

Stakeholder and Expert Task Force on Physical Education



April 1, 2015

MEMORANDUM

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

FROM: Dr. Jean H. Sophie
Superintendent
Lake Bluff School District 65

SUBJECT: Stakeholder and Expert Task Force on Physical Education Report

The Stakeholder and Expert Task Force on Physical Education Report is being submitted pursuant to Public Act 098-0859, which requires all public schools, from the 2016-17 school year onwards, to administer scientifically-based, health-related physical fitness assessments for grades 3-12 for select fitness components and to periodically report that information to the Illinois State Board of Education (ISBE).

This Task Force was charged with making recommendations (from which ISBE will adopt rules for implementation, data collection and reporting) on the following: 1) which components of fitness should be assessed; 2) which fitness component scores should be reported to ISBE; 3) the demographic information that should accompany the scores; 4) the grade levels for which fitness assessment scores should be reported; and 5) the frequency of reporting.

The Task Force was also charged with making recommendations on methods for ensuring validity and uniformity of fitness scores, including assessment administration protocols and professional development approaches for physical education teachers, and protocols regarding the protection of student confidentiality and individual information and identifiers.

Finally, the Task Force was charged with making recommendations on how physical fitness assessment data should be reported by ISBE to the public, including potential correlations with student academic achievement, attendance, and discipline data and other recommended uses of the reported data.

Please find enclosed the report and recommendations of the Task Force. For additional copies of this report, or for more specific information about any of the items, please contact the Governmental Relations Division at 217/782-6510.

cc: Shawn Backs, MS, Principal Consultant
Mark Haller, SNS, Division Administrator
Nutrition and Wellness Programs
Illinois State Board of Education

Enclosure

Physical Fitness Assessments in Illinois Schools:
**STAKEHOLDER AND EXPERT
TASK FORCE ON
PHYSICAL EDUCATION**

Recommendations and Report



April 2015

For additional information on the Stakeholder and Expert Task Force on Physical Education, contact:

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Suggested Citation: Stakeholder and Expert Task Force on Physical Education. (2015). *Stakeholder and Expert Task Force on Physical Education: Recommendations and Report*. Springfield, IL: Illinois State Board of Education.

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

This Task Force was supported by funds provided by the Illinois State Board of Education.

Appointments to the Stakeholder and Expert Task Force on Physical Education

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The Stakeholder and Expert Task Force on Physical Education

Overview of Public Act 98-0859

Public Act 098-0859 amended the Illinois School code to add a new section (Section 27-6.5) to require all public schools, from the 2016-17 school year onwards, to administer scientifically-based, health-related physical fitness assessments for grades 3-12 for select fitness components and to periodically report that information to the Illinois State Board of Education (ISBE). The physical fitness assessments will serve two purposes: 1) to teach students how to assess their fitness levels, set goals for improvement, and monitor progress in reaching their goals, and 2) to measure the effectiveness of State Goal 20 of the Illinois Learning Standards for Physical Development and Health. The goal of Illinois State Learning Standard 20 is for students to achieve and maintain a health-enhancing level of physical fitness based upon continual self-assessment.ⁱ

Overview of Task Force charges

Public Act 098-0859 established a 15-member Stakeholder and Expert Task Force on Physical Education (P.E.) composed of members representing organizations that represent physical education teachers, school officials, principals, health promotion and disease prevention advocates and experts, school health advocates and experts, and other experts with operational and academic expertise in the measurement of fitness. The Task Force was charged with making recommendations (from which ISBE will adopt rules for implementation, data collection and reporting) on the following aspects of the required fitness assessments: 1) which fitness components should be assessed; 2) which fitness component scores should be reported to ISBE; 3) the demographic information that should accompany the scores; 4) the grades levels for which fitness assessment scores should be reported; and 5) the frequency of reporting. The Task Force was also charged with making recommendations on methods for ensuring the validity and uniformity of fitness scores, including assessment administration protocols and professional development for P.E. teachers, and protocols regarding the protection of student confidentiality and individual information and identifiers. Finally, the Task Force was charged with making recommendations on how physical fitness assessment data should be reported by ISBE to the public, including potential correlations with student academic achievement, attendance, and discipline data and other recommended uses of the reported data. (See Appendix A to review Public Act 098-0859.)

The Task Force's recommendations and a rationale for each recommendation is included starting on page 5 of this report.

Overview of Enhanced Physical Education in Illinois

Illinois has been a leader in valuing children's health, long requiring daily P.E. for students in grades K-12. Many schools have designed or adopted model programs to meet this requirement and create opportunities for physical activity.

There is a significant body of research showing that children who are more physically active perform better in class and on standardized tests and have improved on-task behavior in class.^{ii, iii, iv} With one in three Illinois children overweight or obese and at increased risk for chronic diseases like cardiovascular disease and type 2 diabetes,^v improving opportunities for physical activity is imperative for improving our children's academic achievement and their health.

Enhanced P.E., defined as "programs that increase the length of, or activity levels in, school-based physical education classes," is considered an evidence-based intervention for improving physical activity by the Centers for Disease Control and Prevention.^{vi} Combined with the neuroscience research showing that physical fitness and physical activity are linked to improved academic achievement and improved behavior,^{vii} the Illinois State Board of Education, the Illinois Department of Public Health, and the Illinois Public Health Institute led efforts to produce an Enhanced P.E. Strategic Plan, with input from a voluntary Enhanced P.E. Task Force in 2012.^{viii}

As the voluntary Enhanced P.E. Task Force finalized the strategic plan, Public Act 97-1102 established the Illinois Enhance P.E. Task Force to promote and recommend enhanced physical education programs that could be integrated with broader wellness strategies and health curriculum in elementary and secondary schools. That Enhance P.E. Task Force proposed revised learning standards for physical development and health, which were adopted by the State Board of Education in January 2013. The revisions helped move P.E. in Illinois to an enhanced P.E. model, focusing on health and fitness, cooperation, and the building of life-long skills instead of sports and competition. The revised standards integrated findings from the neuroscience research and are aimed at helping students understand the influence of fitness and physical activity on health, academic achievement and behavior. The Task Force also made several recommendations for promoting enhanced P.E. in Illinois.^{ix} One of the recommendations was to develop and utilize metrics to assess the impact of enhanced P.E., and the report included a recommendation that schools adopt the Presidential Youth Fitness Program and its Fitnessgram measurement program. The recommendation led to continued discussions by legislators and P.E. advocates across the state, and Public Act 98-0859 was enacted to implement fitness testing in Illinois in the 2016-17 school year. (See Appendix B for a fact sheet on enhanced P.E., created by the Illinois Enhance P.E. Task Force)

The Stakeholder and Expert Task Force on Physical Education Process and Deliberations

Task Force Process and Deliberations

The Stakeholder and Expert Task Force on Physical Education was appointed by Illinois State Superintendent of Education Christopher Koch in October 2014 and met regularly from November, 2014 through March, 2015 (November 13, December 1, and December 18, 2014 and January 7, January 28, February 10, March 12, and March 27, 2015). Bylaws were adopted at the first meeting which allowed for task force member participation in person or by phone or video conference

and the group agreed to work together toward consensus throughout the process, taking votes when consensus could not be reached.

Chaired by Dr. Jean Sophie, Superintendent at Lake Bluff School District 65, the Task Force began its work by learning more about the Fitnessgram fitness testing methodologies and fitness testing options for schools, reviewing current challenges schools face in implementing physical education, and learning about current reporting mechanisms available for reporting data to ISBE. After reviewing the fitness testing options, the group went through the four required components of fitness included in Public Act 98-0859 and additional optional fitness components and made recommendations for which tests schools should use for purposes of reporting to ISBE, making alternative options available when possible.

After determining the required or recommended fitness tests, the Task Force turned to considering when and how often schools should report their fitness testing outcomes to ISBE. After hearing from an ISBE attorney about student confidentiality laws and considerations, and a careful exploration of current data reporting systems, the Task Force agreed that only aggregate data should be reported to ISBE for the purposes of this law. It made recommendations on the grade levels within elementary, middle, and high school categories for which physical fitness assessment scores should be reported to ISBE and how ISBE should report that aggregate data to the public.

Next, the Task Force considered recommendations for ensuring the validity and reliability of the fitness tests and heard from local school districts and researchers on their experiences with fitness testing in Illinois. Researchers from Illinois State University presented on data they had collected on inter-test correlations for the required fitness components and reliability of fitness testing implemented by teachers in schools in Illinois. Researchers at Lurie Children's Hospital, working with Chicago Public Schools and the Consortium to Lower Obesity in Chicago's Children, presented information on some of the reliability concerns that arose in their implementation of fitness testing in Chicago Public Schools. Based on this information and Task Force members' own experiences with fitness testing in schools, the Task Force made recommendations for ensuring validity and reliability of fitness testing across the state.

To ensure fitness testing was available to all students, no matter their level of ability, the Task Force considered the options available for adapted fitness testing and made recommendations around protocols and reporting of fitness testing for students with disabilities.

The Task Force considered the professional development needs of teachers and school administrators across Illinois to implement fitness testing in a reliable and valid way across the state. They heard about professional development opportunities available through the Illinois Association for Health, Physical Education, Recreation and Dance (IAHPERD), opportunities available in both teacher preparation programs and continuing education at Illinois State University, professional development resources and opportunities through the Illinois Principal's Association, free webinars available through the Presidential Youth Fitness program, free and paid resources available through Fitnessgram and Human Kinetics (the sales arm of Fitnessgram) for in-person and web-based professional development, and challenges and opportunities for professional development in Chicago Public Schools, the largest school district in the state.

Upon discussing all Task Force charges required in Public Act 98-0859, the Task Force reviewed its final list of recommendations to ISBE, the draft report, and voted to adopt the recommendations on March 12 and the final report on March 27, 2015.

Context of Discussion

While reviewing the fitness testing options and developing recommendations to ISBE and other stakeholders, members of the Task Force discussed a number of considerations related to the current state of physical education in Illinois:

Considerations of limited resources by schools and state

- 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 utilized free resources for schools and pre-existing data systems to minimize the burden to schools in implementing fitness testing and reporting of aggregate fitness data to ISBE. While there are both free and paid versions of Fitnessgram available, the Task Force assumed that schools would not have additional resources to implement fitness testing and made recommendations pertaining only to the free version of the Fitnessgram testing methodologies provided through the Presidential Youth Fitness Program. Additionally, the Task Force made a recommendation to the Illinois State Board of Education to convene a committee of stakeholders to look for additional funding and resources to support implementation of fitness testing, with a focus on Fitnessgram software, professional development, and general support to schools and districts for implementing the recommendations and suggestions from the Task Force.

Considerations of providing options and flexibility to schools wherever possible

- Many Illinois schools are already implementing fitness testing and the Task Force wanted to ensure that its recommendations did not preclude schools from continuing to implement fitness testing and utilizing any free or paid software programs for fitness testing data collection and reporting they already have. Therefore, the Task Force made recommendations that left as much flexibility and choice to local schools as possible (for example, allowing for alternative tests for the aerobic capacity and flexibility components of fitness) when implementing fitness testing. The Task Force also made sure that no specific recommendations were made around which software programs or data tracking systems schools should use, so that schools could continue to use what is already in place, only needing to report aggregate "healthy fitness zone" and "needs improvement zone" data to ISBE.
- The Task Force discussed the timing of the fitness tests each year and made recommendations that allowed for flexibility to local schools as to when to implement fitness testing within the academic year. While the Task Force recognized that it was optimal to do fitness testing at the beginning and end of each school year, they knew that would not be feasible in many schools. Therefore, it only recommended that school districts report one testing result (the post-test) to ISBE at the end of each academic year, allowing schools to implement testing at whatever point in the year best fits their schedules.

- The Fitnessgram battery of tests include tests for five components of fitness: aerobic capacity, muscular strength, muscular endurance, flexibility, and body composition. Due to the sensitive nature of collecting body composition data, the mixed recommendations from experts about the effectiveness of conducting body composition screening in schools, and the fact that Public Act 98-0859 does not require the testing of body composition as part of fitness testing, the Task Force decided not to make recommendations regarding body composition assessment in schools. The Task Force also recognized that many school districts have successfully implemented body composition testing, and use it effectively. Therefore, the decision on whether to administer body composition assessments will be left up to local school districts.

Considerations around data collection, student confidentiality, and legal requirements

- The Task Force worked to understand the legal requirements for ensuring student confidentiality in data collection, and attorneys, school administrators, and ISBE data experts presented information to the Task Force before it developed its recommendation on student confidentiality in fitness testing.
- The Task Force recognized that professional development will be needed to assist schools in implementing fitness testing, and made several recommendations related to the initial training needed to implement fitness testing, along with opportunities for additional professional development on how to integrate fitness testing into physical education courses. As staff change over time, it will be important for all school personnel conducting fitness testing to understand how to implement the tests with the proper protocols and how they can integrate the testing into their physical education curriculum. The Task Force worked to ensure their recommendations could be implemented with limited resources, using free training and professional development opportunities. (See Appendix C for a list of all resources discussed by the Task Force.)

Task Force recommendations:

The following are the recommendations from the Illinois Stakeholder and Expert Task Force on Physical Education:

Charge 1: Make recommendations on the minimum fitness indicators that should be reported to the Illinois State Board of Education (ISBE), including, but not limited to, a score for aerobic capacity (for grades 4 through 12); muscular strength; endurance; and flexibility.

Charge 2: Make recommendations on the grade levels within elementary, middle, and high school categories for which physical fitness assessment scores should be reported to ISBE.

Recommendation: ISBE require schools to administer annual fitness testing for the following fitness components for all grades 3-12, and to report to ISBE aggregate results for grades 5, 7 and 10 each year: Aerobic capacity (Grades 4-12 only; Recommended test: PACER test, Alternate test: Mile Run test), Flexibility (Recommended test: Back-Saver Sit and Reach test, Alternate test: Trunk lift test), Muscular endurance (Test: Curl-up test) and Muscular strength (Test: Push-up test). (See the highlighted sections of Appendices D-G for more information on these tests.)

