



CONNECTICUT STATE  
DEPARTMENT OF EDUCATION

**Connecticut Physical Fitness Assessment**  
**Third Generation**

**Test Administrator's Manual**  
**2022-23**

NOTE: In addition to this manual, the CSDE Performance Office also released the **CPFA Individual Student Data Collection Application Users Guide** to aid with data entry.

The Third Generation Connecticut Physical Fitness Assessment Test Administrator’s Manual is intended to explain the rationale for the test items selected for inclusion in the fitness assessment battery, provide descriptions of the tests and health-related performance standards, and provide answers to some common questions associated with the use and interpretation of the overall assessment.

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## 1. Introduction

Physical fitness is a critical element in the development of a healthy and productive adult. As such, it is an important component of Connecticut's overall educational program goals. It is the Connecticut State Department of Education's (CSDE) goal that by the end of Grade 12, students will recognize the importance of and choose to participate regularly in physical activities designed to maintain and enhance healthy lifestyles. The Connecticut Physical Fitness Assessment (CPFA) is evidence of a dedication to the physical development of Connecticut's students, as well as a commitment to focusing on outcomes and specific performance objectives. Physical fitness should be a result of the balance of activities that are provided in the physical education programs at school and continued by family and in other community-based activities. The CPFA should not be the focus of the entire physical education curriculum or program. Rather, the assessment should be a part of the ongoing process of helping children understand and improve and/or maintain their physical health and well-being.

The goals of the assessment are to:

- provide for continual monitoring of students' fitness levels in targeted grades;
- identify a student's weaknesses and strengths, so that areas in need of improvement can be seen and individual programs can be developed;
- inform students and parents about a student's fitness status; and
- inform schools, districts, and the public about programs focusing on fitness and physical activity in our schools and evaluate their success.

The focus of the *Third Generation* of the CPFA is health-related fitness. Changes to the assessment include improvements that address problems with specific test items and their administration, and reflect the careful research and piloting conducted by the Third Generation Connecticut Physical Fitness Assessment Committee, as well as physical educators from across the state.

Health-related fitness focuses on optimum health and prevents the onset of diseases and problems associated with inactivity. Maintaining an appropriate level of health-related fitness allows a person to:

- reduce the risk of disease and injury;
- work efficiently;
- participate and enjoy physical activity (sports, recreation, leisure); and
- be one's physical best.

## **Third Generation Connecticut Physical Fitness Assessment Committee**

The CSDE would like to recognize and thank the members of the Third Generation Connecticut Physical Fitness Assessment Committee.

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## 2. History of the Connecticut Physical Fitness Assessment Program

### 1990-2009

Physical fitness has been, and continues to be, an important component of Connecticut’s overall education program goals. *Challenge for Excellence: Connecticut’s Comprehensive Plan for Elementary, Secondary, Vocational, Career and Adult Education: A Policy Plan – 1991-1995*, adopted by the State Board of Education, states that the learning of lifelong values of physical fitness is a life skill competency. The document also cited, “an increase in the physical fitness of students,” as one of *16 Indicators of Success of the Statewide Educational Goals for Students*. In addition, *Connecticut’s Common Core of Learning* included physical development as part of the major curriculum content, with the expectation that students will understand the lifelong value of physical fitness, and plan and implement a physical fitness program with a variety of conditioning exercises and/or leisure activities.

The goals of the assessment program have been to:

- provide for continual monitoring of students’ fitness levels in targeted grades;
- provide additional test achievement information about students, schools, and districts;
- provide earlier identification of students not meeting a fitness standard; and
- improve instruction as a result of test analysis.

The assessment program was initially developed to provide clear goals for minimum fitness based on standards established by the American Alliance for Health, Physical Education, Recreation and Dance. The test did not provide standards for high levels of fitness, but rather established a minimum level for fitness based on health-related criteria. In addition, the assessment program provided standards established by the Connecticut State Department of Education and physical educators for an “at-risk” fitness level.

In 1990, the Connecticut General Assembly passed Public Act 90-234. With passage of this act, Connecticut joined a growing number of states that report accountability data by school, as well as by district or statewide. Section 10-220(c), of the Connecticut General Statutes requires that each local and regional board of education submit a Strategic School Profile report for each school and for the district as a whole. The profiles were designed to provide information on measures of student needs, school resources, and student and school performance. The primary purposes of the reports were: 1) to operate as an accountability system to inform the public about education outcomes; and 2) to act as a catalyst for promoting school and district improvement.

Student physical fitness performance data were reported on the profile, thus providing an opportunity for physical educators to assess and compare the performance of their students on school, district, and state levels. This also provided an opportunity to review and improve physical education programs.

Health-related standards were developed from national standards for the compendium of physical fitness assessments that are frequently used across the country on, notably, the President’s Challenge and the Physical Best fitness assessment batteries. The original fitness

assessment included sit-and-reach, sit-up, pull-up, one-mile run-walk, and body mass index (BMI) (reporting optional) components.

Pilot studies were conducted in 1996-97 to investigate various alternative assessments, with over 200 physical education teachers across the state participating in the pilot. A committee of experts in physical education and exercise science worked for two years on the revision of the assessment. The review process included a review of national publications and programs across the country. The Physical Fitness Assessment: *Second Generation* was announced in September 1998. The new version of the CPFA included the one-mile run-walk, partial curl-up, right-angle push-up, modified sit-and-reach, and the BMI (included as a non-reported, required element).

Health-related and challenge standards were developed through the collection of statewide data over the next year. Beginning in fall 2005, a series of forums began inviting comment and discussion from the physical education and exercise science field across Connecticut in a move to review the current state physical fitness assessment program, its purposes, components, administration, and timing, and whether there exists a need for updating or change.

### 3. The Connecticut Physical Fitness Assessment, Third Generation Program 2009-Present

The Third Generation of the Connecticut Physical Fitness Assessment Program (CPFA) was adopted for the 2009-10 school year and thereafter. It includes a variety of health-related physical fitness tests designed to assess muscle strength, muscular endurance, flexibility, and cardiovascular fitness. Criterion-referenced standards associated with good health are used rather than the previously applied normative standards. The improvements in the test battery are the result of thorough research and pilot testing of proposed changes by a representative group of districts across the state.

The Third Generation CPFA included a significant change in the aerobic endurance test. Beginning in 2009-10, districts had the option of using the one-mile run/walk or the **Progressive Aerobic Cardiovascular Endurance Run (P.A.C.E.R.)** to determine aerobic capacity.

Aerobic capacity (**VO<sub>2</sub> max**) is the most important area of any physical fitness program. 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. Aerobic capacity is also commonly referred to as cardiovascular fitness, cardiorespiratory fitness, aerobic fitness, aerobic work capacity, physical working capacity, and aerobic endurance.

The portions of the Third Generation CPFA include the following:

The **Progressive Aerobic Cardiovascular Endurance Run (P.A.C.E.R.)**, which is a multistage fitness test, performed in a shuttle-run format that helps children pace themselves effectively. It is generally regarded as more fun for younger children than the mile run because the pace can be set to music. The P.A.C.E.R. is a viable alternative to the mile run, even though both tests measure aerobic endurance, because it can be administered indoors or in a much smaller area than is needed for the mile run.

The **back-saver sit-and-reach** is a measure of joint flexibility, which is important to overall functional health. Stretchability and symmetry of the hamstring muscles at the back of the legs, and flexibility of the spine are important to general fitness, injury avoidance, and long-term back health. The revised version of the test allows greater accommodation for the differences in the length of the arms and legs of growing children, thus is more accurate, and reduces strain on the knees.

