

# Design Specs for Cooper Institute-E6203

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**Interior Designer:** Joe Buck

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# FitnessGram® Administration Manual

*The Journey to MyHealthyZone™*

**FIFTH EDITION**

**The Cooper Institute**



**Human Kinetics**

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# Manual Quick Guide

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This manual provides important information on the fundamental aspects of FitnessGram and the role it plays within a complete physical education or physical activity program. The manual is divided into three parts:

- Part I provides important background information including testing guidelines and appropriate uses.
- Part II provides FitnessGram test administration protocols, details on how to administer each test, and information on interpreting assessment results.
- Part III provides information on ActivityGram, ActivityGram Lite (Youth Activity Profile), and ActivityLog administration. Also included are guidelines for interpreting the physical activity results.

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Throughout this manual, the components listed below, provide additional information on incorporating FitnessGram, ActivityGram, ActivityGram Lite, and Activity Log into a physical education program.

This edition comes with access to an accompanying web resource. It can be accessed by using this URL: bb. Once you are there, follow the instructions and use this pass code to sign in: bb. The electronic media resource includes video clips for all of the test protocols, music cadences for tests like the PACER, and PDF files of forms and charts. The test protocol video clips demonstrate the proper way to implement each test and could also be used to demonstrate the proper technique to students. You can view the content on a computer or laptop connected to the Internet or WiFi.

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## Key to Icons

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FG Spotlights provide a real world testimonial from avid users.



How to Apply relates content to best instructional practices.



Key Concepts emphasize main ideas at the end of each chapter.



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# Acknowledgments

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Sincere appreciation is extended to the following people who serve on the FitnessGram Scientific Advisory Board. Many dedicated hours have been spent in the continued development and refinement of the total program.

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# Introduction

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During the last few years, many significant developments have occurred in the physical education field. At the request of the Robert Wood Johnson Foundation, the Institute of Medicine (IOM) appointed a study committee to assess the relationship between youth fitness test items and health outcomes, recommend the best fitness test items, provide guidance for interpreting fitness scores, and provide an agenda for needed research. The IOM committee presented its findings and recommendations in *Fitness Measures and Health Outcomes in Youth*. For the purposes of this report, “youth” is defined as children aged 5-18. The report was released to the public on September 27, 2012. The Cooper Institute’s Scientific Advisory Board reviewed the report at its meeting in June 2013 and has outlined an action plan to address IOM recommendations and future changes to improve FitnessGram. A copy of the report can be downloaded at this site: [http://www.nap.edu/catalog.php?record\\_id=13483](http://www.nap.edu/catalog.php?record_id=13483)

One change to FitnessGram and ActivityGram that software users will find helpful is that all of the Cooper Institute’s tests and programs are now accessed through a common dashboard called MyHealthyZone™. This new name recognizes the Cooper Institute’s emphasis that overall health is not just fitness and not just activity, but a combination of many factors that include fitness, activity, sport, and healthy eating habits. The MyHealthyZone dashboard is personalized for each user administrator, teacher, student or parent. In addition to the assessments events and results, MyHealthyZone features new data management and analysis tools, new reports and SmartCoach (a content library that provides users with user-specific information and materials to educate and inform about physical fitness and physical activity). The text of this manual focuses on describing how to perform and utilize data gathered by using the FitnessGram test protocol as well as putting ActivityGram and ActivityGram Lite to use with students to help them achieve overall fitness and activity goals that will impact their health for a lifetime. The benefits of MyHealthyZone will be apparent to all who use the Cooper Institute’s software and has become the title for the program, overall. This manual’s text doesn’t remind users about MyHealthyZone, because for software users,

the use will be automatic. Those previously using the software need only to update to new version or purchase a license for the FitnessGram software. Once that has been accomplished and you receive your login information go to <http://MyHealthyZone.fitnessgram.net> and get started. When a user logs in, MyHealthyZone recognizes that user as an administrator, teacher, student or parent and begins to personalize their MyHealthyZone dashboard. The dashboard will continue to add more personalization and suggested resources as users have additional interaction with the software. Instructors who do not have the software will still be able to utilize aspects of FitnessGram and ActivityGram using the reproducible forms and charts available on the accompanying web resource, but will do so without the MyHealthyZone dashboard, and their experience using FitnessGram or ActivityGram will be greatly limited.