Rationale: Fitnessgram offers different types of tests for several of the fitness components. The Task Force wanted to provide flexibility for schools to choose which tests best fit their local needs and therefore provided alternate options whenever possible. The Task Force also decided that, as the appointed expert body for fitness testing, it should make recommendations about which test would be preferred for each fitness component based on ease of administration, validity of the test, and the implications of the results for improving fitness and health. After review of each available test, and the needed equipment, time and space to perform the test, the Task Force recommended using the PACER test for aerobic capacity, while also allowing schools to use the mile run test if they preferred; the Back-Saver Sit and Reach test as the preferred flexibility test, noting that lower back pain is a significant health concern in the U.S., but giving schools the option to use the trunk lift test if they preferred; the curl-up test for muscular endurance and the push-up test for muscular strength.

As the aerobic capacity tests only result in "healthy fitness zone" calculations for students aged 10 years and up, the Task Force determined that the first required year for reporting aggregate data to ISBE will be 5th grade. The Task Force wanted to capture data for each of the three school levels: elementary, middle, and high schools, so 7th and 10th grades were chosen respectively. Regarding the year the high school scores are reported, 10th grade was determined to be the best year as 11th grade students are often involved in heavy testing for other subjects and college preparedness and 12th grade was deemed too late for being able to monitor fitness for population-level improvement initiatives.

Recommendation: Schools should use the Brockport fitness testing methodologies, when appropriate as determined by an Individualized Education Program (IEP) team, for students with disabilities. (See Appendix H for more information.)

Rationale: All students should participate in fitness testing to help them assess their current level of fitness and set individual fitness improvement goals. The Brockport fitness test protocols are available free to schools via the Presidential Youth Fitness Program and provide adapted tests for students with various disabilities. At the discretion of a student's IEP team, the person administering the tests should use an appropriate Brockport alternative to assess fitness for appropriate components of fitness.

Charge 3: Make recommendations on methods for ensuring the validity and uniformity of reported physical fitness assessment scores, including assessment administration protocols and professional development approaches for physical education teachers.

Part One: Recommendations

Recommendation: ISBE require schools to use the fitness testing protocols that were developed by Fitnessgram. (See Appendices D-F for more information.)

Rationale: Fitnessgram protocols have been tested in research and the tests are reliable and valid when the protocols are followed. While the fitness testing methodologies and protocol instructions are included in the paid version of Fitnessgram, the Presidential Youth Fitness Program has also made available the protocols for the Fitnessgram battery of tests for free on its website. Teachers and schools should refer to these resources to implement fitness testing and follow the protocols.

Recommendation: Prior to administering aerobic capacity tests, schools shall measure out the 15 or 20-meter or 1 mile mark-off point and have another staff member check the measurement for accuracy. Going forward, the school need only re-measure if the space changes or the markings deteriorate.

Rationale: In implementing the aerobic capacity fitness test, a common error has been the mis-measurement of the PACER distance or mile run distance. The Task Force recommends that each school measure out the distance they plan to use for fitness testing and then have that distance checked by a second person at the site to ensure accuracy. After the first year, the distance only needs to be re-measured if the facilities change or if the markings deteriorate.

Recommendation: All schools shall follow the Fitnessgram protocols for identifying when a student has completed the fitness test. On form breaks, the first form break shall be counted in the total number of repetitions/cycles for each test, e.g. PACER laps, push-ups, etc. The second form break signals the end of the test (no matter when the second form break occurs).

Rationale: The Fitnessgram testing methods and protocols have been evaluated for reliability and validity when carried out in a controlled setting. The best way to collect accurate data throughout the state is to ensure that all teachers are following the same protocols in testing. As is stated in the Fitnessgram protocols, the first form break a student makes shall be counted as a form break and the second form break (no matter whether it happens, immediately after the first or several repetitions/cycles later) signals the end of the test and shall not be counted in the total number of repetitions reported. Additionally, Fitnessgram protocols say that it is permissible to count the first form break but that it is important that counting the form break be consistent across all students and classes. Therefore, the Task Force determined that all schools shall count the first form break when collecting data for determining the "healthy fitness zone".

Recommendation: Every person administering fitness testing in Illinois must receive in-person or web-based Fitnessgram instruction related to administering and scoring the fitness tests for the required fitness components. ISBE shall create a compliance oversight mechanism to ensure everyone who is required to be trained has completed such training.

Rationale: As fitness testing will be required in all schools beginning in the 2016-17 school year, all school personnel (P.E. teachers, administrators, school nurses, etc.) who will be responsible for administering the fitness testing with students will need basic information on how to administer and score the tests to determine if students fall within the healthy fitness zones. (See Appendix G.) To ensure the reliability and validity of the tests across the state, all persons administering the tests must participate in in-person or web-based Fitnessgram instruction to understand the protocols. There are many free instructional resources available via the Presidential Youth Fitness Program and other stakeholders, and teachers will need to maintain a record that they have read the materials and/or participated in the training(s). At minimum, applicable personnel must read the Test Administration, Aerobic Capacity, and Muscular Strength, Endurance and Flexibility chapters from the Fitnessgram Test Administration Manual (found here: <http://www.pyfp.org/assessment/free-materials.shtml>). Additionally, they are encouraged to watch the Aerobic Capacity, and Muscular Strength, Endurance and Flexibility training videos on the Presidential Youth Fitness Program website (which can be viewed at www.pyfp.org/professional-development/videos/index.shtml). Additionally, ISBE shall develop a compliance oversight mechanism to ensure all personnel performing fitness tests have received instruction. ISBE shall work with the Regional Offices of Education to ensure compliance (potentially by linking it to the Educator Licensure Information System [ELIS]) and/or work with the Global Compliance Network, or a company like the Global Compliance Network, to create a web-based training and track teacher participation in that training.

Recommendation: ISBE require that schools integrate fitness testing into physical education classes when covering content related to Illinois State Learning Standard 20. Education about the importance of the five components of fitness (aerobic capacity, muscular strength, muscular endurance, flexibility and body composition) shall be included. Teachers should follow the Illinois Learning Standard 20 performance descriptors to identify appropriate times to integrate fitness testing into class.

Rationale: The goal of Illinois State Learning Standard 20 is for students to achieve and maintain a health-enhancing level of physical fitness based upon continual self-assessment. Education on the principles and components of health-related and skill-related fitness, assessment of individual fitness levels and goal-setting are embedded within the Fitnessgram testing process. The ISBE website includes the learning standard and related performance descriptors for this standard (currently linked here: <http://www.isbe.net/ils/pdh/pdf/goal20.pdf>).

Part Two: Suggestions. In addition to the recommendations above, the Task Force provided additional suggestions and guidance to help ensure effective implementation of fitness testing and reporting.

Suggestion: ISBE should suggest that schools include all students in annual fitness testing, whether or not they are enrolled in physical education.

Rationale: Every student should be provided the opportunity to assess, set goals and track progress related to their fitness levels.

Suggestion: Recommend that ISBE and other organizations offer professional development opportunities to administrators to help them understand fitness testing.

Rationale: Education administrators will oversee fitness testing and reporting, and ensure teachers have the tools, resources, and training necessary to implement testing. It is therefore essential that administrators receive in-person or web-based training to understand the importance of fitness testing, to enable them to provide professional development opportunities for P.E. teachers and to ensure the validity and uniformity of reported physical fitness assessment scores.

Suggestion: ISBE and other organizations should offer professional development opportunities to administrators to understand how to effectively evaluate P.E. teachers without using student fitness scores as a measure of student growth (which is prohibited by Public Act 98-0859).

Rationale: Student growth measures are a significant part of teacher evaluations as a way of measuring academic growth between two points of time. However, using fitness scores to evaluate P.E. teachers is explicitly prohibited by Public Act 98-0859 and there are many other methods for evaluating P.E. teacher effectiveness beyond fitness scores. As such, administrators must understand appropriate ways of evaluating the effectiveness of their P.E. teachers without using the fitness scores of their students. The professional development opportunities should be made available through webinars as well.

Suggestion: ISBE should work to compile all available free and paid resources and trainings related to fitness testing, and post the compendium, with links to other resources, on its website.

Rationale: School leadership and teachers will need access to all free and paid resources and training related to fitness testing. Since the ISBE website is accessible to all stakeholders, it has been designated as the optimal location to house this information.

Suggestion: ISBE should work with Presidential Youth Fitness Program and/or Fitnessgram to modify the Microsoft Excel reporting spreadsheet to meet the specific needs/requirements of Illinois.

Rationale: The free version of the Microsoft Excel reporting spreadsheet lists all available Fitnessgram tests, including tests not among the recommended and alternate tests selected by the Task Force, which may confuse teachers who plan to only implement the minimum required fitness tests. The current form also does not include information for how to calculate healthy fitness zones, which may be helpful for ensuring valid data reporting. Therefore, it is recommended that ISBE work with the Presidential Youth Fitness Program to create an Illinois-specific spreadsheet with only the recommended and alternate tests selected by the Task Force and additional columns, if feasible, that calculate the healthy fitness zones.

Suggestion: ISBE should engage an outside evaluator to evaluate the impact of the implementation of fitness testing in Illinois and track changes in aggregate fitness data over time.

Rationale: According to the Presidential Youth Fitness Program, evaluating the effectiveness of fitness testing and tracking progress over time could help Illinois: 1) Identify fitness levels among students; 2) Describe trends in fitness over time; 3) Create awareness among school staff and administrators of the need to improve physical education and steps to help increase physical activity; 4) Provide an impetus to improve policies, practices, and services to improve fitness and promote healthy behaviors among children and adolescents; 5) Identify demographic or geographic subgroups that need to improve fitness levels or are at greatest risk of low fitness; 6) Evaluate the effects of local efforts to improve fitness; and 7) Assess progress toward achieving national health objectives. The Task Force suggests that ISBE work with an evaluator to assess the impact of fitness testing in Illinois to meet the above objectives.

Suggestion: ISBE should work with P.E. supporting organizations, universities, and associations to create professional development opportunities for integrating fitness testing into the P.E. curriculum as an instructional tool and work with stakeholders to disseminate the professional development opportunities across the state.

Rationale: P.E. supporting organizations, universities and P.E. related professional associations can provide expertise and technical assistance in curriculum development for professional development around integrating fitness testing into P.E. class. Therefore, ISBE should work with these groups to create professional development opportunities (webinars, in-person trainings, etc.) and then work with them and other stakeholders to disseminate the opportunities across the state.

Suggestion: ISBE should convene a committee of stakeholders to look for additional funding and resources to support implementation of fitness testing, with a focus on Fitnessgram software, professional development, and general support to schools and districts for implementing the recommendations and suggestions from the Task Force.

Rationale: The state has limited resources to assist schools in implementing fitness testing and so the Task Force recommends that ISBE convene a committee of stakeholders to identify additional funding and resource opportunities to support fitness testing across the state. Additionally, the Task Force assumed there would be no funding for the purchase of paid Fitnessgram software for all schools. Therefore, the fitness testing recommendations outlined in this report utilize only free resources provided through the Presidential Youth Fitness Program website. There are purchasable, more advanced, versions of Fitnessgram software and other components (such as technical assistance, materials, tests to certify administrators, etc.) that would greatly enhance the program and better enable schools to implement fitness testing in a meaningful way. Task Force members are interested in conducting outreach to identify funding sources to support Fitnessgram software implementation statewide, as well as additional funding for professional development for fitness testing. Having a state agency, like ISBE, convene the committee will create a high-profile platform for asking organizations, like professional sports teams, hospitals, and insurance companies, to consider supporting the purchasing of Fitnessgram software for all schools in Illinois. ISBE should form the committee with stakeholders who have connections to foundations, professional sports teams, hospitals, insurance companies, and other potential funders.

Charge 4: Make recommendations on how often physical fitness assessment scores should be reported to the State Board of Education.

Part One: Recommendation

Recommendation: ISBE require schools report the number of students tested (using recommended tests or Brockport alternatives) and the number meeting the "healthy fitness zone" and "needs improvement" categories for each of the required fitness testing components for grades 5, 7 and 10 at the end of each academic year. Each school will submit its aggregate data to its district administrator and he/she will submit that aggregate data for each school and the district as a whole to ISBE yearly via the ISBE Web Application Security (IWAS) system.

Rationale: For the purposes of state-level monitoring of fitness, which can be used to track progress over time and identify fitness and health needs across the state, ISBE needs only aggregate data from schools, not individual student information. As district administrators are used to using the IWAS system for reporting, ISBE will create a data input form in IWAS for the reporting of aggregate fitness data by school districts for each school in their district. Schools shall report the number of students tested, the number meeting the "healthy fitness zone," and the number in the "needs improvement zone." The ISBE IWAS form will automatically calculate the percentages of students in those zones and present an error form if the percentages for the two zones don't equal 100 percent, adding a quality-check measure to the data reporting system. (See Appendix G for more information on the zones.)

Part Two: Suggestion. In addition to the recommendation above, the Task Force provided an additional suggestion that would help with student-goal setting and improvement over time.

Suggestion: ISBE should suggest that schools do pre-and post-fitness tests with students each year (or semester, as applicable). Post-test results shall be used for reporting scores to ISBE.

Rationale: Recommending both pre-and post-testing (two fitness tests in a year) will enable students to set goals and improve individual fitness levels. For example, a pre-test could be given in the fall to support student goal-setting and assist with them setting an individual fitness plan that they could work on throughout the academic year. The post-test occurring in the spring would allow them to reflect on their progress.

Charge 5: Make recommendations on the demographic information that should accompany the scores, including, but not limited to, grade and gender.

Recommendation: ISBE should not require any demographic information accompany the scores when reported in aggregate to ISBE. However, ISBE should explore the feasibility and utility of collecting demographic and achievement information in conjunction with fitness scores for potential longer-term enhancements to the fitness testing and reporting requirement. To that end, ISBE should undertake a pilot data collection program with school districts that volunteer to participate.