The **90° push-up** is a test of upper body muscle strength and endurance. Strength and endurance of the muscles of the upper body are important in activities of daily living, maintaining functional health, and promoting good posture.

The **curl-up** is a test of abdominal strength and endurance. Strength and endurance of abdominal muscles are important in promoting good posture and correct pelvic alignment, important elements in good back health. The previous version of the curl-up sometimes caused neck strain and did not account for the differences in the length of arms and legs of growing children. The improved version addresses these problems, as well as isolating the abdominal muscles for a more accurate indication of strength and endurance.



Since the first generation of the CPFA, assessment results have been submitted to the CSDE in total aggregate figures. Beginning in the 2022-23 school year, the CSDE will begin collecting individual student data. This collection will be accomplished using the CPFA Individual Student Data Collection Application. Data will once again be due by the end of the school year, but instead of aggregate counts districts will provide data for individual students. The shift from aggregate school level data to individual student data is designed to:

- improve the overall quality of the data collected;
- allow for the inclusion in the participation rate of groups not being held to the state standards (e.g., alternate assessments and nonbinary students choosing not to be held to a gender-based standard); and
- address one of the criticisms of the CSDE’s assessment/accountability system found by external reviewers.

## **4. Instructions for Test Administrators**

### ***Tested Grades***

All students in Grades 4, 6, and 8 must be tested, unless they have received a medical exemption. Furthermore, all high school students must be assessed at least once during their high school years (Grades 9-12).

While high schools can test students at any grade between Grades 9 and 12, for accountability purposes, the CSDE will continue to use the Grade 10 enrollment at the end of the school year to calculate the estimated participation rate. High schools may choose to continue to administer the CPFA to Grade 10 students. However, please note that the assessment offers age-based criterion-referenced standards, so the assessment in high school need not be limited to only students in Grade 10. Regardless of the grade of assessment, each student should have their results reported to the state only once in Grades 9-12.

All students in the tested grades, unless Medically Exempt (see definition below), must be assessed, not just those taking physical education during certain periods of the school year. Below are several exceptions that maybe encountered.

### ***Student with Assessment Accommodations***

An assessment administered with accommodations does not fundamentally alter the assessment or the standards applied. Instead, an accommodation allows a student to access the assessment in a manner consistent with their challenge(s).

Examples of test accommodations can include:

- using light pulses to communicate the cadence of an assessment to a student who is hard of hearing or deaf;
- allowing a student with a 504 plan for anxiety to be assessed without other students in attendance; and
- providing a guide to a visually impaired student who is running the mile.

For state reporting purposes, students receiving accommodations, but otherwise taking the standard assessment and being held to the standard for their age and gender, should be reported the same as a student without an accommodation which would mean indicating their Performance Zone (Assessment result codes 01, 02 or 03) in the data submission process.

### ***Students Who Take an Alternate Assessment***

Students with physical disabilities or conditions are expected to participate in the CPFA to the best of their abilities. For students who cannot access the assessment with accommodations, they may need an alternate assessment. These students are not considered exempt from testing. Instead, schools should have a process in place for determining those activities and standards that are appropriate for an individual student. If a test item is inappropriate for the individual student with a disability, schools should, to the best of their ability, provide these students an alternate assessment consistent with their abilities and education plan (either IEP or 504). In state reporting, students provided an alternate assessment should have their assessment reported as “Alternate Assessment Used” (Code 12) in the data submission process.

### ***Student Who Are Medically Exempt***

For a student to be considered medically exempt from taking the CPFA, **they must be unable to attend school due to a documented medical condition.** Given that the CPFA can be administered throughout the school year, it is likely that few students would qualify for a medical exemption. For students who are Medically Exempt, they should be reported as “Medically Exempt” (Code 13) in the data submission process.

In some cases, a student may have been injured and the student’s injury (e.g., broken hand or arm, concussion) may temporarily affect their ability to complete the standard CPFA. There is no exemption from administering the assessment to such students. They may, however, be eligible for accommodations under Section 504, but as stated above, this would not make them exempt from the CPFA, and only allow for accommodations.

Similarly, a student may be ill during the primary test period. This illness would not automatically qualify them as medically exempt. If the student returned to school after the illness and before the end of the school year, schools should administer the assessment.

To ensure exemptions are administered with fidelity, schools should maintain documentation supporting the exemption of a student. The CSDE reserves the right to request and/or examine such documentation.

### ***Students Who Did Not Participate or Refused to Participate***

Occasionally, a student will refuse to take one or more test items. In some cases, their refusal will be the student acting on their own accord. In other cases, they will be supported by their parent or guardian. Like all state assessments however, there is no provision allowing students to choose to not take the assessment. While this will not stop some students from refusing to participate, it is important to clarify that only students who are medically exempt (i.e., medically unable to attend school) do not need to be assessed. For students who did not participate or

refused to participate, they should be reported as “Did not Participate” (Code 00) in the data submission process.

### ***Student Who Participated but Were Not Held to a Gender-based Standard***

There may be students who participate in the standard assessment but use a customized or personalized set of standards. For example, nonbinary students who choose not to be held to a gender-based standard. In this case, the student is considered as participating, but must be reported as “Participated, but not held to a gender-based standard” (Code 11) in the data submission process.

### ***Test Administration***

A teacher holding a physical education certification must conduct the testing. Other adults may be trained to assist under the supervision of the certified physical education teacher (e.g., staff, parents, college students).

While other adults may assist in the administration of the CPFA, they must agree to treat the results of the assessment confidential and not discuss an individual student’s performance with anyone.

Students may not be used as monitors for testing. This is a productive teaching strategy during the instruction and practice of exercise, but it is not allowed during the testing. If grouping strategies are used for classroom and test management, they should be arranged in a manner that ensures close oversight by the test administrator.

### ***Timing of the Administration***

Schools can administer the CPFA at any time during the school year. The flexibility to assess students at any point during the school year includes assessing students during summer school. While testing during the summer will require updating data reported to the state, it affords students who might not otherwise be able to take the assessment an opportunity to be tested.

Administration of the different portions of the CPFA can be spread out over several months. This allows physical education educators to schedule portions of the assessment when it appropriately fits into their planned course of study. Schools that choose to use this flexibility will need to ensure that students are assessed using the standards for their age at the date of assessment, not at the beginning of the year or the beginning of the CPFA administration.

### ***Designating an Official Administration of Record***

While schools and districts may find it helpful to schedule pre- and/or post-tests for benchmarking, identification of areas of need, and tracking growth, schools and districts must designate one administration of the assessment that will be the official administration of record – the administration whose results will be reported to the CSDE for reporting and accountability purposes. While there may be some variation of testing windows between grades assessed and even classes within grades, the principle of each student being assessed only once for official purposes must be maintained.

### **Important Note:**

After the official administration has occurred, schools may ***not***:

- re-test some or all students in hopes of getting better results;
- use pre-test results of a student who refused to participate, who was temporarily unable to be assessed, or performed better on the pre-test; and
- dismiss the results of the official administration and use the results of a pre-test in its place.

A student who is absent during the official administration, who is temporarily unable to be administered (i.e., sick or injured), or transfers into a school after the assessment was administered may be tested after the school's chosen administration window.

If a school chooses to administer the different test items at different times throughout the school year, each test item must have a single official administration.

### ***Reporting Results***

The results of the CPFA are used for a variety of purposes, including the state's Next Generation Accountability System and the Profile and Performance Report. Accurate and timely reporting of assessment results is critical.