In September 2012 a national partnership was formed by two government agencies and three nonprofits: The Cooper Institute (CI); Centers for Disease Control and Prevention (CDC); the President’s Council on Fitness, Sports, and Nutrition (PC); The Society of Health and Physical Educators of America (SHAPE America); and The National Foundation on Fitness Sport and Nutrition (NFFS). This partnership created the Presidential Youth Fitness Program, better known as the PYFP and replaced the old President’s Youth Fitness Test. The outcome of the program is to get schools in America using FitnessGram to assess students, support teachers through staff development, and provide incentives/awards to students by the year 2018.

An additional significant contribution to the field has been the NFL PLAY 60 Campaign. The NFL Foundation, the charitable foundation of the National Football League, partners with organizations to tackle childhood obesity through its NFL PLAY 60 program. Part of the NFL’s long-standing commitment to health and fitness, NFL PLAY 60 challenges youth to become physically active for at least 60 minutes each day. NFL PLAY 60 is also in partnership with The National Dairy Council as part of the Fuel Up to Play 60’s in-school, after-school, and team-based programs. GENYOUth in collaboration with The National Dairy Council,

American College of Sports Medicine, and American School Health Association released *The Wellness Impact Report* in 2013, which addresses the importance of increased physical activity and improved nutrition to enhance student's learning. A copy of the report can be downloaded at this site: [http://www.genouthfoundation.org/wp-content/uploads/2013/02/The\\_Wellness\\_Impact\\_Report.pdf](http://www.genouthfoundation.org/wp-content/uploads/2013/02/The_Wellness_Impact_Report.pdf)

The partnership between NFL PLAY 60 and The Cooper Institute's *FitnessGram* includes implementing the *FitnessGram* assessment in schools throughout the 32 NFL franchise communities. The assessment is part of a longitudinal study that tracks health-related fitness results and analyzes how best to intervene. The results of this study will be provided to local, state, and national policy makers.

Lastly, *FitnessGram* has been the gold standard youth fitness metric in research studies over the past 20 years. The most cited of all studies is the Texas Youth Fitness Study. It was conducted in partnership with three universities, the Cooper Institute,

and the Robert Wood Johnson Foundation in 2009. The study explored three key questions:

- Is physical fitness associated with academic performance?
- Can physical education teachers collect high-quality information on student fitness?
- Are school policies and environments associated with youth fitness?

A summary of the study can be found at this site: [http://www.rwjf.org/content/dam/farm/reports/program\\_results\\_reports/2011/rwjf69806](http://www.rwjf.org/content/dam/farm/reports/program_results_reports/2011/rwjf69806)

Collectively, these developments provide physical educators and youth fitness promoters with considerable support and guidelines for promoting physical activity and fitness in children. *FitnessGram* keeps pace with these developments and keeps you on the cutting edge of youth fitness promotion. The final product is the result of the cooperative efforts of many individuals.

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*Fitnessgram* was created in 1982 by The Cooper Institute to provide an easy way for physical education teachers to report to parents on children's fitness levels. Then and now, students are assessed in these areas of health-related fitness: cardiorespiratory fitness, muscle strength, muscular endurance, flexibility, and body composition. Scores are evaluated against objective criterion-based standards, called Healthy Fitness Zone® standards, that indicate the level of fitness necessary for health. *Fitnessgram* software generates personalized reports, which contain objective, personalized feedback and positive reinforcement. These reports serve as a communications link between teachers, students, and parents. Teachers without access to the *FitnessGram* software will be able to use the *FitnessGram* assessment and the online *FitnessGram* calculator to calculate and track scores for their classes. Any individual feedback and activity suggestions would be developed by the teacher.