Rationale: Because schools are reporting fitness scores/zones in the aggregate, linked individual student data will not be reported to ISBE and therefore no additional demographic information is available to accompany the fitness scores. The Task Force identified a number of concerns regarding the reporting of individual data and related demographic information to ISBE, such as concerns about individuals being identifiable, and the cost and reporting burden on schools.

However, the Task Force encourages ISBE to launch a pilot program with a voluntary subset of schools to explore collecting and making correlations between demographic information and fitness levels, and academic achievement, attendance and behavior. The goal of the pilot program is to 1) identify the needed capabilities and challenges of collecting scores and related student level data; and 2) analyze the fitness data in relation to the student-level information to determine whether such correlations provide useful information to support targeted interventions and the value of fitness testing in relation to achievement and discipline. The demographic information collected should include gender, race/ethnicity, low-income indicators and the percentage of students that fall into the "healthy fitness zone" and "needs improvement" categories for each of the required fitness testing components. The information should be collected from pre-and post-testing results, when available, and can include exploration of total fitness scores (for example, percentage of students achieving one or more healthy fitness zones, two or more healthy fitness zones, etc.). This pilot program would require the participating school districts to link fitness testing outcomes with other individual student data prior to reporting the scores to ISBE. The Task Force also encourages schools to collect and utilize more detailed demographic data to identify gaps and opportunities for improvement among various groups within the school population as well as to identify potential connections between fitness and other school goals, such as academic achievement and behavior.

Charge 6: Make recommendations on the development of protocols regarding the protection of students' confidentiality and individual information and identifiers.

Recommendation: ISBE require that schools have procedures for protecting student data and confidentiality that comply with all related state and federal laws.

Rationale: Schools currently must follow federal (Health Insurance Portability and Accountability Act [HIPPA] and Family Educational Rights and Privacy Act [FERPA]) and state laws related to student data and confidentiality, and this applies to individual fitness data collected in P.E. class as well. With state laws likely to change and each school implementing the laws in ways that best meet their local needs, the Task Force determined that ISBE shall require schools to ensure they have procedures in place for protecting student data and confidentiality related to fitness testing scores. All data collected by a school and district is aggregated before it is sent to ISBE, but local measures must be taken to ensure confidentiality of the data throughout and after fitness testing has been administered.

Charge 7: Make recommendations on how physical fitness assessment data should be reported by the State Board of Education to the public, including potential correlations with student academic achievement, attendance, and discipline data and other recommended uses of the reported data.

Part One: Recommendations

Recommendation: At a minimum, ISBE report the "healthy fitness zone" results for each fitness component at each school and district on the ISBE website, annually, for grades 5, 7, and 10.

Rationale: ISBE regularly posts information on its website and aggregate fitness testing results shall be posted each year on the ISBE websites for the current 5th, 7th, and 10th grade classes. This will allow parents, the public, and health and physical education advocates to regularly monitor fitness levels over time.

Recommendation: ISBE include "healthy fitness zone" results on the School Report Card.

Rationale: Providing information on the School Report Card about the percentage of students that fall in the "healthy fitness zone" for the tested fitness components would provide parents and the public with important information on the physical fitness of the student population and offer a starting point for more community education on the importance of proper nutrition and physical activity. While the scores will be required to be posted on the ISBE website, the School Report Card is more regularly viewed by the public and can provide a reminder about the importance of student fitness and health in relation to academic achievement. With research showing a correlation between physical fitness and academic achievement, making this data available on the School Report Card will show that physical fitness is just as important as achievement scores.

Part Two: Suggestion. In addition to the recommendation above, the Task Force provided a suggestion related to reporting fitness testing results to the public.

Suggestion: ISBE should work with universities to develop methodologies and tools to correlate fitness scores with other available data, like attendance, academic performance, behavior, etc. Local school districts can use the methodologies and tools to track progress at a local level and determine a plan of action for improving P.E. programs in order to create the most benefits for academics, behavior, and health.

Rationale: As schools collect individual student fitness data and several other individual-level student data, they may have the capability of linking the student data from fitness tests with other data sets, like their attendance and academic outcomes data. Scientific research has established correlations between improved fitness with improved academic achievement, behavior, and health, and linking this data together at the local level can help schools track the progress of their programs over time. ISBE should work with universities to develop methodologies and tools to ensure correlations are made accurately and the results used properly to describe correlations. Schools can use the data to help prove the value of P.E. programs for student health, academic achievement and behavior and they can identify potential opportunities to use enhanced P.E. programs in a way that boosts academic achievement and behavior for students (for example, at Naperville Central High School, placing

students who were struggling in math and literacy in high-quality, enhanced P.E. classes prior to their math or reading classes boosted their academic achievement in those areas). For additional information on how these items correlate, visit the resources created by the Illinois Enhance P.E. Task Force here: <http://www.isbe.net/EPE/html/EPETF.htm>

Task Force Recommendations Summary Chart:

Recommended Requirements	
A) Testing	
1	The Illinois State Board of Education (ISBE) require schools to administer annual fitness testing for the following fitness components for all grades 3-12, and to report to ISBE aggregate results for grades 5, 7 and 10 each year: Aerobic capacity (Grades 4-12 only; Recommended test: PACER test, Alternate test: Mile Run test), Flexibility (Recommended test: Back-Saver Sit and Reach test, Alternate test: Trunk lift test), Muscular endurance (Test: Curl-up test) and Muscular strength (Test: Push-up test).
2	Schools should use the Brockport fitness testing methodologies, when appropriate as determined by an Individualized Education Program (IEP) team, for students with disabilities.
3	ISBE require schools to use the fitness testing protocols that were developed by Fitnessgram.
3a	Prior to administering aerobic capacity tests, schools should measure out the 15 or 20-meter or 1 mile mark-off point and have another staff member check the measurement for accuracy. Going forward, the school need only re-measure if the space changes or the markings deteriorate.
3b	All schools should follow the Fitnessgram protocols for identifying when a student has completed the fitness test. On form breaks, the first form break should be counted in the total number of repetitions/cycles for each test, e.g. PACER laps, push-ups, etc. The second form break signals the end of the test (no matter when the second form break occurs).
4	ISBE suggest that schools integrate fitness testing into physical education classes when covering content related to Illinois State Learning Standard 20. Education about the importance of the five components of fitness (aerobic capacity, muscular strength, muscular endurance, flexibility and body composition) should be included. Teachers should follow the Illinois Learning Standard 20 performance descriptors to identify appropriate times to integrate fitness testing into class.
B) Reporting	

5	ISBE require schools report the number of students tested (using recommended tests or Brockport alternatives) and the number meeting the "healthy fitness zone" and "needs improvement" categories for each of the required fitness testing components for grades 5, 7 and 10 at the end of each academic year. Each school will submit its aggregate data to its district administrator and he/she will submit that aggregate data for each school and the district as a whole to ISBE yearly via the ISBE Web Application Security (IWAS) system.
6	ISBE should not require any demographic information accompany the scores when reported in aggregate to ISBE. However, ISBE should explore the feasibility and utility of collecting demographic and achievement information in conjunction with fitness scores for potential longer-term enhancements to the fitness testing and reporting requirement. To that end, ISBE should undertake a pilot data collection program with school districts that volunteer to participate.
7	At a minimum, ISBE report the "healthy fitness zone" results for each fitness component at each school and district on the ISBE website, annually, for grades 5, 7, and 10.
8	ISBE include "healthy fitness zone" results on the School Report Card.
C) Confidentiality	
9	ISBE require that schools have procedures for protecting student data and confidentiality that comply with all related state and federal laws.
D) Professional Development	
10	Every person administering fitness testing in Illinois must receive in-person or web-based Fitnessgram instruction related to administering and scoring the fitness tests for the required fitness components. ISBE shall create a compliance oversight mechanism to ensure everyone required has completed the training.

Suggestions to Schools/Districts	
A) Testing	
11	ISBE suggest that schools include all students in annual fitness testing, whether or not they are enrolled in physical education.
12	ISBE suggest schools do pre-and post-fitness tests with students each year (or semester, as applicable). Post-test results shall be used for reporting scores to ISBE.

B) Reporting	
13	ISBE work with universities to develop methodologies and tools to correlate fitness scores with other available data, like attendance, academic performance, behavior, etc. Local school districts can use the methodologies and tools to track progress at a local level and determine a plan of action for improving P.E. programs in order to create the most benefits for academics, behavior, and health.
C) Professional Development	
14	Recommend that ISBE and other organizations offer professional development opportunities to administrators to understand fitness testing and how to effectively evaluate P.E. teachers without using student fitness scores as a measure of student growth (which is prohibited by Public Act 98-0859).
15	ISBE should work with P.E. supporting organizations, universities, and associations to develop professional development opportunities for integrating fitness testing into the P.E. curriculum as an instructional tool and work with stakeholders to disseminate the professional development opportunities across the state.
16	ISBE should work to compile all available free and paid resources and trainings related to fitness testing, and post the compendium, with links to other resources, on its website.

Other	
17	ISBE should convene a committee of stakeholders to look for additional funding and resources to support implementation of fitness testing, with a focus on Fitnessgram software, professional development, and general support to schools and districts for implementing the recommendations and suggestions from the Task Force.
18	ISBE should engage an outside evaluator to evaluate the impact of the implementation of fitness testing in Illinois and track changes in aggregate fitness data over time.
19	ISBE should work with Presidential Youth Fitness Program and/or Fitnessgram to modify the Microsoft Excel reporting spreadsheet to meet the specific needs/requirements of Illinois.

Summary:

The Stakeholder and Expert Task Force on Physical Education brought together a diverse array of stakeholders from throughout Illinois who value the health of Illinois students. The Task Force's recommendations reflect its understanding that administering physical fitness assessments is an evidence-based way to help students achieve and maintain a health-enhancing level of physical fitness. Furthermore, there is a rich body of evidence linking increased physical activity with improved academic and behavioral outcomes. The Task Force understands that schools are struggling with budgetary constraints and other demands as they try to meet a variety of mandates with limited funds and staff, and, therefore, utilized free resources for schools and pre-existing data systems to minimize the burden to schools in implementing fitness testing and reporting data to ISBE. The Task Force provided flexibility and choice to local school districts where possible to enable them to administer testing in the way that works best for them, as well as to be careful not to preclude any existing testing and data collection in progress. At the same time, uniformity in implementation is critical to ensuring the reliability and validity of the results, so the Task Force made recommendations to provide training and professional development opportunities around test administration. Finally, the Task Force made recommendations to ensure student confidentiality in data collection. The Task Force encourages the implementation of these recommendations for the benefit of all Illinois students.

Acknowledgements:

The leadership of the Task Force's chair, Dr. Jean Sophie, was instrumental in defining the direction of the Task Force and helping to find common ground among all members. Staff from the Illinois State Board of Education, including Shawn Backs and Mark Haller, 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 provided by the Illinois State Board of Education. Janna Simon and Sarah Chusid of the Illinois Public Health Institute provided support for the Task Force.

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Public Act 098-0859

HB5397 Enrolled

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AN ACT concerning education.

WHEREAS, Regular physical activity is associated with a healthier, longer life and a lower risk of cardiovascular disease, high blood pressure, diabetes, obesity, and some cancers; and

WHEREAS, Physical activity offers young people many health benefits, including improved aerobic endurance and muscular strength, better weight control, and the opportunity to build lean muscle and bone mass and reduce fat; and

WHEREAS, Physically fit children have higher scholastic achievement, better classroom behavior, a greater ability to focus, and less absenteeism than their physically unfit counterparts; and

WHEREAS, One important way to stop this rise in childhood obesity is by establishing lifelong physical activity habits with strong physical education programs and regular physical activity opportunities in our nation's schools, both during and outside of the regular school day; and

WHEREAS, The Enhance Physical Education Task Force, established by Public Act 97-1102, recommended enhancing physical education to increase the amount of time students spend in moderate to vigorous physical activity, with an

emphasis on fitness, skill-building, and cooperation;
therefore

**Be it enacted by the People of the State of Illinois,
represented in the General Assembly:**

Section 5. The School Code is amended by adding Section
27-6.5 as follows:

(105 ILCS 5/27-6.5 new)

Sec. 27-6.5. Physical fitness assessments in schools.

(a) As used in this Section, "physical fitness assessment"
means a series of assessments to measure aerobic capacity, body
composition, muscular strength, muscular endurance, and
flexibility.

(b) To measure the effectiveness of State Goal 20 of the
Illinois Learning Standards for Physical Development and
Health, beginning with the 2016-2017 school year and every
school year thereafter, the State Board of Education shall
require all public schools to use a scientifically-based,
health-related physical fitness assessment for grades 3
through 12 and periodically report fitness information to the
State Board of Education, as set forth in subsections (c) and
(e) of this Section, to assess student fitness indicators.

Public schools shall integrate health-related fitness
testing into the curriculum as an instructional tool, except in

grades before the 3rd grade. Fitness tests must be appropriate to students' developmental levels and physical abilities. The testing must be used to teach students how to assess their fitness levels, set goals for improvement, and monitor progress in reaching their goals. Fitness scores shall not be used for grading students or evaluating teachers.

(c) On or before October 1, 2014, the State Superintendent of Education shall appoint a 15-member stakeholder and expert task force, including members representing organizations that represent physical education teachers, school officials, principals, health promotion and disease prevention advocates and experts, school health advocates and experts, and other experts with operational and academic expertise in the measurement of fitness. The task force shall make recommendations to the State Board of Education on the following:

(1) methods for ensuring the validity and uniformity of reported physical fitness assessment scores, including assessment administration protocols and professional development approaches for physical education teachers;

(2) how often physical fitness assessment scores should be reported to the State Board of Education;

(3) the grade levels within elementary, middle, and high school categories for which physical fitness assessment scores should be reported to the State Board of Education;

(4) the minimum fitness indicators that should be reported to the State Board of Education, including, but not limited to, a score for aerobic capacity (for grades 4 through 12); muscular strength; endurance; and flexibility;

(5) the demographic information that should accompany the scores, including, but not limited to, grade and gender;

(6) the development of protocols regarding the protection of students' confidentiality and individual information and identifiers; and

(7) how physical fitness assessment data should be reported by the State Board of Education to the public, including potential correlations with student academic achievement, attendance, and discipline data and other recommended uses of the reported data.