Standards used for reporting and goal setting are included as appendix A of this manual.

Testing report forms are found in the **Forms** section of this manual, beginning on page 26. They include:

- Class Record Forms – To be maintained by the physical education teacher.
- Individual Student Report Form – For use as a district and/or school decides (e.g., for reporting information to parents/guardians; for keeping individual student records; and for use with individual students in developing a plan).

Each district is responsible for the entry of individual student achievement levels for all CPFA assessments into the state CPFA Individual Collection application. While many districts use intermediate systems (i.e., systems that collect and manage raw student CPFA scores and output achievement levels), it is a district decision of how to manage these tasks.

### ***Documentation***

The CSDE reserves the right to verify submitted results, including the medical exemptions and/or provision of an alternate assessment to a student, for audit and program improvement purposes. To facilitate these verifications, schools and districts should maintain documentation of the assessments until the end of the school year following the tested year.

## 5. Responsibilities of Test Administrators

Test administrators must review the online assessment videos prior to the administration of the CPFA. These videos are designed to ensure consistency and accuracy in administration of testing procedures and maximize efficiency. Further, they help test administrators adequately prepare for the testing sessions. The videos are available on the [CSDE's CPFA help site](https://portal.ct.gov/SDE/Physical-Education/Physical-Education---Test-Administrators-Manual) in the related resources section (<https://portal.ct.gov/SDE/Physical-Education/Physical-Education---Test-Administrators-Manual>).

Test administrators should plan for the following:

### *Prior to Testing*

- View [CPFA Fitness Testing Videos](#), which show proper positioning and administration of the fitness tests.
- Ask physical education educators who have administered the CPFA to provide advice and offer helpful hints and suggestions prior to and during the testing period.
- Arrange for assistance, facility use, and other special scheduling as needed.
- Standardize equipment and check calibrations and measurements to assure consistency and accuracy.
- Practice with any equipment that will be used (i.e., audiotape or metronome, curl-up strips, sit-and-reach box, stopwatches). Have back-up equipment available.
- Make copies of the Class Record Forms – Boys, Girls and, if necessary, Students Not Held to State Standards.
- Inform parents and guardians about the testing.
- Prepare students with adequate instruction and practice time in the techniques to properly perform the test items.
- Use written descriptions of test items, the CPFA Fitness Testing Video, and demonstrations to meet various learning styles of students.
- Clarify levels of expectations. Post standards for students to see.

### *During Testing*

The organization and administration of the testing session is the responsibility of the test administrator.

- Any area conducive to activity and exercise that is safe and free from obstruction can be used. Consideration should be given to assure safety and fairness in testing.
- Though it is impossible to avoid all variables (e.g., wind, running surfaces), it is expected that teachers will make every effort to achieve accurate and consistent data.
- Outdoor testing should occur on days when the temperature, humidity, and air quality are at acceptable health levels. The physical education teacher or school administrator should consult with the school nurse or school medical advisor in making this judgment.
- Test items may be administered in any order. More than one test item may be administered in any one session. All students need not be tested on the same item in any one session.
- Students are not permitted to repeat test items in order to achieve better scores.

- Volunteer help is encouraged. Volunteers (i.e., classroom teachers, administrators, parents, college students) can be trained to assist with recording scores, counting, or other tasks. If volunteer help is utilized, such volunteers must agree to hold individual student results confidential.
- Students may not be used as scorers during testing. Using well-trained students is a productive teaching strategy during the instruction and practice of the tests but scoring their peers' test performance is not allowed.

### ***After Testing***

- The physical education teacher should keep a copy of all forms as a back-up and for analysis of data for individual students, as well as schools.
- All individual student data should be uploaded to the CPFA Individual Student Data Collection Application.
- Inform parents of results (Individual Student Report Form, page 29).
- Continue to include fitness instruction and activities throughout the year.
- Follow up with those students who did not meet minimal standards, (i.e., provide additional testing, develop a fitness plan, and work with parents or guardians and the school nurse).
- Keep documentation of all results, reports, and back up material supporting students who are medically exempted.

### ***General Test Administration Suggestions***

Use a circuit or station model, where the test administrator can focus on testing a small group of students performing one test item, while the other students work independently on other physical skills, challenges, or activities at other stations.

Promote a “Fitness Day,” where parent volunteers can be recruited to assist with the testing. This is a positive way to promote fitness and your physical education program within the community (please see the important note above regarding using volunteers).

Show the CPFA videos to students. Develop handouts for each test item that include a general description of the purpose and procedures for each component, as well as pictures of correct form. Design a bulletin board emphasizing the components of fitness, the tests, and activities to enhance each component.

Validity of the data is compromised if the tests are administered incorrectly, if there are errors in recording the results, if the examiners and/or students did not take the testing process seriously, or if teachers did not approach the assessment with professionalism.

## 6. Frequently Asked Questions

### ***What are criterion-referenced health standards and how were they determined?***

There are several types of standards commonly used with fitness tests. The CPFA uses criterion-referenced health standards or standards associated with good health. Scientific information is used to determine the amount of fitness needed to meet minimum health levels. The CPFA uses a “*Health-Related Fitness Zone*” to designate the range of fitness scores associated with good health. Scores falling below the Health-Related Fitness Zone are categorized as being in the “*Needs Improvement Zone*” to indicate that efforts are needed to bring the score into the Health-Related Fitness Zone. Fitness test performances that exceed the top score of the Health Fitness Zone are in the “*High Fitness Performance Zone.*” The goals in Health-Related Fitness Zone are criterion-referenced health standards because they are based on how much fitness a child needs for good health.

### ***Should feedback be provided?***

Providing feedback is an important element all assessment and should be provided to each student taking the assessment, as well as their parents. Feedback should focus on the status of students’ fitness, based on health criteria, and should include information to help interpret results. Teachers may include student reports as part of student physical education portfolios, along with other information related to important physical education objectives. Feedback shared with parents should incorporate ways parents can help students plan personal physical activity programs that are suited to their child’s personal needs.

### ***Why do some standards for boys and girls differ?***

Two factors must be considered when determining criterion-referenced health standards: inherent physiologic differences between genders and differences in health risks between genders. Due to physiologic and anatomic differences between the genders, there may be inherent performance differences between boys and girls for a specific fitness component. For example, differences in cardiac function and body composition between adolescent boys and adolescent girls result in adolescent boys, as a general rule, having a higher aerobic capacity than adolescent girls. Specifically, if the minimum VO<sub>2</sub> max for healthy girls is 28 ml. kg<sup>-1</sup>. min<sup>-1</sup> and for healthy boys, 32 ml. kg<sup>-1</sup>. min<sup>-1</sup>, setting the same standard for both on the One-Mile Run Test would not be appropriate. In the case of aerobic capacity, gender differences are considered, along with existing data on health risks, in order to determine the standards.

In addition to physiologic differences, the two genders do not face the same health risks during their growth. To reflect these differentiated health risks, the standards are adjusted.

### ***Why are some standards for boys and girls the same?***

When there is no valid reason for expecting a difference in the performance between boys and girls, the standards are the same. For example, young children, particularly in Grades 1-6, do not always possess the physical and physiological differences that appear as children approach puberty (Falls & Pate, 1993). When this is true, the same standards may be used for both genders. (Source: Welk, G. J. & Meredith, M.D. (Eds.). (2008). *Fitnessgram/Activitygram Reference Guide*. Dallas, TX: The Cooper Institute).



