural processes

Neurotransmitters – a chemical substance (e.g. dopamine, serotonin, endorphins) that is released at the end of a nerve fiber that sends a nerve impulse across a synapse; exercise increase the concentration of neurotransmitters

O

Occipital Lobe – area of the cerebral cortex important for vision

P

Parietal Lobe – area of the cerebral cortex involved with the perception of touch, pressure, temperature and pain

Prefrontal Cortex – 'the thinking brain'; processes new information in nerve communication networks that make up executive function; organizes new memories into long-term knowledge

Proprioceptive System – 'pressure' receptors in the muscles and joints allow us to stand and sit upright automatically without giving thought to how the body is positioned; with a proprioceptive system that is not 'mature' and fully functioning, students may squirm in their seats and actually feel 'unbalanced'; their energy is being taken up by their body and may not have enough energy to concentrate on mental tasks

Q

R

RAS (reticular activating system) – 'brain stem'; receives information from sensory nerve endings which pass through brain stem into 'thinking brain'/prefrontal cortex

S

Serotonin – neurotransmitter; contributes to feelings of well-being and the cognitive functions of memory and learning; regulates mood, appetite and sleep

Synapse – a gap between two neurons

T

Temporal Lobe – area of the cerebral cortex involved with memory and the perception and recognition of sounds

U

Unipolar – a neuron with a single branch extending from the cell body

V

Vestibular System – provides the 'basic' framework for visual, auditory and body senses to make sense of time and space; when not fully functioning, learning is negatively affected (e.g. students may squirm in their seats to orient themselves or, if forced to sit still, they may be 'lost in space'); may need to 'bounce around' to pay attention in class

W

White Matter – nerve fiber pathways

X

Y

Z

Proposed Criteria for Highly Qualified P.E. and Health Teachers

Kindergarten and Grades (1- 5): Physical Education

A teacher who has primary responsibility for teaching content in Physical Education will be considered "highly qualified" if he or she:

a) holds an elementary or a special K-12 certificate with an endorsement for self-contained general elementary education and has passed the Elementary/Middle Grades test; or

b) holds an elementary or a special K-12 certificate valid for the subjects taught and has passed the content-area test applicable to that endorsement; or

c) holds an early childhood certificate that is valid for the primary grades and has passed the Early Childhood test (applicable only through Grade 3); or

d) holds an elementary, an early childhood, or a special K-12 certificate valid for the subjects taught and qualifies with 100 points under the Illinois HOUSSE, if applicable.

Middle Grades (6-8): Physical Education and Health

A teacher who has primary responsibility for teaching content in Physical Education or Health, whether in a self-contained or a departmentalized setting, will be considered "highly qualified" if he or she holds an elementary, a special K-12, or a secondary certificate valid for the subjects taught and:

a) has passed the Elementary/Middle Grades test; or

b) for each core subject area of teaching responsibility:

1) has passed the content-area test specific to the subject taught, or

2) has completed a major or coursework equivalent to a major, or

3) holds a master's or higher degree in a field directly related to the area of assigment, or

4) holds certification from the National Board for Professional Teaching Standards (NBPTS) or an Illinois master certificate, or

5) qualifies with 100 points under the Illinois HOUSSE, if applicable.

High School Physical Education and Health Education:

A teacher who has primary responsibility for teaching content in Physical Education or Health will be considered "highly qualified" if he or she holds a secondary, a special K-12, or, for Grade 9 only, an elementary certificate valid for the subjects taught and, for each core subject area of teaching responsibility:

a) has passed the relevant content-area test; or

b) has completed a major or coursework equivalent to a major; or

c) holds a master's or higher degree in a field directly related to the area of assignment, or

d) holds NBPTS certification or an Illinois master certificate; or

e) qualifies with 100 points under the Illinois HOUSSE, if applicable.

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