The State Board of Education shall provide administrative and other support to the task force.

The task force shall submit its recommendations on physical fitness assessments on or before April 1, 2015. The task force may also recommend methods for assessing student progress on State Goals 19 and 21 through 24 of the Illinois Learning Standards for Physical Development and Health. The task force is dissolved on April 30, 2015.

The provisions of this subsection (c), other than this sentence, are inoperative after March 31, 2016.

(d) On or before December 31, 2015, the State Board of Education shall use the recommendations of the task force under subsection (c) of this Section to adopt rules for the implementation of physical fitness assessments by each public school for the 2016-2017 school year and every school year thereafter.

(e) On or before September 1, 2016, the State Board of Education shall adopt rules for data submission by school districts and develop a system for collecting and reporting the aggregated fitness information from the physical fitness assessments. This system shall also support the collection of data from school districts that use a fitness testing software program.

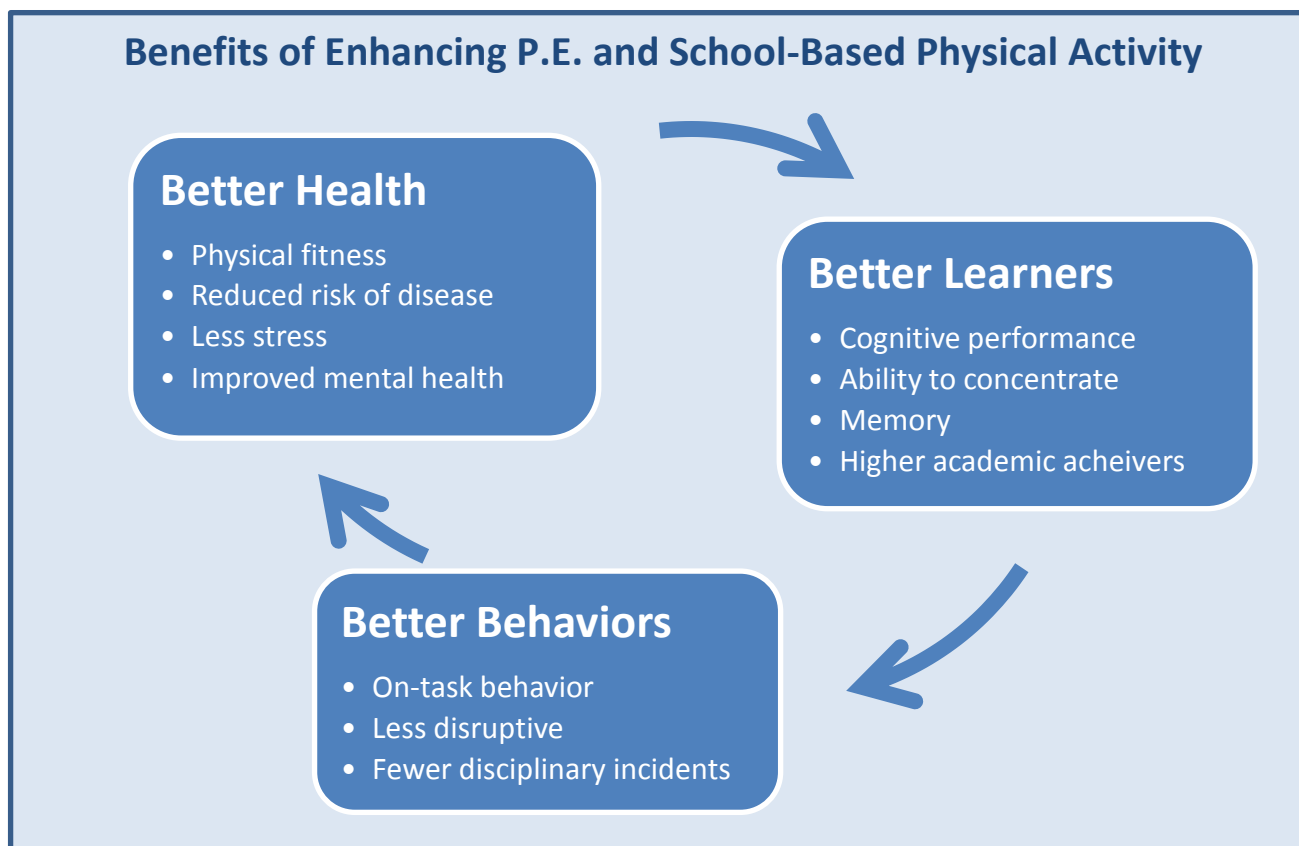
(f) School districts may report the aggregate findings of physical fitness assessments by grade level and school to parents and members of the community through typical communication channels, such as Internet websites, school newsletters, school board reports, and presentations. Districts may also provide individual fitness assessment reports to students' parents.

(g) Nothing in this Section precludes schools from implementing a physical fitness assessment before the 2016-2017 school year or from implementing more robust forms of a physical fitness assessment.

Section 99. Effective date. This Act takes effect upon becoming law.

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.



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 emphasize 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

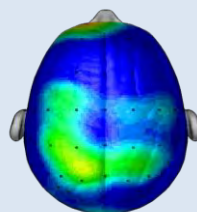
Studies have shown time and again that there is a positive association between fitness and academic achievement, as measured by standardized tests and improved grades. This relationship has been observed in China, Illinois, Massachusetts, California, and Texas.^{9, 10,}

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’](#).

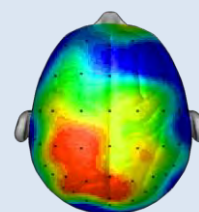
Cognitive Effects of Exercise On Preadolescent Children

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

^{11, 12, 13, 14} Higher fit children have been found to have enhanced math and reading abilities.¹⁵

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

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

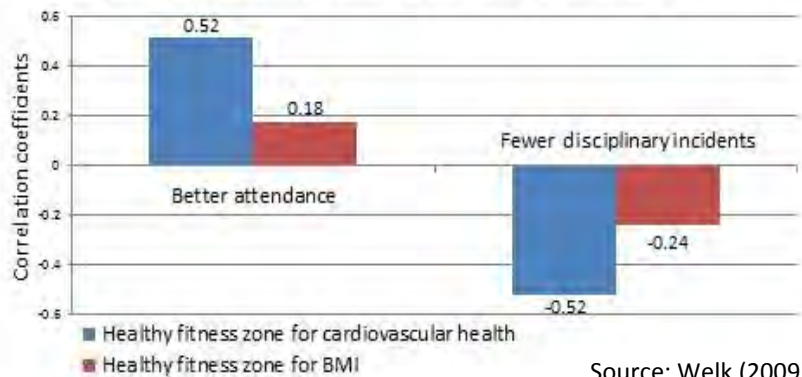
What does the research say?

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

Student Fitness and BMI Levels Correlate with Attendance and Disciplinary Incidents



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 the 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 of 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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Additional Resources Discussed by Task Force

Presidential Youth Fitness Program Resources:

[Fitnessgram Score Sheet](#)

[Monitoring student fitness levels](#)

Webinar: [Novice Teachers: Implementing the Presidential Youth Fitness Program](#)

Fitnessgram methodology training videos

Fitnessgram video: [Aerobic Capacity](#). An overview of aerobic capacity – the definition, how it is influenced, and how it can be measured.

Fitnessgram video: [Muscular Strength, Endurance, and Flexibility](#). An overview teachers can use in their classroom to help students comprehend what muscular strength, endurance, and flexibility means and how it relates to their overall health and well-being.

Training modules housed on the California Physical Fitness Test (PFT) website (site hosted by the San Joaquin County Office of Education for the California Department of Education).

These modules provide instruction on administering the Fitnessgram tests for the following components of fitness:

- 1) [The PACER Test](#)
- 2) [The Mile Run Test](#)
- 3) [The Curl-Up Test](#)
- 4) [The Trunk Lift Test](#)
- 5) [The Push-Up Test](#)
- 6) [The Back-Saver Sit and Reach Test](#)

Enhanced P.E. Background Information

[Illinois Enhanced Physical Education Strategic plan](#)

[Illinois Enhance Physical Education Task Force Executive Summary](#)

Professional Development Opportunities

[Illinois Association of Health, Physical Education, Recreation and Dance Enhanced P.E. Web page](#)

Illinois State University- P.E. Technology Camp, offered annually in the summer. For more information, contact Dr. Dale Brown, Professor, Illinois State University, at dbrown@ilstu.edu.

Additional Resources Discussed by Task Force, continued

Illinois State University graduate level course on integrating fitness testing into PE: KNR 422: Promoting Physical Activity and Fitness Education

Course Overview: Study of current trends associated with youth physical activity and fitness in various school and community settings through the examination and critical analysis of research. Students will improve their knowledge of physical activity and fitness concepts, fitness assessments, design learning activities, and develop strategies to teach lifetime physical activity in various school and community settings to improve physical activity and fitness levels of youth.

Link to graduate program website: http://kinrec.illinoisstate.edu/graduate/teacher_education/

National Association for Sport and Physical Education Resource

[Appropriate uses of fitness measurement](#)

Body Composition Assessment

[Body Mass Index Measurement in Schools](#) (a publication of the Centers for Disease Control and Prevention)

FITNESSGRAM TEST ADMINISTRATION

Please note: The recommended and alternate tests in Illinois are as follows: Aerobic capacity: Recommended test: PACER test, Alternate test: Mile Run test, Flexibility: Recommended test: Back-Saver Sit and Reach test, Alternate test: Trunk lift test , Muscular endurance Test: Curl-up test and Muscular strength Test: Push-up test

The content corresponding to these tests has been highlighted.

This chapter describes basic considerations for administering and scoring fitness test items from the FITNESSGRAM battery in an efficient and organized manner. Table 4.1 provides a summary list of the test items.

Considerations for Testing Primary Grades

The major emphasis when testing children in grades K-3 should be on enjoyment and instructions on proper technique. It is important at this age not to focus on performance level. Performance standards are not available for the aerobic capacity test items for students younger than 10 years of age. While standards are provided for other test items for primary grade children, you are strongly encouraged not to emphasize performance level and test results.

Considerations for Safety

The test items used in *FITNESSGRAM* have been administered to millions of students and have been shown to be very safe. The prudent teacher, however, will recognize that with any strenuous physical activity there is always the possibility that incidents may occur.

Before administering any test items, be aware of the potential health problems of all students in your classes. For example, it is possible for a student to have a congenital heart condition that may require special consideration during the administration of an aerobic capacity measure or other test items. Maximizing the safety of all students should be the primary objective.

Your school district or agency should have established policies related to medical information, medical records, and medical clearance for activity. It is important that you be aware of these policies and that you follow them strictly.

It is also important that students be conditioned adequately before taking the test. This conditioning period is especially important during the fall of the year and in hotter climates.

TABLE 4.1 **FITNESSGRAM Test Items**

Aerobic capacity	Body composition	Muscular strength, endurance, and flexibility			
		Abdominal strength and endurance	Trunk extensor strength and flexibility	Upper body strength and endurance	Flexibility
The PACER*	Skinfold measurements	Curl-up*	Trunk lift*	90° push-up*	Back-saver sit and reach
One-mile run	Body mass index			Modified pull-up	Shoulder stretch
The walk test (secondary students)	Bioelectric impedance analyzers			Flexed arm hang	

*Recommended test.

Considerations for Testing Special Populations

FITNESSGRAM is intended for use with students who do not have disabilities. You will, in many situations, also be working with students with disabilities. If certain physical fitness components are deemed important as a dimension in education, they are equally important for all students. We suggest, therefore, that teachers needing assistance in developing tasks for an assessment should consult one of these excellent resources: *Brockport Physical Fitness Test Kit*, *The Brockport Physical Fitness Test Manual*, and *The Brockport Physical Fitness Training Guide* (Winnick and Short, 1999). The software program with these materials has been designed so that you can easily share student data with the FITNESSGRAM/ACTIVITYGRAM software.

Need Additional Information?

To order the Brockport or FITNESSGRAM resources, call Human Kinetics at 800-747-4457 ext 5555, or order online at www.HumanKinetics.com. Visit www.fitnessgram.net for complete information about the assessment.

AEROBIC CAPACITY

Please note: The recommended and alternate tests for Aerobic Capacity in Illinois are as follows:

Recommended test: PACER test, Alternate test: Mile Run test.

The content corresponding to these tests has been highlighted.

Aerobic capacity is perhaps the most important component of any fitness program. Research indicates that acceptable levels of aerobic capacity are associated with a reduced risk of high blood pressure, coronary heart disease, obesity, diabetes, some forms of cancer, and other health problems in adults. The evidence documenting the health benefits of physical activity has been well described, and this information was the basis for the development of the U.S. physical activity guidelines and other similar public health recommendations for physical activity.

Many terms have been used to describe this dimension of physical fitness, including cardiovascular fitness, cardiorespiratory fitness, cardiorespiratory endurance, aerobic fitness, aerobic work capacity, and physical working capacity. Although defined somewhat differently, these terms can generally be considered synonymous with aerobic capacity. A laboratory measure of maximal oxygen uptake ($\dot{V}O_2\text{max}$) is generally considered to be the best measure of aerobic capacity. Because differences in body size can influence oxygen uptake, aerobic capacity is typically expressed relative to body weight (i.e., milliliters O_2 consumed per kilogram of body weight per minute, or $\text{ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$).