### ***Why are standards for aerobic endurance lower for girls than for boys?***

Inherent gender-related differences in body composition and in hemoglobin concentration cause aerobic capacity, referred to as VO<sub>2</sub> max, for boys and girls who have the same level of physical activity, to be different. The differences prior to puberty are very small or nonexistent (for hemoglobin concentration), but they increase during puberty and adolescence. These differences are linked in part to differences in the reproductive hormones. The lower VO<sub>2</sub> max in girls compared to boys with the same physical activity level are not thought to be associated with increased health risk. The standards for boys and girls reflect the different levels of VO<sub>2</sub> max that are associated with increased health risk in adults (*Source: Welk, G. J. & Meredith, M.D. (Eds.). (2008). Fitnessgram/Activitygram Reference Guide. Dallas, TX: The Cooper Institute.*)

### ***Should students who are physically challenged be included in fitness testing?***

Under Section 504 of the Rehabilitation Act of 1973, students with disabilities are required to be included to the best of their abilities: “No otherwise qualified handicapped individual in the United States... shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity which receives benefits from Federal financial assistance.”

In administering the CPFA, students with disabilities or any kind of special need should be included to the greatest extent possible. Fitness activities, exercises, and testing should be part of the physical education curriculum and offered to all students. Historically, fitness tests were designed for individuals without disabilities. The assessment included in this manual, though designed for students without disabilities, can be personalized to include all children. Because emphasis is placed on a personalized approach, and the reality that physical fitness profiles, components, and test items for students with a disability can require modification from those typically used, the many possibilities are not included in this document. Resources are available to assist physical educators with both the testing and standards that are appropriate for assessing the physical fitness of students with disabilities.

A child who is tested using an alternate assessment, with accommodations or with customized standards should be reported as indicated in section 4 on pages 6-8.

There are many resources available regarding levels of performance and the use of fitness assessments for students with disabilities.

### ***Should a student with a doctor’s note excusing them from the CPFA or specific test items be counted as exempt?***

Students with notes from medical professionals are not automatically exempted from being tested and do not count as exempt if they do not take the assessment. The note from a medical professional can be used by a 504 planning team to make a determination that accommodations or if an alternate assessment may be necessary.



***How should students taking adaptive physical education be assessed?***

Students taking adaptive physical education should be assessed to the best of their abilities using appropriate accommodations and/or the use of alternate assessments. In state reporting, these students should be reported as indicated in section 4 on pages 6-7.

***Is a student with an IEP or 504 Plan automatically considered exempt from testing?***

Students are expected to be assessed to the best of their ability. An IEP or 504 Plan may outline specific test accommodations or indicate the use of alternate assessments. If a student is given an alternate assessment or the standard test, but with the use of an accommodation, they should be reported as indicated in section 4 on pages 6-7.

***Can a parent choose to not have their student assessed?***

All students in the tested grades are expected to be assessed.

***How to record a student who refuses to take some or all of the CPFA?***

If a student takes any action associated with an assessment (for example, lines up for the one-mile run/walk), and then chooses not to continue, they should be recorded as a participant and given the lowest score. If a student refuses to take any steps toward completing a test item, they should not be counted as a participant and recorded as “Did not Participate” (Code 00) in the data submission process.

***Can a student retake a test item to receive a better score?***

For reporting purposes, each student is tested only once during the official administration of the assessment and their result in that administration is what must be reported to the state. Prior results and/or subsequent results cannot be reported.

For instructional purposes, a physical education teacher may choose to provide a student additional opportunities to improve their performance, but these results cannot replace the results of the student’s official administration.

***How should a student who does not identify as either female or male (i.e., a nonbinary student) be assessed?***

Schools should offer students who do not identify as either female or male (nonbinary) students, together with their parents or guardians (where appropriate), the option of being held to either of the existing standards with the explicit understanding that this choice is only for the CPFA and has no bearing on how they identify.

If a nonbinary student declines the option to be held to the standards of one of the predominant genders, they may choose to either not be held to any standard or work with school staff to establish challenging personalized goals to which they wish to work to achieve. These students should be reported as indicated in section 4 on page 8.

***How does a nonbinary student who chooses not to be held to a state standard impact a school's Next Generation State Accountability System score?***

The CPFA is one of the assessments included in Connecticut's Next Generation State Accountability System. Indicator 11 uses a combination of overall achievement (percentage of students meeting the Health Fitness Zone on all four assessments) and estimated participation rate (number of students taking all four assessments/June enrollment in the tested grades).

Only students held to one of the state standards can be considered to have achieved the Health Fitness Zone standard. Therefore, a nonbinary student who chooses not to be held to a state standard is not part of a school or district's overall achievement level for accountability purposes, regardless of whether they met their personalized goals. Such a student can however be included in a school's participation rate, if they are assessed on all four tests.

***How should a student who is ill or injured during the test period be reported? Are they considered medically exempt?***

Students who are ill or injured when they would normally be assessed should be administered the CPFA upon their return to health. Only if such illness or injury makes them unable to attend school for the remainder of the school year would they qualify as medically exempt.

## **7. Rationale for Test Items**

### ***Aerobic Endurance Assessments***

Aerobic endurance is the most critical element of physical fitness. Research indicates that healthy levels of aerobic endurance are associated with reduced risk of high blood pressure, coronary heart disease, obesity, diabetes, some forms of cancer, and other health problems in adults. Aerobic endurance is also referred to as cardiorespiratory fitness. The benefits of cardiorespiratory fitness are summarized in *Physical Activity and Health: A Report of the Surgeon General* (U.S. Department of Health and Human Services, 1996).

#### ***P.A.C.E.R.***

The P.A.C.E.R. (Progressive Aerobic Cardiovascular Endurance Run) is a multistage aerobic fitness test that provides a built-in warm-up and helps children pace themselves effectively. It is suggested that the test be set to a musical pace to create a valid, fun alternative to the one-mile run for aerobic endurance. Pilot testing showed that most students had a positive experience in performing the P.A.C.E.R. The test helps students to learn the skill of pacing, and the negative experience of some students in finishing last in a distance run is eliminated by this test.

#### ***One-Mile Run/Walk***

The one-mile run has been a standard element of the CPFA since its inception. Many students enjoy distance running and are highly motivated by the activity both for sport and recreation. Numerous physical education and athletic programs across the state include curricular and extracurricular distance running activities. Significant research conducted over a long period of time supports the value of running for children, as well as the validity and reliability of evaluating aerobic fitness with the one-mile run test.

### ***Flexibility Assessments***

#### ***Back-Saver Sit-and-Reach***

The recommended item for lower body flexibility assessment is the Back-Saver Sit-and-Reach Test. The assessment is conceptually similar to the more traditional Sit-and-Reach Test but is intended to be safer on the back by restricting flexion somewhat. With the traditional Sit-and-Reach assessment, the forward flexion movement of the trunk with the legs extended causes the anterior portion of the vertebrae to come closer together such that the discs bulge posteriorly and the muscles, fascia, and ligaments of the back are stretched. It also involves a forward rotation of the pelvis and sacrum, which elongates the hamstrings. Cailliet (1988) has pointed out that stretching both hamstrings simultaneously results in "overstretching" the low back, especially in terms of excessive disc compression and posterior ligament and erector spinae muscle strain. An additional advantage of the Back-Saver Sit and Reach Test, is that it allows the legs to be evaluated separately. This allows for the determination of symmetry (or asymmetry) in hamstring flexibility. In addition, testing one leg at a time eliminates the possibility of hyperextension of both knees.