Individual reports provide feedback based on whether the child achieved the criterion-referenced standards for physical activity or fitness and foster a student's ability to read and interpret results and experience goal setting. The use of health-related criteria helps to minimize comparisons between children and to emphasize personal fitness for health rather than goals based on performance.

Aggregate reporting capabilities allow campus, district, and state administrators to view de-identified, summary data for an entire campus, district or state. It also provides surveillance data allowing for the identification of trends to inform curricular and programmatic decisions. The following list shows the various modules found within the *FitnessGram*

# PART I

## Introduction to *FitnessGram* and *ActivityGram*

application that can be used to help promote awareness, and highlight the importance of fitness and physical activity:

- *FitnessGram* is a complete battery of health-related fitness items that are scored using criterion-referenced standards. These standards are age and gender specific and are established based on how fit children need to be for good health. The *FitnessGram* section of the software also includes a knowledge test containing six levels designed to assess students' understanding of the components of health related fitness.
- *ActivityGram* is an activity assessment tool that provides detailed information on a student's level of physical activity. Feedback is provided on the amount and type of activity that a child performs. Teachers may use either a three-day recall assessment or a fifteen question survey.
- *Activity Log* allows students to track their physical activity, either in step counts or minutes of activity for each day. Teachers can issue challenges to students to increase their physical activity, and challenges can be issued from class-to-class or even school-to-school.
- *SmartCoach*, the new content library, is packed with staff development resources, communication materials, instructional materials and resources to educate and inform students and parents.

The diverse components and features of *FitnessGram* are designed to assist teachers and students in establishing healthy habits for a lifetime.

FitnessGram Part I includes: the mission and philosophy of the *FitnessGram* program (Chapter 1), principles of fitness education and assessment guidelines within physical education (Chapter 2),

guidelines needed to promote physical activity in children (Chapter 3), and strategies for communicating with stakeholders (Chapter 4).

### Additional Resources

Administrators and Teachers will find information on the validity and reliability of the tests and the rationale behind the establishment of the standards is available in the *FitnessGram Reference Guide*. The *Guide* has been developed in a question-and-answer format and is intended to address specific questions associated with use and interpretation of the *FitnessGram* program assessments. The information in the *Guide* may also be of interest to some parents who want more information about fitness. To facilitate its use, it is available on the Internet from the *FitnessGram* Web site. Go to this site: <http://www.cooperinstitute.org/youth/fitnessgram/fitnessgram10/scienceand> click on Read More under Reference Guide.

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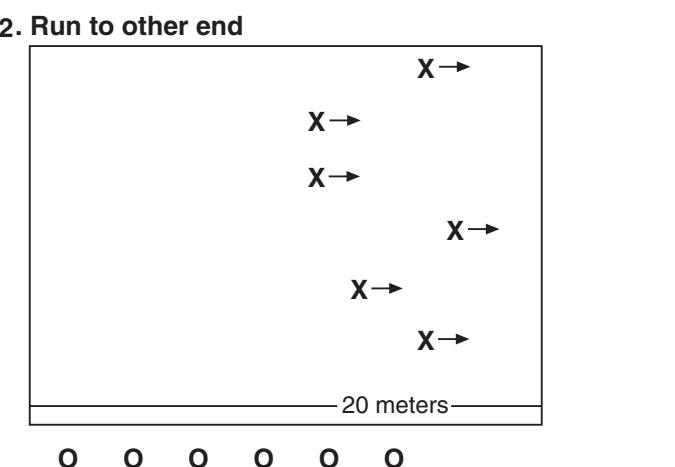
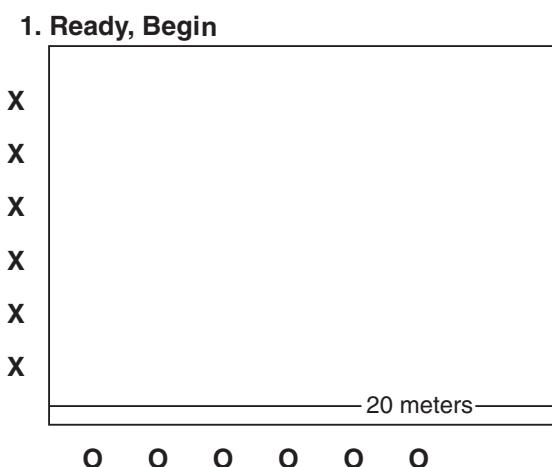
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## Fitness Education and Assessment Guidelines