The *FITNESSGRAM* program provides three field tests of aerobic capacity (PACER, one-mile run/walk, and walk test). Beginning with version 8.6 and version 9 of the *FITNESSGRAM* software, estimates of aerobic capacity are reported as $\dot{V}O_2\text{max}$ and expressed as $\text{ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$. For the one-mile run/walk and the walk test, calculation of aerobic capacity requires the use of BMI (which is calculated from height and weight). Therefore, entry of height and weight are required in order to estimate $\dot{V}O_2\text{max}$ when these tests are used. High test-retest reliability and accurate estimates of measured $\dot{V}O_2\text{max}$ have been demonstrated for all measures of aerobic capacity. The following sections provide guidelines for administering and scoring all three tests.

Need Additional Resources?

For complete information about *FITNESSGRAM*, visit www.fitnessgram.net. To order the *FITNESSGRAM* software and related resources, call Human Kinetics at 800-747-4457, or order online at www.HumanKinetics.com. To review the science behind the assessment, please read the Reference Guide, which is available at no cost at www.fitnessgram.net.

Overview of the FITNESSGRAM Aerobic Capacity Standards

The FITNESSGRAM Scientific Advisory Board has worked to ensure that all of the assessments in fitness are scored using health-related standards. The availability of nationally representative data on fitness from the National Health and Nutrition Examination Survey (NHANES) made it possible to develop objective health standards for aerobic fitness when expressed as $\dot{V}O_2$ max. Detailed information on the development of the standards is provided in the Reference Guide and in a comprehensive research supplement published in the *American Journal of Preventive Medicine*. Several key points associated with the aerobic fitness standards are summarized here:

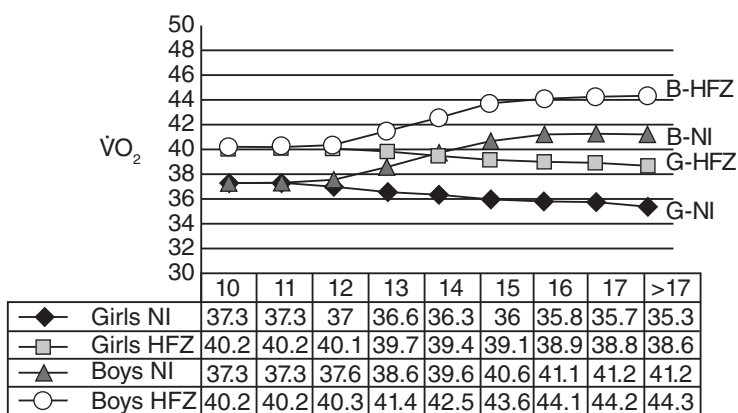
1. Estimates of aerobic capacity are expressed as $\dot{V}O_2$ max in $\text{ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$, regardless of what assessment was used. The $\dot{V}O_2$ max is estimated from equations developed specifically for the PACER or one-mile run/walk. For the one-mile run/walk, time, age, sex, height, and weight need to be entered into the program in order to receive an estimate of $\dot{V}O_2$ max. For the PACER, laps completed, age, and sex are required in order to receive an estimate of $\dot{V}O_2$ max.

2. The health-related standards used to evaluate aerobic capacity are age and sex specific and also take into account normal changes during growth and maturation. The values for boys increase with age, while the values for girls decrease with age. These changes do not imply higher expectations for boys and lower expectations for girls. The changes are reflective of the natural developmental trends for boys and girls (boys gain muscle with age while girls tend to gain body fat through adolescence). The lines actually reflect the same relative level of fitness across age for both boys and girls.

3. The new standards are equivalent for 10- and 11-year-old boys and girls. From a developmental perspective, boys and girls are more similar than different at these young ages. As they mature, boys and girls follow different developmental trends, so the fitness standards would follow these tracks.

4. The new standards allow classification into three unique zones (rather than two) with the use of two parallel lines. Students who have scores above the top line for their sex would be classified in the **Healthy Fitness Zone**. A child above this line would be classified as having sufficient fitness for good health. Students who have scores between the two lines would be classified in the **Needs Improvement** and receive a message that they should work to reach the Healthy Fitness Zone. Students below the bottom line would be classified in the **Needs Improvement—Health Risk** zone. This lowest fitness zone would provide youth and parents with an appropriate warning that this low level of fitness increases health risks. The use of three distinct fitness zones makes it possible to provide more specific information about health and potential health risks. Students in the HFZ are provided with feedback to maintain their fitness, while students in the Needs Improvement zone are appropriately warned about possible health risks if their fitness remains low.

Comparison of Boys and Girls



PACER

⇒ Recommended

The PACER (Progressive Aerobic Cardiovascular Endurance Run) is the default aerobic capacity test in *FITNESSGRAM*. The PACER is a multistage fitness test adapted from the 20-meter shuttle run test published by Leger and Lambert (1982) and revised in 1988 (Leger et al.). The test is progressive in intensity—it is easy at the beginning and gets more difficult at the end. The progressive nature of the test provides a built-in warm-up and helps children to pace themselves. The test has also been set to music to create a valid, fun alternative to the customary distance run test for measuring aerobic capacity.

The PACER is recommended for all ages, but its use is strongly recommended for participants in grades K-3. The PACER is recommended for a number of reasons, including the following:

- All students are more likely to have a positive experience in performing the PACER.
- The PACER helps students learn the skill of pacing.
- Students who have a poorer performance will finish first and not be subjected to the embarrassment of being the last person to complete the test.

When you are administering the test to these younger children, the emphasis should be on allowing the children to have a good time while learning how to take this test and pace themselves. Allow children to continue to run as long as they wish and as long as they are still enjoying the activity. The main goal for young children is to allow them the opportunity to experience the assessment and to enjoy it.

Test Objective

The objective is to run as long as possible with continuous movement back and forth across a 20-meter space at a specified pace that gets faster each minute. A 15-meter version of the PACER test has been developed for teachers with smaller-sized facilities.

Equipment and Facilities

Administering the PACER requires a flat, nonslip surface at least 20 meters long, CD player with adequate volume, CD with PACER cadence (available for purchase from Human Kinetics), measuring tape, marker cones, pencil, and

a score sheet. Students should wear shoes with nonslip soles. Plan for each student to have a 40- to 60-inch-wide space for run-ning. An outdoor area can be used for this test if you do not have adequate indoor space. There should be a designated area for runners who have finished and for scorekeepers. You may want to paint lines or draw chalk lines to assist students in running in a straight line.

Note: Because many gyms are not 20 meters in length, an alternative 15-meter PACER test is now available. The procedures described as follows are the same for the 15-meter distance, but an alternative cadence and scoring sheet are required for tracking the number of laps. The 15-meter PACER test is for use only in elementary schools.

Test Instructions

- Mark the 20-meter (21-yard, 32-inch) course with marker cones to divide lanes and use a tape or chalk line at each end.
- Make copies of the score sheet for each group of students to be tested.
- Before test day, allow students to listen to several minutes of the cadence CD so that they know what to expect. Students should then be allowed at least two practice sessions.
- Allow students to select a partner. Have students who are being tested line up behind the start line.
- Each student being tested should run across the 20-meter distance and touch the line with a foot by the time the beep sounds. The student should take full weight on the foot that is touching the line. At the sound of the beep, the student turns around and runs back to the other end. If some students get to the line before the beep, they must wait for the beep before running the other direction. Students continue in this manner until they fail to reach the line before the beep for the second time.

(continued)

PACER (continued)

- A single beep will sound at the end of the time for each lap. A triple beep sounds at the end of each minute. The triple beep serves the same function as the single beep and also alerts the runners that the pace will get faster. Inform students that when the triple beep sounds, they should not stop but should continue the test by turning and running toward the other end of the area.
- Calculation of aerobic capacity requires a score of at least 10 laps (20-meter version).

When to Stop

The first time a student does not reach the line by the time of the beep, the student stops where he or she is and reverses direction immediately, attempting to get back on pace. The test is completed for a student the next time (second time) he or she fails to reach the line by the time of the beep (the two misses do not have to be consecutive; the test is over after two total misses). Students just completing the test should continue to walk and stretch in the designated cool-down area.

Note: A student who remains at one end of the testing area through two beeps (does not run to the other end and back) should be scored as having two misses and the test is over.

Scoring

In the PACER test, a lap is one 20-meter distance (from one end to the other). The scorer records the lap number (crossing off each lap number) on a PACER score sheet. The recorded score is the total number of laps completed by the student. For ease in administration, it is permissible to count the first miss (not making the line by the time of the beep). It is important to be consistent with all of the students and classes in the method used for counting.

An alternative scoring method is available. This method does not eliminate students when they miss their second beep (Schiemer, 1996). Using the PACER score sheet, establish two different symbols to be used in recording, such as a star for making the line by the time of the beep and a tri-

angle for not making the line. The scorer then draws a star in the circle when the runner makes the line by the time of the beep and a triangle when the runner fails to make the line by the time of the beep, simply making a record of what occurs. The runners can continue to participate until the leader stops the music or until they voluntarily stop running. To determine the score, find the second triangle (or whatever symbol was used). The number associated with the preceding star is the score.

Regardless of the method, the scoring of the PACER test is based on the number of laps completed. It is important to count each individual 15-meter or 20-meter distance as a lap (rather than based on a down-and-back count for the laps).

Criterion standards are not available for students in grades K-3. The object of the test for these younger students is simply to have them participate in the testing process and to complete as many laps as possible. The main goal is to provide the students with the opportunity to experience the PACER and to have a positive experience with the assessment. Nine-year-olds in grade 4 will receive a score, and it will be evaluated against a criterion standard. All 10-year-old students receive a score regardless of grade level.

Suggestions for Test Administration

■ Both PACER CDs contain 21 levels (1 level per minute for 21 minutes). During the first minute, the 20-meter version allows 9 seconds to run the distance; the 15-meter version allows 6.75 seconds. The lap time decreases by approximately half a second at each successive level. Make certain that students have practiced and understand that the speed will increase each minute.

■ A single beep indicates the end of a lap (one 20-meter distance). The students run from one end to the other between each beep. Caution students not to begin too fast. The beginning speed is very slow. Nine seconds is allowed for running each 20-meter lap during the first minute

(continued)

PACER (continued)

FITNESSGRAM

The PACER Individual Score Sheet A

Teacher _____ Class period _____ Date _____

Lap = one 20-meter length

Level	Laps													
1	1	2	3	4	5	6	7							
2	8	9	10	11	12	13	14	15						
3	16	17	18	19	20	21	22	23						
4	24	25	26	27	28	29	30	31	32					
5	33	34	35	36	37	38	39	40	41					
6	42	43	44	45	46	47	48	49	50	51				
7	52	53	54	55	56	57	58	59	60	61				
8	62	63	64	65	66	67	68	69	70	71	72			
9	73	74	75	76	77	78	79	80	81	82	83			
10	84	85	86	87	88	89	90	91	92	93	94			
11	95	96	97	98	99	100	101	102	103	104	105	106		
12	107	108	109	110	111	112	113	114	115	116	117	118		
13	119	120	121	122	123	124	125	126	127	128	129	130	131	
14	132	133	134	135	136	137	138	139	140	141	142	143	144	
15	145	146	147	148	149	150	151	152	153	154	155	156	157	

Lane _____ Student's signature _____ Laps completed _____

From FITNESSGRAM/ACTIVITYGRAM Test Administration Manual, Updated Fourth Edition by The Cooper Institute, 2010, Champaign, IL: Human Kinetics.

(continued)

PACER (continued)

- Triple beeps at the end of each minute indicate the end of a level and an increase in speed. Students should be alerted that the speed will increase. When students hear the triple beeps they should turn around at the line and immediately continue running. Some students have a tendency to hesitate when they hear the triple beeps.

- A student who cannot reach the line when the beep sounds should be given one more chance to regain the pace. The second time a student cannot reach the line by the time of the beep, his or her test is completed.

- Groups of students may be tested at one time. Adult volunteers may be asked to help record scores. Students may record scores for each other or for younger students.

- Each runner must be allowed a path 40 to 60 inches wide. It may work best to mark the course.

- Using the CD is an efficient method for administering this test item.

One-Mile Run**⇒ Alternative**

The one-mile run can be used instead of the PACER to provide an estimate of aerobic capacity (VO_2max). For students who enjoy running and are highly motivated, it is a very good alternative assessment. Scoring of the one-mile run will require the input of a student's height and weight since the calculation of aerobic capacity includes BMI.

Test Objective

The objective of the assessment is to run a mile at the fastest pace possible (i.e., shortest time). If a student gets tired, it is okay to allow him or her to walk, but encourage the student to try to at least maintain a slow jog throughout the assessment. An aerobic capacity score cannot be obtained for mile times greater than 13:00, and this time would not likely be achieved at a walking pace. If students cannot complete a one-mile jog or run, they should be encouraged to complete the one-mile walk test. Note that the walk test is validated only for those age 13 and older.

Equipment and Facilities

A flat and accurately measured running course, stopwatch, pencil, and score sheets are required. The course may be a track or any other measured area. The course may be measured using a tape measure or cross country wheel. Caution: If the track is metric or shorter than 440 yards, adjust the running course (1,609.34 meters = 1 mile; 400 meters = 437.4 yards; 1,760 yards = 1 mile).

On a 400-meter track the run should be four laps plus 10 yards.

Test Instructions

Describe the course to the students, and encourage them to complete the distance in the shortest possible time. Remind them to listen for their time as they cross the line. Also, many students begin too fast and tire out, so it is important to remind them to use appropriate pacing to get an accurate assessment. To initiate the assessments, you can provide a signal of "Ready . . . start." As they cross the finish line, elapsed time should be called out to the participants (or their partners) and then recorded.

Scoring

The scoring of the one-mile run is based on the total time as well as the child's age, sex, and BMI (obtained from height and weight). The software will use the entered data to estimate the child's aerobic capacity. The score will then be used in the software to determine what fitness zone the child is placed into and what feedback is provided.