## ***Muscular Strength and Endurance***

Balanced, healthy functioning of the musculoskeletal system requires that muscles be able to exert force or torque (measured as strength), resist fatigue (measured as muscular endurance), and move freely through a full range of motion (measured as flexibility). Positive relationships have been demonstrated between musculoskeletal fitness and health status (risk factors, disease development and all-cause mortality) in adults (Brill, Macera, Davis, Blair, & Gordon, 2000; Fitzgerald, Barlow, Kampert, et al., 2004; Jurca, Lamonte, Barlow, et al., 2005; Katzmarzyk & Craig, 2002; Kell, Bell & Quinney, 2001; Mason, Brien, Craig, Gauvin, & Katzmarzyk, 2007; Payne, Gledhill, Katzmarzyk, Jamnik & Ferguson, 2000b). The tracking of neuromuscular fitness has been shown to be moderately high (and higher than cardiovascular respiratory fitness) from adolescence to young adulthood (Twisk, Kemper, & vanMechelen, 2000). For these reasons, strength, endurance, and flexibility are viewed as important dimensions of health-related fitness.

## ***Upper Body Strength and Endurance***

### ***The 90° Push-up Test***

A number of assessments of upper arm and shoulder girdle strength/endurance have been used in various youth fitness batteries. The most commonly used assessment is the Push-up Test. The 90° push-up was selected as the recommended test item in the CPFA because it has some very practical advantages over the pull-up. The most important advantages are that it requires no equipment and very few zero scores occur. The use of a cadence (20 reps per minute) with the push-up has been found to eliminate many of the concerns about all-out speed tests. The majority of children can successfully perform the 90° push-up and have a more favorable experience.

## ***Abdominal Strength and Endurance***

### ***The Curl-Up Test***

A cadence-based curl-up test is recommended for abdominal strength and endurance testing in the CPFA battery. The selection of this test over a full sit-up assessment was based on extensive research and biomechanical analyses of arm placement, leg position, feet support, and range of motion of the movement (Plowman, 1992b). The use of a cadence (20 reps per minute) with the curl-up has been found to eliminate many of the concerns about the ballistic nature of one-minute all-out speed tests (Jette, Sidney, & Cicutti, 1984; Liemohn, Snodgrass, & Sharpe, 1988). Such timed tests, with legs straight or bent, often result in bouncing, jarring movements, and reflect more power than strength or endurance properties and/or allows the use of accessory muscles (Sparling, Milard-Stafford, & Snow, 1997). The use of a pace helps to avoid early fatigue based on starting too fast, standardizes the movement from person to person, and makes it easier to judge whether a full proper repetition has been completed. In addition, the use of a cadence allows students to focus on their own performance. There can be no competitive speeding up. In practice, the 3-second pace is slow enough to accomplish the intended goals described above, and fast enough to allow for efficient mass testing in school settings.

## 8. Test Item Descriptions

### ***P.A.C.E.R.***

The **P.A.C.E.R** (Progressive Aerobic Cardiovascular Endurance Run) is a paced, 20-meter shuttle run that is set to music and is increasing in intensity as time progresses. The P.A.C.E.R. 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—easier at the beginning and more difficult at the end.

### **Test Objective**

The objective of the test is to run as long as possible back and forth across a 20-meter space<sup>1</sup> at a specified pace that gets faster each minute. The purpose of the test is to measure cardio-respiratory or aerobic endurance (VO<sub>2</sub> max). The P.A.C.E.R. is a good indicator of the ability of the circulatory and respiratory systems to supply oxygen to functioning muscles, in other words the capacity to perform activities using large muscle groups over an extended period of time. The importance of cardiorespiratory fitness lies in the fact that heart disease is a leading cause of death in our society.

### **Equipment and Facilities**

- Stopwatch.
- Accurately measured 20-meter distance on a nonslippery and flat surface free of debris (see appendix C). A 15-meter course may be substituted if necessary (be sure to apply standards for 15-meter test).
- A device with sufficient volume and a digital copy of the cadence (i.e., downloaded MP3 [or similar] file or CD copy).
- Measuring tape, marker cones, pencils, copies of score sheets (found in the appendix).

### **Test Preparation for Students**

Students should receive ample instruction on pacing and practice in running for distance. Emphasis should be placed on developing the fastest pace that can be sustained for the full distance covered.

### **When to Stop**

The first time the student does not reach the line by the beep, the student stops where they are and reverses direction immediately, attempting to get back on pace. The test is completed for a student the next time (second time) they fail to reach the line by the beep. The two corrections do not have to be consecutive; the test is over after two total corrections. Students completing the test should continue to walk and stretch in a designated cool-down area. A student who remains at the end of the testing area through two beeps (does not run to the other end and back) should be scored as having two corrections, and, therefore, their test is over.

### **Scoring**

A lap is one 20-meter distance (from one end to the other). The scorer records the lap number by crossing off the corresponding lap number on the P.A.C.E.R. score sheet (appendix C1). The recorded score is the total number of laps completed by the student.

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<sup>1</sup> A 15-meter version of the test can be used by teachers with smaller-sized facilities. Specifications for the 15-meter version are included in the appendices.

Laps with form corrections (laps not completed by the next beep) are not considered correctly performed and should not be counted in the student's number of completed laps.

For test management purposes within the time constraints of class schedules, it is suggested that the duration of the P.A.C.E.R. test be limited to 20 minutes.

**Important:**

Schools should administer either the P.A.C.E.R. or the Mile Walk/Run, not both. While schools may change the aerobic capacity (**VO<sub>2</sub> max**) assessment they administer from year to year, they must use a single assessment for administration during a school year (no switching within a school year).

## ***One-Mile Run/Walk***

### **Test Objective**

The objective of the test is to cover the distance of one mile in as short a time as possible. The purpose of the test is to measure cardiorespiratory or aerobic endurance. The one-mile run/walk is a good indicator of the ability of the circulatory and respiratory systems to supply oxygen to functioning muscles, in other words the capacity to perform activities using large muscle groups over an extended period of time. The importance of cardiorespiratory fitness lies in the fact that heart disease is a leading cause of death in our society.

### **Equipment and Facilities**

- Stopwatch.
- Accurately measured mile on a level surface (see appendix B).

### **Test Preparation for Students**

Students should receive ample instruction on pacing and practice in running for distance. Emphasis should be placed on developing the fastest pace that can be sustained for the full distance covered. A warm-up time should precede the test.

### **Test Performance**

Students are instructed to run/walk one complete mile in the fastest time possible.

### **Scoring**

Record the minutes and seconds it takes for each student to complete the distance of one mile.

### **Important:**

Schools should administer either the P.A.C.E.R. or the Mile Walk/Run, not both. While schools may change the aerobic capacity (**VO<sub>2</sub> max**) assessment they administer from year to year, they must use a single assessment for administration during a school year (no switching within a school year).

## ***Back-Saver Sit-and-Reach***

### **Test Objective**

Maintaining adequate joint flexibility is important to overall health. Testing one leg at a time helps to identify any asymmetry in hamstring flexibility while avoiding hyperextension of both knees. The purpose of the sit-and-reach test is to measure predominantly the flexibility of hamstring muscles. Normal hamstring flexibility allows rotation of the pelvis in forward bending movements and posterior tilting of the pelvis for proper sitting. The objective of the test is to reach the specified distance on the right and left sides of the body.