The ultimate (long-term) objective of a physical education program is to teach students the physical and behavioral skills they need to be active for life. This objective should be viewed as the culmination or final outcome of a well-executed K-12 curriculum. To reach this objective, most experts recommend the use of a hierarchical curriculum that builds with each passing year. An effective fitness education program must help to build both the physical and behavioral skills needed to be physically active throughout life.

The recommended progression of *physical skills* in physical education can be likened to the progressions used to teach and reinforce reading. Just as students first learn basic words and basic sentences, they must also first master basic physical skills. As children develop, they need opportunities to practice and apply skills in games. This is analogous to the need for developing readers to start reading books. With further development, students can learn ways to enhance their skills and apply them to the sports and activities that most interest them. This is similar to what happens when students eventually learn to read different types of materials to learn about subjects of interest. In physical development (just as in reading development), the

progression of material must be systematic and must build with each passing year. The conceptual diagram in figure 2.1 highlights the recommended objectives at each level of development. In the elementary years, emphasis should be on providing opportunities for children to experience and enjoy a variety of activities. Learning and practicing physical skills are critical at this stage since these activities help build self-efficacy and perceptions of competence. A good repertoire of skills will also make it easier for children to learn sports and lifetime activities that they can perform as they get older. At the middle school level, focus should shift to skill instruction so children can master specific movement skills. Care should be taken to minimize experiences of failure, since long-term attitudes may begin to form at these ages. In high school, students should be given more choice about the activities that they perform. The key concept in this diagram is that the scope of activities and nature of instruction broaden through elementary school and into middle school and then taper off into high school. Although each teacher may be involved with only a few grade levels, all teachers need to understand the progression of experiences recommended in physical education.



**Figure 2.1** The hierarchical model of physical education.

Reprinted, by permission, from Dr. Bob Pangrazi, Department of Exercise Science & Physical Education, Arizona State University (Professor Emeritus), Education Specialist Gopher Sport.

Behavioral skills are also needed to increase the chance that children will be active throughout their lives. Students ultimately need to learn to self-assess their fitness levels, interpret assessment results, plan personal programs, and motivate themselves to remain active on their own. Instruction on behavioral skills requires a similar progression over the K-12 curriculum. The fitness and activity assessments in the FitnessGram program provide tools that teachers can use to teach these concepts, but the purpose of the assessments and the depth of coverage should be matched to the interests and abilities of the children. The following sections highlight the recommended uses and applications of the FitnessGram assessments in the physical education curriculum.

## ASSESSMENT OPTIONS FOR FITNESS EDUCATION

The FitnessGram program is designed to help evaluate and educate youth about levels of physical activity and their physical fitness. This information can be used in different ways depending on the philosophy of the district, school, and individual teachers. Various assessment methods are possible depending on the primary objective of the program. The following sections describe the more commonly used assessment options.

### Interpersonal and Institutional Promotion of Physical Activity

Individualized testing is aimed at providing students with accurate indicators of their fitness and physical activity levels. Students in physical education should learn whether or not they have sufficient amounts of fitness for good health and whether they are performing sufficient amounts of activity. Both *FitnessGram* and *ActivityGram* use criterion-referenced standards that are based on appropriate health-related criteria.

The software and printed reports provide prescriptive feedback depending on whether the child attained the Healthy Fitness Zone for the various dimensions of fitness or the total amounts of activity. Students who fail to reach the Healthy Fitness Zone receive the feedback needed to develop a program of improvement. Students who reach the Healthy Fitness Zone receive information on how to maintain their fitness or activity levels.