Criterion standards are not available for students in grades K-3 (ages 5-9). The object of the test for these younger students is simply to complete the one-mile distance at a comfortable pace and to practice pacing, so it is not necessary to time the run for these students. Nine-year-olds in grade 4 will receive a standard. All 10-year-olds should receive a score regardless of grade level.

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One-Mile Run (continued)

Remember that the height and weight for each student must be entered in addition to the performance time on the one-mile run. Calculation of aerobic capacity also requires a time less than 13:01. A child scoring above this time will be placed into the Needs Improvement—Health Risk zone since this achievement would result in an estimate of aerobic capacity below the health standard.

Suggestions for Test Administration

- Call out times as the runners pass the start-and-stop line to assist students in pacing themselves.
- Preparation for the test should include instruction about pacing and practice in pacing. Without instruction, students usually run too fast early in the test and then are forced to walk near the end.
- Results are generally better if a student can maintain a constant pace during most of the test.
- Walking is certainly permitted, but students should be encouraged to complete the assessment at a slow jog rather than a walking pace. If students can't complete a mile, they should be assessed with the one-mile walk test, although that test is validated only for ages 13 and older.
- Have students set a goal before running.
- Students should always warm up before taking the test. They should also cool down by continuing to walk for several minutes after completing the distance. A good suggestion is to have those who have completed the distance do an easy activity (juggle, hula hoop) while waiting for others to complete the distance. This keeps everyone moving and busy and takes the focus off the slower students who will complete the distance last.
- Avoid administering the test under conditions of unusually high temperature or humidity or when

the wind is strong, because these elements may be unsafe or may lead to an invalid estimate of aerobic capacity.

- Counting laps completed and accurately recording the run time can be a problem when a relatively small course is used with younger children. Many techniques are acceptable. Pair the students and have the resting partner count laps and record time for the runner. Older students or parents may be asked to assist in recording results for younger students.



PHOTO © Human Kinetics. Student running.

Walk Test

⇒ Alternative

Another alternative to the PACER test is the one-mile walk test. This test is only for students ages 13 and older since it hasn't been validated with younger samples. The walk test is an excellent alternative assessment because it can be used for a lifetime. Secondary students should learn to do

this test because it is one that they can repeat on their own to self-assess their fitness levels

Test Objective

The objective is to walk one mile as quickly as possible while maintaining a constant walking pace for the entire distance. The assessment is based on the relative heart rate for a given speed of walking, so the actual pace is not critical. This test is included

(continued)

Walk Test (continued)

in *FITNESSGRAM* for use with participants ages 13 years and older. The walk test is an excellent self-assessment skill for everyone to use throughout life.

Equipment and Facilities

A flat, accurately measured (1 mile) course, two or more stopwatches, pencils, and score sheets are required. Heart rate monitors, if available, make heart rate monitoring much easier. The course may be measured using a tape measure or cross country wheel. Caution: If the track is metric or shorter than 440 yards, adjust the course (1,609.34 meters = 1 mile; 400 meters = 437.4 yards; 1,760 yards = 1 mile). On a 400-meter track the walk should be four laps plus 10 yards.

Test Instructions

Describe the course to the students, and instruct them to complete the full mile at a steady, brisk walking pace that can be maintained the entire distance. As they cross the finish line, elapsed time should be called to the participants (or their partners). It is possible to test 15 to 30 students at one time by dividing the group. Have each student select a partner; one is the walker and one is the scorer. While one group walks, the scorers count laps and record the finish time.

At the conclusion of the one-mile walk, each student should take a 60-second heart rate count. The scorer can time the 60 seconds, or students can count the time themselves by using a pace clock with a second hand. If using heart rate monitors to determine the heart rate, each participant should start his or her stopwatch at the beginning of the walk and stop it at the end. The last heart rate recorded during the walk should be used as the walking heart rate.

Scoring

The walk test is based on the relative heart rate in walking a mile at a specific speed. Therefore, it is important to have an accurate measure of the mile walk time (scored in minutes and seconds) as well as a 60-second heart rate. The child's estimated $\text{VO}_{2\text{max}}$ is calculated using the Rockport Fitness Walking Test equation (Kline et al. 1987; McSwegin et al.



PHOTO © Human Kinetics. Student walking.

1998). The estimate is evaluated using the same aerobic fitness standards as the other assessments.

Suggestions for Test Administration

- Preparation for the test should include instruction and practice in pacing and in techniques for heart rate monitoring.
- Results are generally better if the student can maintain a constant pace during most of the test.
- Students should always warm up before taking the test. They should also cool down by continuing to walk for several minutes after completing the distance.
- Avoid administering the test under conditions of unusually high temperature or humidity or when the wind is strong, because these elements may cause an invalid estimate of aerobic capacity.

MUSCULAR STRENGTH, ENDURANCE, AND FLEXIBILITY

Please note: The recommended and alternate tests for Muscular Strength, Endurance, and Flexibility in Illinois are as follows:

Flexibility: Recommended test: Back-Saver Sit and Reach test, Alternate test: Trunk lift test

Muscular endurance Test: Curl-up test and Muscular strength test: Push-up test.

The content corresponding to these tests has been highlighted.

Tests of muscular strength, muscular endurance, and flexibility have been combined into one broad fitness category because the primary consideration is determining the functional health status of the musculoskeletal system. It is equally important to have strong muscles that can work forcefully and over a period of time and to be flexible enough to have a full range of motion at the joint. Musculoskeletal injuries are often the result of muscle imbalance at a specific joint; the muscles on one side may be much stronger than the opposing muscles or may not be flexible enough to allow complete motion or sudden motion to occur.

It is important to remember that the specificity of training bears directly on the development of musculoskeletal strength, endurance, and flexibility. The movements included in these test items are only a sampling of the many ways in which the body is required to move and adjust during physical activity.

The upper body and the abdominal/trunk region have been selected as areas for testing because of their perceived relationship to activities of daily living, correct posture, and the development/maintenance of a healthy, well-functioning back.

The goals for a healthy back include proper alignment of the vertebrae and pelvis without excessive disc pressure and the ability of the pelvis to rotate forward and backward without strain on the muscles or connective tissue. To accomplish these goals an individual must have sufficient, but not excessive, flexibility of the low back, hamstring, and hip flexor muscles and strong, fatigue-resistant, abdominal and trunk extensor muscles. Although most students will be able to achieve the criterion standards for one or two of the included test items, it is important to educate them regarding the importance of muscular strength, muscular endurance, and flexibility in preventing problems as adults. It is especially important to make students aware of correct postural alignment and body mechanics in the event that they are developing scoliosis, which is a problem for teenage youth. The school nurse, a local physician, or a physical therapist is a good source of information about scoliosis.

Need Additional Resources?

For complete information about FITNESSGRAM, visit www.fitnessgram.net. To order the FITNESSGRAM

software and related resources, call Human Kinetics at 800-747-4457, or order online at www.HumanKinetics.com. To review the science behind the assessment, please read the Reference Guide, which is available at no cost at www.fitnessgram.net.

Abdominal Strength and Endurance

Strength and endurance of the abdominal muscles are important in promoting good posture and

correct pelvic alignment. The latter is particularly important in the maintenance of low back health. In testing and training the muscles of this region, it is difficult to isolate the abdominal muscles. The modified sit-up, which is used in many fitness tests, involves the action of the hip flexor muscles in addition to the abdominal muscles. The curl-up assessment used in *FITNESSGRAM* is a safer and more effective test since it does not involve the assistance of the hip flexor muscles and minimizes compression in the spine, when compared to a full sit-up with the feet held. The protocol has been adapted from a version reported by Massicote (1990).

Curl-Up

⇒ Recommended

This section provides information on the curl-up assessment used in *FITNESSGRAM*. The curl-up with knees flexed and feet unanchored has been selected because individually these elements have been shown to a) decrease movement of the fifth lumbar vertebra over the sacral vertebrae, b) minimize the activation of the hip flexors, c) increase the activation of the external and internal obliques and transverse abdominals, and d) maximize abdominal muscle activation of the lower and upper rectus abdominals relative to disc compression (load) when compared with a variety of sit-ups.

Few results are available on the consistency and accuracy of the curl-up. Reliability is higher for college students than for children but the values are acceptable for this type of assessment. Determination of validity has been hampered by the lack of an established criterion measure. Anatomical analysis and electromyographical documentation provide the primary support for the use of the curl-up test to determine abdominal strength and endurance.

Test Objective

To complete as many curl-ups as possible up to a maximum of 75 at a specified pace.

Equipment and Facilities

Gym mats and a measuring strip for every two students are needed. The measuring strip may be made of cardboard, rubber, smooth wood, or any similar thin, flat material and should be 30 to 35 inches long. Two widths of measuring strip may

be needed. The narrower strip should be 3 inches wide and is used to test 5- to 9-year-olds; for older students the strip should be 4.5 inches wide.

Test Instructions

Allow students to select a partner. Partner A will perform the curl-ups while partner B counts and watches for form errors.

Partner A lies in a supine position on the mat, knees bent at an angle of approximately 140°, feet flat on the floor, legs slightly apart, arms straight and parallel to the trunk with palms of hands resting on the mat. The fingers are stretched out and the head is in contact with the mat. Make sure students have extended their feet as far as possible from the buttocks while still allowing feet to remain flat on floor. The closer the feet are positioned in relation to the buttocks, the more difficult the movement.

After partner A has assumed the correct position on the mat, partner B places a measuring strip on the mat under partner A's legs so that partner A's fingertips are just resting on the nearest edge of the measuring strip. Partner B then kneels down at partner A's head in a position to count curl-ups and watch for form breaks. Partner B places a piece of paper under partner A's head. The paper will assist partner B in judging if partner A's head touches down on each repetition. The observer should watch for the paper to crinkle each time partner A touches it with his or her head.

Before beginning the curl-up, it is a good practice for partner B to pull on partner A's hands to ensure that the shoulders are relaxed and in a normal resting position. If partner A is allowed to hunch

(continued)

Curl-Up (continued)



PHOTO © Human Kinetics. Starting position for the curl-up test.



PHOTO © Human Kinetics. Position of the student in the "up" position for the curl-up test.

(continued)

Curl-Up (continued)



PHOTO © Human Kinetics. Close-up of the fingertips sliding: (a) starting position and (b) ending position.

the shoulders before beginning the test, he or she may be able to get the fingertips to the other side of the testing strip by merely moving the arms and shoulders up and down. Keeping heels in contact with the mat, partner A curls up slowly, sliding fingers across the measuring strip until fingertips reach the other side; then partner A curls back down until his or her head touches the piece of paper on the mat. Movement should be slow and gauged to the specified cadence of about 20 curl-ups per minute (1 curl every 3 seconds). The teacher should call a cadence or use a prerecorded cadence. A recorded cadence should be used to ensure accurate testing for students. Partner A continues without pausing until he or she can no longer continue or has completed 75 curl-ups.

When to Stop

Students are stopped after completing 75 curl-ups, when the second form correction is made, or when they can no longer continue.

Form Corrections

- Heels must remain in contact with the mat.
- Head must return to the mat on each repetition.
- Pauses and rest periods are not allowed. The movement should be continuous and with the cadence.

- Fingertips must touch the far side of the measuring strip.

Scoring

The score is the number of curl-ups performed. Curl-ups should be counted when the student's head returns to the mat. For ease in administration, it is permissible to count the first incorrect curl-up. It is important to be consistent with all of the students and classes when determining whether or not you will count the first incorrect curl-up.

Suggestions for Test Administration

- The student being tested should reposition if the body moves so that the head does not contact the mat at the appropriate spot or if the measuring strip is out of position.
- Movement should start with a flattening of the lower back followed by a slow curling of the upper spine.
- The hands should slide across the measuring strip until the fingertips reach the opposite side (3 or 4.5 inches) and then return to the supine position. The movement is completed when the back of the head touches the paper placed on mat.

(continued)

Curl-Up (*continued*)

- The cadence will encourage a steady, continuous movement done in the correct form.
- Students should not forcibly “reach” with their arms and hands but simply let the arms passively move along the floor in response to the action of the trunk and shoulders. Any jerking, kipping, or reaching motion will cause the students to constantly move out of position. When students first begin to

use this test item, many will want to “reach” with their arms and hands, especially if they have previously done a timed sit-up test.

- This curl-up protocol is quite different from the one-minute sit-up. **Students will need to learn how to correctly perform this curl-up movement and be allowed time to practice.**

Trunk Extensor Strength and Flexibility

A test of trunk extensor strength and flexibility is included in *FITNESSGRAM* because of its relationship to low back health, especially proper vertebral alignment. Musculoskeletal fitness of the abdominal

muscles, hamstrings, and back extensors works in concert to maintain posture and helps maintain low back health. The item is included in the assessment in part because of the educational value of simply doing the assessment. Students will learn that trunk extensor strength and flexibility is an important aspect of maintaining a healthy back.

Trunk Lift

⇒ Recommended

It is important that attention be given to performance technique during this test. The movement should be performed in a slow and controlled manner. The maximum score on this test is 12 inches. While some flexibility is important, it is not advisable (or safe) to encourage hyperextension.

Test-retest studies of the trunk extension test (done without limiting the lift to 12 inches) have reported high reliability in high school and college aged students. There are no data on the consistency results for younger children.

Research results have shown that isokinetic trunk endurance, torso length, body weight, passive trunk extension, trunk extension endurance, trunk strength, and flexibility all contribute to performance of the trunk lift. However, as a single repetition, partially body weight limited, restricted range item, this test is a minimal assessment of the components of trunk strength and flexibility. Most school-aged individuals will pass this test easily.

Test Objective

To lift the upper body off the floor using the muscles of the back and hold the position to allow for the measurement.

Equipment and Facilities

Gym mats and a measuring device are required to administer this test. A yardstick or 15-inch ruler is preferred; however a 12-inch ruler could be used if care is taken to make certain that the ruler is not placed directly under the student’s chin. If students are measuring each other, the “rulers” should be made of some pliable material such as poster board. It is helpful to mark the 6-, 9-, and 12-inch marks with tape. Rope cut to 12 inches with the inch marks taped can also be used as a measuring device.