### **Equipment**

The back-saver sit and reach test requires a 12" x 12" x 12" box, with a measuring scale placed on the top of the box that extends toward the student. The 9-inch mark on the scale is 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 (See appendix D for box specifications). Makeshift apparatuses are permitted as long as the 9-inch mark of the ruler is at the edge and the 'zero' is toward the student.

### **Test Description**

Testing one leg at a time, students sit with one knee bent (with that foot flat on the floor) and one leg straight, with the foot of the straight leg against the box. The student then reaches forward with both hands to the farthest point they can reach on the measuring scale.

### **Starting Position**

The student sits facing the box without shoes. The foot line is at 9 inches, with the zero end of the measuring device closest to the student. One leg is extended, with the foot placed flat against the end of the box. The other knee is bent, with the sole of the foot flat on the floor. The instep is positioned in line with, and 2 to 3 inches to the side of the straight knee. The knee of the extended leg should remain straight, and the hips must remain square to the box.

### **Test Performance**

The arms are extended forward over the measuring scale with hands placed one on top of the other. With palms down, the student reaches directly forward (keeping back straight and head up) with both hands along the scale four times and holds the position of the fourth reach for at least one 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 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 half-inch reached, to a maximum of 12 inches. To achieve the Health Fitness Zone, the student must meet the standards on both the right and left sides.



## **90° Push-Ups**

### **Test Objective**

The purpose of this test is to measure upper-body strength and endurance. The right-angle, or 90°, push-up is recommended as a test of upper-body strength and endurance. Muscle fitness is required for people of all ages in order to perform daily living and recreational activities with vigor and undue fatigue. The objective of the test is to complete as many 90° push-ups as possible at a specified pace.

### **Equipment**

- It is necessary to acquire or prepare a recording of a consistent cadence of one push-up every three seconds (1.5 seconds up and 1.5 seconds down). A cadence recording of two minutes will allow the completion of 40 push-ups (See appendix G for cadence recording instructions).
- A right-angle marker (See appendix E for instructions).
- Push-ups may be performed on a mat.

### **Test Description**

Measuring upper body strength and endurance, students lower the body to a 90° elbow angle and push up. Set to a specified pace, students complete as many repetitions as possible.

#### ***Starting Position***

- The student assumes the prone position (face down).
- Hands are placed slightly wider than shoulder width with fingers stretched out.
- Legs are straight and parallel.
- Feet cannot be resting against an object.
- The back is straight.
- The head is positioned so the student is looking slightly in front of their hands.

### **Pre-Test Observation/Marking**

Have students lower themselves to the appropriate right-angle position. This allows the student to feel and the teacher to sight the correct position. The use of a right-angle marker, set in front of the student's elbow as a guide, allows for a more accurate sighting (position will vary for each student).

### **Test Performance**

The test begins in the up position.

The test administrator starts the cadence and signals the students to begin. Students may continue until they wish to stop or have made two form corrections.

Students begin performing push-ups according to the cadence. The correct push-up is performed to a pace of one complete push-up every three seconds (1.5 seconds down and 1.5 seconds up, with no hesitation). Push-ups are continuous, with the muscles in a constant state of contraction and no resting. Emphasis is placed on the arm and shoulder muscles remaining engaged throughout the assessment.

## Scoring

Record the total number of correctly performed push-ups. One complete push-up begins and ends in the up, or straight-arm, position.

Incorrect push-up performance, referred to as a form correction, includes:

- arching or sagging of the back;
- not achieving the right angle at the elbow during the down phase;
- not achieving the straight arm position during the up phase;
- knees touching the floor; or
- being off cadence.

The test is terminated when the student has any two corrections.

Push-ups with form corrections are not considered correctly performed and should not be counted in the number completed by the student.

## ***Curl-Ups***

### **Test Objective**

The partial curl-up measures abdominal strength and endurance. Abdominal fitness is important to good health because low levels are associated with bad posture and lower back pain in later years. The test objective is to complete as many curl-ups as possible up to a maximum of 75 at a specified pace.

### **Equipment**

It is necessary to prepare or secure an audiotape or use a consistent cadence of one curl-up every three seconds (1.5 seconds up and 1.5 seconds down), which is 20 curl-ups per minute. A cadence recording of 3 minutes will allow the completion of 60 curl-ups. (See appendix G for cadence recording instructions.)

- A gym mat and a measuring strip are needed for every two students. The strip may be made of cardboard, tape, rubber, smooth wood, or any similar thin, flat material, and should be 30-35 inches long. For 5-9-year-olds, a 3-inch wide strip is required. For 10-year-olds and up, the strip should be 4.5 inches wide. (See appendix F for curl-up strip specifications.)
- A piece of paper, 8.5 X 11 inches, is also required.

### **Test Description**

Measuring abdominal strength and endurance, students lie down in a supine position with knees bent and feet unanchored flat on the floor. The knees and feet should be slightly apart and arms straight and parallel to the trunk with palms of hands resting on the mat. After the student has assumed this position, a partner is to place the measuring strip on the mat under the tested partner's legs so that the fingertips are just touching the nearest edge of the strip. The shoulders should be relaxed and un-hunched before the strip is placed. The partner also places a piece of paper under the tested partner's head. This is to provide an easily observable touching of the head to the mat on each repetition, as the paper will make a crinkling sound when the back of the head contacts it.

Set to a specified pace, students complete as many repetitions as possible to a maximum of 75 at the specified pace/cadence.

### **Test Performance**

The student assumes the starting position. The test administrator starts the cadence and signals the student to begin.

Keeping heels in contact with the mat, the student is to curl up slowly, sliding fingers across the measuring strip until fingers reach the other side. Then the student uncurls until the head crinkles the paper on the mat. Movement should be slow and gauged to the audible cadence of 20 curl-ups per minute, or one curl-up every three seconds.

## Scoring

The score is the total number of correctly performed curl-ups within the time limit. A curl-up is complete each time the student's head returns to the mat.

### *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 both sides of the measuring strip for a completed repetition.

The test is terminated when the student has performed any two corrections.

Curl-ups with form corrections are not considered correctly performed and should not be counted in the number completed by the student.

## 9. Data Collection and Reporting Form — Girls - Class Record Form

Grade: \_\_\_\_\_ Date: \_\_\_\_\_ Class: \_\_\_\_\_ Test Administrator: \_\_\_\_\_

<b>Important:</b> The CSDE reserves the right to verify submitted data. This form should be maintained until the end of the next school year.	Age When testing began	√ If Medically Exempt	<b>Aerobic Endurance</b> One-Mile Run/Walk (min/sec) OR P.A.C.E.R. (# laps correctly competed)		Fitness Zone Standard Achieved	<b>Flexibility</b> Back-Saver Sit-and-Reach		Fitness Zone Standard Achieved	<b>Muscular Strength/Endurance</b> Curl-ups (#correctly completed)	Fitness Zone Standard Achieved	<b>Upper-Body Strength</b> 90° Push-ups (#correctly completed)	Fitness Zone Standard Achieved
			One Mile	PACER		Left	Right					
Student Name												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

Fitness Zone Coding

Code	Level	Code	Level	Code	Level	Code	Level
01	Needs Improvement Zone	03	High Fitness Performance Zone	12	Alternate Assessment Used	00	Did not participate
02	Health Fitness Zone	11	Participated, but not held to a gender-based standard	13	Medically Exempt		

**RETAIN THIS FORM**

# 10. Data Collection and Reporting Form — Boys - Class Record Form

Grade: \_\_\_\_\_ Date: \_\_\_\_\_ Class: \_\_\_\_\_ Test Administrator: \_\_\_\_\_