Test Instructions

The student being tested lies on the mat in a prone position (facedown). Toes are pointed and hands are placed under the thighs. Place a coin or other marker on the floor in line with the student’s eyes. During the movement, the student’s focus should not move from the coin or marker. The student lifts the upper body off the floor, in a very slow and controlled manner, to a maximum height of 12 inches. The head should be maintained in a neutral (straight) alignment with the spine. The position is held long enough to allow the tester to place the ruler on the floor in front of the student and determine the distance from the floor to the student’s chin. The ruler should be

(*continued*)

Trunk Lift (continued)



PHOTO © Human Kinetics. Starting position for the trunk lift.



PHOTO © Human Kinetics. Student in the "up" position for the trunk lift.



PHOTO © Human Kinetics. Measurement of trunk lift.

(continued)

Trunk Lift (continued)

placed at least an inch to the front of the student's chin and not directly under the chin. Once the measurement has been made, the student returns to the starting position in a controlled manner. Allow two trials, recording the highest score.

Scoring

The score is recorded in inches. Distances above 12 inches should be recorded as 12 inches.

Suggestions for Test Administration

- Do not allow students to do ballistic, bouncing movements.

- Do not encourage students to raise higher than 12 inches. The Healthy Fitness Zone ends at 12 inches, and scores beyond 12 inches will not be accepted by the software. Excessive arching of the back may cause compression of the spinal discs.

- Maintaining focus on the spot on the floor should assist in maintaining the head in a neutral position.

- Partner B should make the reading at eye level and, therefore, should assume a squat or lying down position.

Upper Body Strength and Endurance

Strength and endurance of the muscles in the upper body are important in activities of daily living, maintaining functional health and promoting good posture. The role of upper body strength in maintaining functionality becomes more evident as a person ages. It is important that children and youth learn the importance of upper body strength and endurance as well as methods to use in developing

and maintaining this area of fitness. The 90° push-up is the recommended test item. This 90° push-up has been adapted from assessments reported by Massicote (1990). Alternative tests include the modified pull-up, pull-up, and flexed arm hang. It should be noted that although all of these items are intended to measure upper arm and shoulder girdle strength and endurance, they do not all involve the same muscle groups to the same extent and handling body weight is more of a factor in some than others.

90° Push-Up**⇒ Recommended**

The 90° push-up to an elbow angle of 90° is the recommended test for upper body strength and endurance. Test administration requires little or no equipment; multiple students may be tested at one time; and few zero scores result. This test also teaches students an activity that can be used throughout life as a conditioning activity as well as in self-testing.

The 90° push-up has generally been shown to produce consistent scores but reliability depends on how it is administered. Lower values have been reported for elementary aged students using partners to count the repetitions. Objectivity, or the ability of different observers to attain the same results, is a factor in this item because of the necessity of judging the 90° angle. Scores from student partners are consistently higher than adult

counts because students tend to simply count each attempted 90° push-up and not evaluate whether it was done correctly. As with several of the other neuromuscular fitness items, determining the accuracy of the 90° push-up as a test of upper body strength and endurance is made difficult by the lack of an agreed upon criterion measure. Specific validation data are available for the 90° push-up in only two studies conducted on college age students. Validity coefficients against a 1-RM bench press were the highest when the criterion test was the number of repetitions (endurance) at an absolute, but sex-specific, load.

Before test day, students should be allowed to practice doing 90° push-ups and watching their partner do them. Teachers should make a concerted effort during these practice sessions to correct students who are not achieving the 90° angle. In this manner all students will gain greater skill in knowing what 90° "feels like" and "looks like."

(continued)

90° Push-Up (continued)

Test Objective

To complete as many 90° push-ups as possible at a rhythmic pace. This test item is used for males and females.

Equipment and Facilities

The only equipment necessary is having the correct cadence. The correct cadence is 20 90° push-ups per minute (1 90° push-up every 3 seconds). A recorded cadence should be used to ensure accurate testing for students. The 90° push-up may be performed on a mat. Squares of cardboard or anything else that has a 90° angle may assist students in judging 90°.

Test Instructions

The students should be paired; one will perform the test while the other counts 90° push-ups and watches to see that the student being tested bends the elbow to 90° with the upper arm parallel to the floor.

The student being tested assumes a prone position on the mat with hands placed under or slightly wider than the shoulders, fingers stretched out, legs straight and slightly apart, and toes tucked under. The student pushes up off the mat with the arms until arms are straight, keeping the legs and back straight. The back should be kept in a straight line from head to toes throughout the test.

The student then lowers the body using the arms until the elbows bend at a 90° angle and the upper arms are parallel to the floor. This movement is repeated as many times as possible. The student should push up and continue the movement until the arms are straight on each repetition. The rhythm should be approximately 20 90° push-ups per minute or 1 90° push-up every 3 seconds.

When to Stop

Students are stopped when the second form correction (mistake) is made. Only one form correction is allowed.

Form Corrections

- Stopping to rest or not maintaining a rhythmic pace
- Not achieving a 90° angle with the elbow on each repetition
- Not maintaining correct body position with a straight back
- Not extending arms fully

Scoring

The score is the number of 90° push-ups performed. For ease in administration, it is permissible to count the first incorrect 90° push-up. It is important to be consistent with all of the students and classes



PHOTO © Human Kinetics. Starting position for the 90° push-up test.



PHOTO © Human Kinetics. Student in the "down" position for the 90° push-up test.

(continued)

90° Push-Up (*continued*)

when determining if you will count the first incorrect push-up.

Suggestions for Test Administration

- Test should be terminated if the student appears to be in extreme discomfort or pain.
- Cadence should be called or played on a player device or CD.
- Males and females follow the same protocol.

- Find a short cone or other piece of pliable equipment that could be placed under the student's chest. The student must lower to the equipment in order for the 90° push-up to count. The size and height of the equipment that is used may vary depending on the age and size of your students.

Modified Pull-Up

⇒ Alternative

The modified pull-up shares the advantage of few zero scores and a wide range of scores with the 90° push-up. However, it does not, as commonly believed, negate the effect of body composition/weight on upper body performance. For schools with access to equipment, and desiring to test students individually, the modified pull-up is a very good test item to use.

The modified pull-up has been found to be a reliable test in primary, middle, and high school students. The modified pull-up has not been validated against a criterion measure but it has logical validity based on anatomical principles.

Test Objective

To successfully complete as many modified pull-ups as possible.

Equipment and Facilities

A modified pull-up stand, elastic band, pencil, and score sheet are necessary for administering this test. It is suggested that this assessment be performed on a mat or other soft surface. Modified pull-up stands can be constructed.

Test Instructions

Position the student on his or her back with shoulders directly under a bar that has been set 1 to 2 inches above the student's reach. Place an elastic band 7 to 8 inches below and parallel to the bar.

The student grasps the bar with an overhand grip (palms away from body). The pull-up begins in this "down" position with arms and legs straight, buttocks off the floor, and only the heels touching the floor. The student then pulls up until the chin is above the elastic band.



PHOTO © Human Kinetics. Starting position for the modified pull-up test.

(*continued*)

Modified Pull-Up (continued)



PHOTO © Human Kinetics. Student in the “up” position for the modified pull-up test.

The student then lowers the body to the “down” position. Movement continues in a rhythmic manner.

When to Stop

Students are stopped when the second form correction is made. There is no time limit, but movement should be rhythmical and continuous. Students should not stop and rest.

Form Corrections

- Stopping to rest or not maintaining a rhythmic pace
- Not lifting the chin above the elastic band
- Not maintaining straight body position with only heels in contact with the floor
- Not fully extending arms in the down position

Scoring

The score is the number of pull-ups performed. For ease in administration it is permissible to count the first incorrect pull-up. It is important to be consistent with all of the students and classes when determining if you will count the first incorrect pull-up.

Suggestions for Test Administration

- The test is terminated if the student experiences extreme discomfort or pain.
- Males and females follow the same protocol.

Pull-Up

⇒ *Alternative*

The pull-up test is not the recommended test item for the vast majority of students because many are unable to perform even one pull-up. **This test item should not be used for students who cannot perform one repetition.** However, for those students who are able to perform correct pull-ups this is an item that can be used throughout life as a conditioning activity as well as a self-test.

Reliability of the pull-up has been shown to be acceptable for elementary boys and girls. Attempts

at validating the pull-up as a measure of strength against a 1-RM latissimus pull-down have generally not been successful. Validity is equally poor when evaluated against a percentage (50-60% typically) of a 1-RM latissimus pull-down as an indication of upper arm and shoulder girdle endurance, ranging from only .09 to .25. As with the other measures of upper body strength and endurance, at least part of the problem may be the lack of a real criterion test.

Test Objective

To correctly complete as many pull-ups as possible.

(continued)

Pull-Up (continued)

Equipment and Facilities

This test uses a horizontal bar at a height that allows the student to hang with arms fully extended and feet clear of the floor. A doorway gym bar may be used.

Test Instructions

The student assumes a hanging position on the bar with an overhand grasp (palms facing away from the body). Shorter students may be lifted into the starting position. The student uses the arms to pull the body up until the chin is above the bar and then lowers the body again into the full hanging position. The exercise is repeated as many times as possible. There is no time limit.

When to Stop

Students are stopped when the second form correction (mistake) is made.

Form Corrections

- The body should not swing during the movement. If the student starts to swing, the teacher or assistant should hold an arm in front of the student's thighs to prevent swinging. Swinging of the body or excessive movement is a form correction.
- The pull-up must be performed smoothly with no kicking or jerking. Forceful bending of the knees or kipping of the body is not permitted.
- To be counted, a pull-up must result in the chin being lifted over the bar, and the student must return to the full hanging position with elbows fully extended.



PHOTO © Human Kinetics. Starting position for the pull-up test.



PHOTO © Human Kinetics. Student in the "up" position for the pull-up test.

(continued)

Pull-Up (continued)

Scoring

The score is the number of complete pull-ups performed. For ease in administration, it is permissible to count the first incorrect pull-up. It is important to be consistent with all of the students and classes when determining if you will count the first incorrect pull-up.

Suggestions for Test Administration

- A stack of mats off to the side of the hanging bar may be used to help students grasp the bar.
- The teacher may help the student into position and make certain that the body is in the proper position before beginning the test.

Flexed Arm Hang

⇒ *Alternative*

A third alternative to the recommended 90° push-up is the flexed arm hang. The flexed arm hang is a static test of upper body strength and endurance.

Consistency in times for the flexed arm hang has been shown to be acceptable in both 9- and 10-year-olds and college aged students. Two studies, which have attempted to validate the flexed arm hang against the 1-RM arm curl for endurance have shown weak correlations. Thus, only anatomical logic validates this item, as with most of the other upper body tests.



PHOTO © Human Kinetics. Starting position for the flexed arm hang test.



PHOTO © Human Kinetics. Student in the “up” position for the flexed arm hang test.

(continued)

Flexed Arm Hang (*continued*)**Test Objective**

To hang with the chin above the bar as long as possible.

Equipment and Facilities

A horizontal bar, chair or stool (optional), and stopwatch are required to administer this test item.

Test Instructions

The student grasps the bar with an overhand grip (palms facing away). With the assistance of one or more spotters, the student raises the body off the floor to a position in which the chin is above the bar, elbows are flexed, and the chest is close to the bar. A stopwatch is started as soon as the student takes this position. The position is held as long as possible.

When to Stop

The watch is stopped when one of the following occurs:

- The student's chin touches the bar.
- The student tilts his or her head back to keep the chin above the bar.
- The student's chin falls below the bar.

Scoring

The score is the number of seconds for which the student is able to maintain the correct hanging position.

Suggestions for Test Administration

- The body must not swing during the test. If the student starts to swing, the teacher or assistant should hold an extended arm across the front of the thighs to prevent the swinging motion.
- Only one trial is permitted unless the teacher believes that the pupil has not had a fair opportunity to perform.

Flexibility

Maintaining adequate joint flexibility is important to functional health. However, for young people, decreased flexibility is generally not a problem. Many of your students will easily pass the flexibility

item; therefore, the flexibility item has been made optional. If you decide not to administer the flexibility test, remember that you should teach students about flexibility and inform them that maintaining flexibility and range of motion will be important as they age.

Back-Saver Sit and Reach**⇒ Optional**

The back-saver sit and reach is very similar to the traditional sit and reach except that the measurement is performed on one side at a time. By testing one leg at a time a determination can be made of any asymmetry in hamstring flexibility, and hyperextension of both knees is avoided. The sit and reach measures predominantly the flexibility of the hamstring muscles. Normal hamstring flexibility

allows rotation of the pelvis in forward bending movements and posterior tilting of the pelvis for proper sitting.

The back-saver sit and reach has been shown to provide extremely consistent scores when administered under standardized conditions. The back-saver sit and reach has also been shown to be a reasonably accurate measure of hamstring flexibility. When compared with criterion measures of hamstring flexibility, the correlations for both right and left legs have been moderate to high. Conversely, the back-saver sit and reach has been shown to correlate poorly with criterion tests

(*continued*)

Back-Saver Sit and Reach (*continued*)

of low back flexibility. Therefore, the back-saver sit and reach cannot be considered a valid measure of low back flexibility and should not be interpreted as such.

Test Objective

To be able to reach the specified distance on the right and left sides of the body. The distance required to achieve Healthy Fitness Zone is adjusted for age and gender.

Equipment and Facilities

This assessment requires a sturdy box approximately 12 inches high. A measuring scale is placed on top of the box with the 9-inch mark parallel to the face of the box against which the student's foot will rest. The "zero" end of the ruler is nearest the student. Instructions for construction of a special measuring apparatus are available. However, a wooden box and yardstick will suffice.