<b>Important:</b> The CSDE reserves the right to verify submitted data. This form should be maintained until the end of the next school year.	Age When testing began	√ If Medically Exempt	<b>Aerobic Endurance</b> One-Mile Run/Walk (min/sec) OR P.A.C.E.R. (# laps correctly competed)		Fitness Zone Standard Achieved	<b>Flexibility</b> Back-Saver Sit-and-Reach		Fitness Zone Standard Achieved	<b>Muscular Strength/Endurance</b> Curl-ups (# correctly completed)	Fitness Zone Standard Achieved	<b>Upper-Body Strength</b> 90° Push-ups (#correctly completed)	Fitness Zone Standard Achieved
			One Mile	PACER		Left	Right					
Student Name												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

Fitness Zone Coding

Code	Level	Code	Level	Code	Level	Code	Level
01	Needs Improvement Zone	03	High Fitness Performance Zone	12	Alternate Assessment Used	00	Did not participate
02	Health Fitness Zone	11	Participated, but not held to a gender-based standard	13	Medically Exempt		

**RETAIN THIS FORM**

# 10.Data Collection and Reporting Form — Students Not Held to State Standards - Class Record Form

Grade: \_\_\_\_\_ Date: \_\_\_\_\_ Class: \_\_\_\_\_ Test Administrator: \_\_\_\_\_

<b><u>Important:</u></b> The CSDE reserves the right to verify submitted data. This form should be maintained until the end of the next school year.	Age When testing began	√ If Medically Exempt	Aerobic Endurance		√ If Met Personalized goal	Flexibility		√ If Met Personalized goal	Muscular Strength/Endurance	√ If Met Personalized goal	Upper-Body Strength	√ If Met Personalized goal
			One-Mile Run/Walk (min/sec) OR P.A.C.E.R. (# laps correctly competed)	PACER		Back-Saver Sit-and-Reach	Right					
Student Name			One Mile	PACER		Left	Right					
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

**Note:** A student who refuses to take any actions associated with a test item is not considered to have participated in the test item. A student who refuses to complete an item, but started the item, is considered to have participated, but received the lowest score possible.

**RETAIN THIS FORM**

Assessment

Individual Student Report

**Student Information**

Name: \_\_\_\_\_ Grade: \_\_\_\_\_ Age: \_\_\_\_\_

School District: \_\_\_\_\_ School \_\_\_\_\_

Instructor Name: \_\_\_\_\_

**Test Performance Results**

Health-Related Fitness Component	Passing Standard	Student Score		Health Fitness Zone Standard			Student Refused <input checked="" type="checkbox"/>	Personalized Standard Applied <input checked="" type="checkbox"/>
				Not Met <input checked="" type="checkbox"/>	Met <input checked="" type="checkbox"/>	Exceeded <input checked="" type="checkbox"/>		
Aerobic endurance (One Mile Run/Walk or P.A.C.E.R)								
Flexibility (Back-Saver Sit-and-Reach)		Left	Right					
Upper Body Muscle Strength and Endurance (90° Push-Up)								
Lower Body Muscle Strength and Endurance (Curl-Up)								



# 11. Appendixes

## Appendix A

### Standards for Health-Related Fitness Zone

#### Standards for Health-Related Fitness Zones

I = Needs Improvement Zone (does not meet health-related standard)  
 F = Health Fitness Zone (meets health-related standard)  
 H = High Fitness Performance Zone (exceeds health-related standard)

#### Boys

Age	20-meter PACER			15-Meter PACER			One-Mile Run/Walk			Sit-and-Reach			90° Push-Ups			Curl-Ups					
	Zone	I	F	H	I	F	H	I	F	H	I	F	H	I	F	H	I	F	H		
8	0-22*	23-61*	>61*	I	0-29*	30-80*	>80*	I	>12:30*	12:30-10:00*	<10:00*	0-7	8	I	0-4	5-13	>13	I	0-5	6-20	>20
9	0-22*	23-61*	>61*	I	0-29*	30-80*	>80*	I	>12:00*	12:00-9:30*	<9:30*	0-7	8	I	0-5	6-15	>15	I	0-8	9-24	>24
10	0-22	23-61	>61	F	0-29	30-80	>80	F	>11:30	11:30-9:00	<9:00	0-7	8	F	0-6	7-20	>20	F	0-11	12-24	>24
11	0-22	23-72	>72	F	0-29	30-94	>94	F	>11:00	11:00-8:30	<8:30	0-7	8	F	0-7	8-20	>20	F	0-14	15-28	>28
12	0-31	32-72	>72	F	0-41	42-94	>94	F	>10:30	10:30-8:00	<8:00	0-7	8	F	0-9	10-20	>20	F	0-17	18-36	>36
13	0-40	41-83	>83	F	0-53	54-108	>108	F	>10:00	10:00-7:30	<7:30	0-7	8	F	0-11	12-25	>25	F	0-20	21-40	>40
14	0-40	41-83	>83	F	0-53	54-108	>108	F	>9:30	9:30-7:00	<7:00	0-7	8	F	0-13	14-30	>30	F	0-23	24-45	>45
15	0-50	51-94	>94	F	0-66	67-123	>123	F	>9:00	9:00-7:00	<7:00	0-7	8	F	0-15	16-35	>35	F	0-23	24-47	>47
16	0-60	61-94	>94	F	0-79	80-123	>123	F	>8:30	8:30-7:00	<7:00	0-7	8	F	0-17	18-35	>35	F	0-23	24-47	>47
17	0-60	61-106	>106	F	0-79	80-138	>138	F	>8:30	8:30-7:00	<7:00	0-7	8	F	0-17	18-35	>35	F	0-23	24-47	>47
17+	0-71	72-106	>106	F	0-93	94-138	>138	F	>8:30	8:30-7:00	<7:00	0-7	8	F	0-17	18-35	>35	F	0-23	24-47	>47

#### Girls

Age	20-meter PACER			15-Meter PACER			One-Mile Run/Walk			Sit-and-Reach			90° Push-Ups			Curl-Ups					
	Zone	I	F	H	I	F	H	I	F	H	I	F	H	I	F	H	I	F	H		
8	0-6*	7-41*	>41*	I	0-8	9-54*	>54*	I	>12:30*	12:30-10:00*	<10:00*	0-8	9	I	0-4	5-13	>13	I	0-5	6-20	>20
9	0-6*	7-41*	>41*	I	0-8	9-54*	>54*	I	>12:30*	12:30-9:30*	<9:30*	0-8	9	I	0-5	6-15	>15	I	0-8	9-22	>22
10	0-6	7-41	>41	F	0-8	9-54	>54	F	>12:30	12:30-9:30	<9:30	0-8	9	F	0-6	7-15	>15	F	0-11	12-26	>26
11	0-14	15-41	>41	F	0-18	19-54	>54	F	>12:00	12:00-9:00	<9:00	0-9	10	F	0-6	7-15	>15	F	0-14	15-29	>29
12	0-14	15-41	>41	F	0-18	19-54	>54	F	>12:00	12:00-9:00	<9:00	0-9	10	F	0-6	7-15	>15	F	0-17	18-32	>32
13	0-22	23-51	>51	F	0-29	30-67	>67	F	>11:30	11:30-9:00	<9:00	0-9	10	F	0-6	7-15	>15	F	0-17	18-32	>32
14	0-22	23-51	>51	F	0-29	30-67	>67	F	>11:00	11:00-8:30	<8:30	0-9	10	F	0-6	7-15	>15	F	0-17	18-32	>32
15	0-31	32-51	>51	F	0-41	42-67	>67	F	>10:30	10:30-8:00	<8:00	0-11	12	F	0-6	7-15	>15	F	0-17	18-35	>35
16	0-31	32-61	>61	F	0-41	42-80	>80	F	>10:00	10:00-8:00	<8:00	0-11	12	F	0-6	7-15	>15	F	0-17	18-35	>35
17	0-40	41-61	>61	F	0-53	54-80	>80	F	>10:00	10:00-8:00	<8:00	0-11	12	F	0-6	7-15	>15	F	0-17	18-35	>35
17+	0-40	41-72	>72	F	0-53	54-94	>94	F	>10:00	10:00-8:00	<8:00	0-11	12	F	0-6	7-15	>15	F	0-17	18-35	>35

\*Indicates experimental performance standard, based on expert opinion

6/11/09

Also available online at <https://portal.ct.gov/SDE/Physical-Education/Physical-Education---Test-Administrators-Manual/Related-Resources>

## *Appendix B*

### *Suggested Layouts for the One-Mile Run/Walk*

The one-mile run/walk can be performed on any flat surface that measures one mile in distance. The course can be laid out in any shape that uses the area as efficiently as possible, maximizes straightaway running, and minimizes corners or turns. It may be necessary to lay out a course around the perimeter of the school property or around the school building. Use of a measuring wheel or tape will provide accuracy. Pacing out an estimated mile is not acceptable. There are 5,280 feet or 1,760 yards in one mile.

1. A 440-yard track will require four laps to complete one mile.
2. An area marked off with 55 yards on all four sides will require eight laps to complete the mile. One lap would equal 220 yards ( $55 \times 4$ ). Eight laps would equal 1,760 yards ( $220 \times 8$ ).
3. An area marked off with 27.5 yards on all four sides will require 16 laps to complete the mile. One lap would equal 110 yards ( $27.5 \times 4$ ). Sixteen laps would equal 1,760 yards ( $110 \times 16$ ).

## Appendix C

### ***Specifications for Administering the P.A.C.E.R.***

#### ***Test Preparation Instructions***

Mark the 20-meter (21-yard, 32-inch) course with marker cones to divide lanes and a tape or chalk line at each end.

Make copies of score sheet A and B for each group of students to be tested.

Before the actual testing episode, allow students to listen to several minutes of the recording so they know what to expect. Students should be allowed two practice opportunities before the day of the actual test.

#### ***Organizing the Test***

Assign or allow students to select a partner. Students who are performing the test form a line along the starting line.

At the signal to start, students run across the 20-meter distance and touch the line with their foot by the time the beep sounds. At the sound of the beep, they turn around and run back to the other end. If some students get to the line before the beep, they must wait for the beep before running in the other direction. Students continue in this manner until they fail to reach the line before the beep for the second time.

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 alerts the runners that the pace is about to get faster.

For test management purposes within the time constraints of class schedules, it is suggested that the duration of the P.A.C.E.R test be limited to 20 minutes. Twenty minutes is sufficient time for completion of the number of laps required for the High Fitness Performance Zone Standards.

## Appendix C1

### Sample Score Sheet for P.A.C.E.R.

Contributed by the Physical Education Staff at Naugatuck High School (updated 7/2019)

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#### PACER Test – Score Sheet

Performer: \_\_\_\_\_ Class/Period: \_\_\_\_\_ Age: \_\_\_\_\_

Date: \_\_\_\_\_ Score: \_\_\_\_\_

**Draw ‘X’ for each completed lap, ‘M’ for non-completed laps.  
‘M’ Laps do not count toward the total completed laps.**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

## *Appendix C2*

### *Sample P.A.C.E.R. Warm-Up and Training Activities*

(Separate attachment to manual)

## *Appendix D*

### *Sit-and-Reach Box Specifications*

Sit-and-reach boxes are available for purchase from fitness equipment vendors, can be constructed from wood, or can be easily fashioned from readily accessible materials.

Here are some flexibility testing apparatus suggestions:

1. Use a sturdy box at least 12 inches tall. A flat side of the box should be facing up. Attach a ruler to the top flat side so that the 9-inch mark is exactly parallel with the vertical plane against which the subject's foot will be placed and the zero-end is nearer the subject.
2. Use a bench that is about 12 inches wide. Turn the bench on its side. Attach a ruler to the top flat side so that the 9-inch mark is exactly parallel with the vertical plane against which the subject's foot will be placed and the zero-end is nearer the subject.

## *Appendix E*

### *Using a Right-Angle Marker for the 90° Push-Up*

A variety of effective methods can be implemented to illustrate the 90° angle to be achieved at the elbows of the test subject at the lowest point of the push-up.

The use of a carpenter's right angle, a T-square, or simply two pieces of wood fastened together at a right angle is suggested. This device, placed upright in front of each student being tested, provides a good visual aid for the test administrator and the student. Ideally, if something can be created that slides up and down, this would allow adjustment for individual size differences.

Once the distance to which the subject should lower her/himself to achieve the 90° elbow-flex is determined, an object such as a cone, a soft ball, or other piece of pliable equipment can be placed under the student's chest or shoulder to aid in reinforcing the appropriate 'down' level for each push-up repetition. The size and height of the equipment that is used may vary depending on the age and size of the students.

## *Appendix F*

### *Curl-Up Strip Specifications*

Curl-up strips can be made from cardboard, poster board, linoleum, vinyl, thick tape, or any flat material that has texture sufficient for the test-taker to feel with the fingertips.

Curl-Up Measuring Strip

Ages	Length	Width
5-9 years	30+ Inches	3 Inches
10+ years	30+ Inches	4.5 Inches

For correct performance of the curl-up, the student must move the fingers 3 inches (for ages 5-9 years) and 4½ inches (for ages 10 and above). The student should be able to feel the stopping point rather than needing to see it.



## *Appendix G*

### *Developing Audio Guides*

The curl-ups and push-ups are performed to a cadence of one complete repetition every three seconds. This is best accomplished through a digital recording. The simplest way to do this is to record a metronome set at 40 beats per minute. Each click of the metronome represents the up or down phase of a curl-up or push up, (1.5 seconds up and 1.5 seconds down). In other words, two clicks represent one complete repetition.

At the beginning of the recording, some dialogue may be included. (Example: For the curl-ups; “Students take your positions, this test will begin in five seconds..., three, two, one, up, down.”) The use of verbal cues, “up/down,” can be helpful and included, as long as the cadence is the same. Prepare your recording well ahead of time and practice using it with your students. This will help the students to become comfortable with the pacing and scores will be more reliable.

#### Recording Requirements:

- **90° Push-Up Recording:** In order to score in the High Fitness Performance Zone, a minimum of 35 push-ups must be completed by 17-year-old and older boys, which take 1 minute and forty-five seconds (1:45). So, the duration for the 90° push-up recording should be at least 2 minutes, allowing for 40 push-ups. The High Fitness Performance Zone for girls’ push-ups begins at 15 push-ups.
- **Curl-Up Recording:** In order to score in the High Fitness Performance Zone, a minimum of 47 curl-ups must be completed by 17-year-old and older boys, which take 2 minutes and twenty-one seconds (2:21). So, the duration for the curl-up recording should be at least 3 minutes, allowing for 60 curl-ups. The High Fitness Performance Zone for girls’ curl-ups begins at 35 curl-ups.