Tape the yardstick to the top of the box with the 9-inch mark at the nearest edge of the box. The "zero" end of the yardstick is nearest the student.

Test Instructions

The student removes his or her shoes and sits down at the test apparatus. One leg is fully extended with the foot flat against the face of the box. The other knee is bent with the sole of the foot flat on the floor. The instep is placed in line with, and 2 to 3 inches to the side of, the straight knee. The arms are extended forward over the measuring scale with the hands placed one on top of the other. With palms down, the student reaches directly forward (keeping back straight and the head up) with both hands along the scale four times and holds the position of the fourth reach for at least 1 second. After one side has been measured, the student switches the position of the legs and reaches again. The student may allow the bent knee to move to the side as the body moves



PHOTO © Human Kinetics. Starting position for measuring the right side.



PHOTO © Human Kinetics. Back-saver sit and reach stretch for the right side.

(*continued*)

Back-Saver Sit and Reach (continued)

forward if necessary, but the sole of the foot must remain on the floor.

Scoring

Record the number of inches on each side to the nearest 1/2 inch reached, to a maximum score of 12 inches. Performance is limited to discourage hypermobility. To be in the Healthy Fitness Zone, the student should meet the standard on both the right and the left sides.

Suggestions for Test Administration

- The bent knee moves to the side, allowing the body to move past it, but the sole of the foot must remain on the floor.

- Keep the back straight and the head up during the forward flexion movement.

- The knee of the extended leg should remain straight. Tester may place one hand above the student's knee to help keep the knee straight.

- Hands should reach forward evenly.

- The trial should be repeated if the hands reach unevenly or the knee bends.

- Hips must remain square to the box. Do not allow the student to turn the hip away from the box while reaching.

Shoulder Stretch

⇒ *Optional*

The shoulder stretch is a simple test of upper arm and shoulder girdle flexibility intended to parallel the strength/endurance assessment of that region. If used

alternately with the back-saver sit and reach, it may be useful in educating students that flexibility is specific to each joint and that hamstring flexibility neither represents a total body flexibility nor is the only part of the body where flexibility is important.

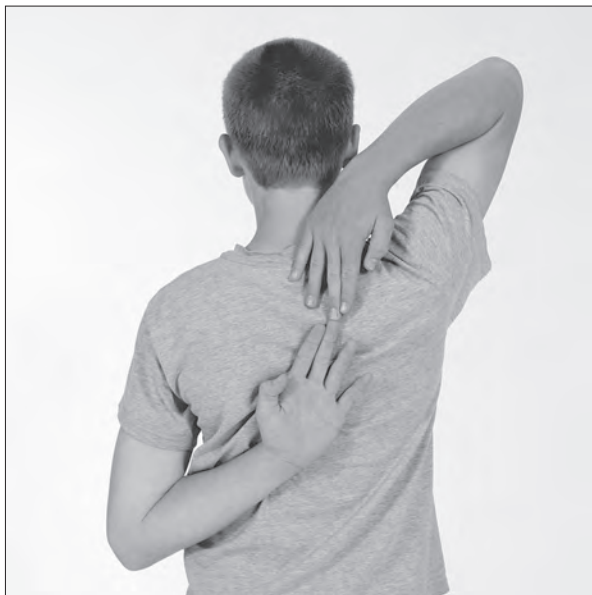


PHOTO © Human Kinetics. Shoulder stretch on the right side.

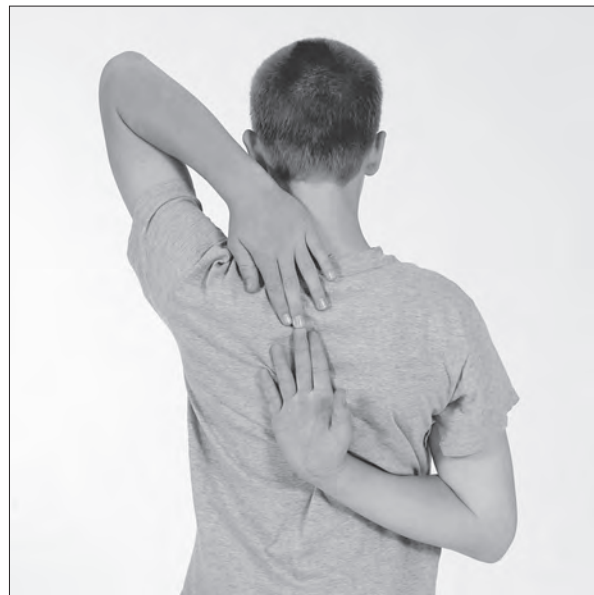


PHOTO © Human Kinetics. Shoulder stretch on the left side.

(continued)

Shoulder Stretch (*continued*)

Test Objective

To be able to touch the fingertips together behind the back by reaching over the shoulder and under the elbow.

Equipment and Facilities

No equipment is necessary to complete this test item.

Test Description

Allow students to select a partner. The partner judges ability to complete the stretch.

To test the right shoulder, partner A reaches with the right hand over the right shoulder and down the back as if to pull up a zipper or scratch between the shoulder blades. At the same time partner A places the left hand behind the back and reaches up, trying to touch the fingers of the right

hand. Partner B observes whether the fingers touch.

To test the left shoulder, partner A reaches with the left hand over the left shoulder and down the back as if to pull up a zipper or scratch between the shoulder blades. At the same time partner A places the right hand behind the back and reaches up, trying to touch the fingers of the left hand. Partner B notes whether the fingers touch.

Scoring

If the student is able to touch his or her fingers with the left hand over the shoulder, a “Y” is recorded for the left side; if not, an “N” is recorded. If the student is able to touch the fingers with the right hand over the shoulder, a “Y” is recorded for the right side; otherwise an “N” is recorded. To achieve the Healthy Fitness Zone, a “Y” must be recorded on both the right and left side.



Standards for Healthy Fitness Zone®

Version 10.x

BOYS

Aerobic Capacity			Percent Body Fat				Body Mass Index			
VO₂max (ml/kg/min)										
PACER, One Mile Run & Walk Test										
NI-Health Risk	NI	HFZ	Very Lean	HFZ	NI	NI-Health Risk	Very Lean	HFZ	NI	NI-Health Risk
5			≤8.8	8.9-18.8	18.9	≥27.0	≤13.8	13.9-16.8	16.9	≥18.1
6	<i>Completion of test. Lap count or time standards not recommended.</i>		≤8.4	8.5-18.8	18.9	≥27.0	≤13.7	13.8-17.1	17.2	≥18.8
7			≤8.2	8.3-18.8	18.9	≥27.0	≤13.7	13.8-17.6	17.7	≥19.6
8			≤8.3	8.4-18.8	18.9	≥27.0	≤13.9	14.0-18.2	18.3	≥20.6
9			≤8.6	8.7-20.6	20.7	≥30.1	≤14.1	14.2-18.9	19.0	≥21.6
10	≤37.3	37.4-40.1	≤8.8	8.9-22.4	22.5	≥33.2	≤14.4	14.5-19.7	19.8	≥22.7
11	≤37.3	37.4-40.1	≤8.7	8.8-23.6	23.7	≥35.4	≤14.8	14.9-20.5	20.6	≥23.7
12	≤37.6	37.7-40.2	≤8.3	8.4-23.6	23.7	≥35.9	≤15.2	15.3-21.3	21.4	≥24.7
13	≤38.6	38.7-41.0	≤7.7	7.8-22.8	22.9	≥35.0	≤15.7	15.8-22.2	22.3	≥25.6
14	≤39.6	39.7-42.4	≤7.0	7.1-21.3	21.4	≥33.2	≤16.3	16.4-23.0	23.1	≥26.5
15	≤40.6	40.7-43.5	≤6.5	6.6-20.1	20.2	≥31.5	≤16.8	16.9-23.7	23.8	≥27.2
16	≤41.0	41.1-44.0	≤6.4	6.5-20.1	20.2	≥31.6	≤17.4	17.5-24.5	24.6	≥27.9
17	≤41.2	41.3-44.1	≤6.6	6.7-20.9	21.0	≥33.0	≤18.0	18.1-24.9	25.0	≥28.6
>17	≤41.2	41.3-44.2	≤6.9	7.0-22.2	22.3	≥35.1	≤18.5	18.6-24.9	25.0	≥29.3

Curl-up		Trunk Lift		Push-up		Modified Pull-up		Flexed Arm Hang		Back Saver Sit & Reach**		Shoulder Stretch	
# completed		inches		# completed		# completed		seconds		inches			
5	≥2	6	12	≥3		≥2		≥2		8		Healthy Fitness Zone = Touching fingertips together behind the back on both right and left sides	
6	≥2	6	12	≥3		≥2		≥2		8			
7	≥4	6	12	≥4		≥3		≥3		8			
8	≥6	6	12	≥5		≥4		≥3		8			
9	≥9	6	12	≥6		≥5		≥4		8			
10	≥12	9	12	≥7		≥5		≥4		8			
11	≥15	9	12	≥8		≥6		≥6		8			
12	≥18	9	12	≥10		≥7		≥10		8			
13	≥21	9	12	≥12		≥8		≥12		8			
14	≥24	9	12	≥14		≥9		≥15		8			
15	≥24	9	12	≥16		≥10		≥15		8			
16	≥24	9	12	≥18		≥12		≥15		8			
17	≥24	9	12	≥18		≥14		≥15		8			
17+	≥24	9	12	≥18		≥14		≥15		8			

**Test scored Yes/No; must reach this distance on each side to achieve the HFZ.

Standards for Healthy Fitness Zone®

Version 10.x
GIRLS

<u>Aerobic Capacity</u>			<u>Percent Body Fat</u>				<u>Body Mass Index</u>				
<u>VO₂max (ml/kg/min)</u>											
<u>PACER, One Mile Run & Walk Test</u>			Very Lean	HFZ	NI	NI-Health Risk	Very Lean	HFZ	NI	NI-Health Risk	
NI-Health Risk	NI	HFZ									
5			≤9.7	9.8-20.8	20.9	≥28.4	≤13.5	13.6-16.8	16.9	≥18.5	
6	<i>Completion of test. Lap count or time standards not recommended.</i>		≤9.8	9.9-20.8	20.9	≥28.4	≤13.4	13.5-17.2	17.3	≥19.2	
7			≤10.0	10.1-20.8	20.9	≥28.4	≤13.5	13.6-17.9	18.0	≥20.2	
8			≤10.4	10.5-20.8	20.9	≥28.4	≤13.6	13.7-18.6	18.7	≥21.2	
9			≤10.9	11.0-22.6	22.7	≥30.8	≤13.9	14.0-19.4	19.5	≥22.4	
10	≤37.3	37.4-40.1	≥40.2	≤11.5	11.6-24.3	24.4	≥33.0	≤14.2	14.3-20.3	20.4	≥23.6
11	≤37.3	37.4-40.1	≥40.2	≤12.1	12.2-25.7	25.8	≥34.5	≤14.6	14.7-21.2	21.3	≥24.7
12	≤37.0	37.1-40.0	≥40.1	≤12.6	12.7-26.7	26.8	≥35.5	≤15.1	15.2-22.1	22.2	≥25.8
13	≤36.6	36.7-39.6	≥39.7	≤13.3	13.4-27.7	27.8	≥36.3	≤15.6	15.7-22.9	23.0	≥26.8
14	≤36.3	36.4-39.3	≥39.4	≤13.9	14.0-28.5	28.6	≥36.8	≤16.1	16.2-23.6	23.7	≥27.7
15	≤36.0	36.1-39.0	≥39.1	≤14.5	14.6-29.1	29.2	≥37.1	≤16.6	16.7-24.3	24.4	≥28.5
16	≤35.8	35.9-38.8	≥38.9	≤15.2	15.3-29.7	29.8	≥37.4	≤17.0	17.1-24.8	24.9	≥29.3
17	≤35.7	35.8-38.7	≥38.8	≤15.8	15.9-30.4	30.5	≥37.9	≤17.4	17.5-24.9	25.0	≥30.0
>17	≤35.3	35.4-38.5	≥38.6	≤16.4	16.5-31.3	31.4	≥38.6	≤17.7	17.8-24.9	25.0	≥30.0

	<u>Curl-up</u> # completed	<u>Trunk Lift</u> inches	<u>90° Push-up</u> # completed	<u>Modified Pull-up</u> # completed	<u>Flexed Arm Hang</u> seconds	<u>Back Saver Sit & Reach**</u> inches	<u>Shoulder Stretch</u>
5	≥2	6 12	≥3	≥2	≥2	9	Healthy Fitness Zone = Touching fingertips together behind the back on both right and left sides
6	≥2	6 12	≥3	≥2	≥2	9	
7	≥4	6 12	≥4	≥3	≥3	9	
8	≥6	6 12	≥5	≥4	≥3	9	
9	≥9	6 12	≥6	≥4	≥4	9	
10	≥12	9 12	≥7	≥4	≥4	9	
11	≥15	9 12	≥7	≥4	≥6	10	
12	≥18	9 12	≥7	≥4	≥7	10	
13	≥18	9 12	≥7	≥4	≥8	10	
14	≥18	9 12	≥7	≥4	≥8	10	
15	≥18	9 12	≥7	≥4	≥8	12	
16	≥18	9 12	≥7	≥4	≥8	12	
17	≥18	9 12	≥7	≥4	≥8	12	
17+	>18	9 12	>7	>4	>8	12	

**Test scored Yes/No; must reach this distance on each side to achieve the HFZ.

Brockport Physical Fitness Testing Information and Resources

Brockport chapters from the Fitnessgram Test Administration Manual:

[Brockport Physical Fitness Test Manual: Introduction](#)

[Brockport Physical Fitness Test Manual: Profiles, Test Selection Guides, Standards, and Fitness Zones](#)

[Brockport Physical Fitness Test Manual: Test Administration and Test Items](#)

[Brockport Physical Fitness Test Manual: Testing Youngsters with Severe Disability](#)

Other

[General Brockport Physical Fitness Test Form](#)