### Self-Testing

According to NASPE, now a part of SHAPE America, there are several tools in their teacher toolkit that provide appropriate measures. For example, the document, *High-Quality Physical Education: How Does Your Program Rate?*, provides 15 questions to evaluate a physical education program. The FitnessGram program can support many of the questions that are asked such as the following:

### Health

Self-testing refers to personal assessments made by individual students of their own fitness and activity levels. Students are taught to give the tests to themselves or to each other and to interpret their own test results. Once students become accomplished in self-testing they can repeat testing periodically to assess personal improvement.

#### Personal-Best Testing

Teaching self-testing is an important objective in physical education since it provides the necessary tools and experience for students to learn how to test themselves and plan personal programs throughout life. It takes a considerable amount of practice to self-test effectively; so multiple opportunities to practice are necessary. Self-testing results are considered personal. For this reason, student information may be kept personal if a student desires.

1. Student scores on FitnessGram and ActivityGram assessments should *not* be used to evaluate individual students in physical education (e.g., grading or state standards testing). Students are different in terms of interests and ability. Grading students on their fitness performance may be holding them accountable for accomplishments beyond their control. Posting the results for other students to see can create an embarrassing situation that does little to foster positive attitudes toward activity.

2. Student scores on FitnessGram and ActivityGram assessments should *not* be used to evaluate teacher effectiveness (e.g., teacher evaluations). Teachers can be effective at teaching youngsters how to develop and maintain physical fitness and still have students who do not perform well on fitness tests. Often, physical education teachers who emphasize only fitness activities may be short-changing their students in other areas such as skill development, social skills, and positive attitudes toward physical activity.

Tools such as the FitnessGram program can help support a high-quality physical education program and increase teacher effectiveness. When evaluating teacher effectiveness, it is appropriate to turn to the Society of Health and Physical Educators, or SHAPE America, (formerly known as the American Alliance for Health, Physical Education, Recreation, and Dance, or AAHPERD, and the National Association of Sport and Physical Education, or

NASPE) for guidance as they have created a "Physical Education administrators. Categories included within the Physical Education Teacher Evaluation Tool are: quality of instruction (e.g., is instruction differentiated for different learners, is technology utilized to impact learning), evidence of student learning (e.g., do teachers use formative and summative assessment tools and communicate results to student), establishing a positive learning climate (e.g., fitness scores not displayed, high expectations for learning and behavior are evident), classroom management, and professionalism. This tool may provide administrators helpful guidance in developing physical education teacher evaluation criteria.

3. Student scores on FitnessGram and ActivityGram assessments should *not* be used to evaluate overall physical education quality (e.g., physical education program assessment). Promoting physical fitness is only one part of a quality physical education program. Teaching physical skills, cooperative skills, and health maintenance skills are equally important objectives for promoting lifelong physical activity.

According to NASPE, now a part of SHAPE America, there are several tools in their teacher toolkit that provide appropriate measures for physical education programs. For example, the document, *High-Quality Physical Education: How Does Your Program Rate?*, provides 15 questions to evaluate a physical education program. The FitnessGram program can support many of the questions that are asked such as the following:

- Students need to be taught the proper protocols for each assessment. Students learn in many different ways. To account for this the physical education teacher should do the following for each assessment item:

1. Read through each protocol according to the manual.
2. Show a proper live demonstration or show the video provided in the Electronic Media Resource.
3. Have each student practice the protocol for each assessment before the day of the assessment.

- Take time to review the protocol to ensure proper form and technique for each assessment.

To access the detailed list of 15 questions visit: <http://www.shapeamerica.org/publications>

HOW  
TO  
APPLY

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# **RECOMMENDED APPROACHES FOR PROGRAM EVALUATION**

For better or for worse, there is an increasing emphasis on standardized testing in schools—and physical education is no exception. Education programs at all levels are increasingly being asked to document that they are monitoring and achieving stated learning objectives. Therefore, there is a need to develop a systematic approach to document important outcomes in physical education. There currently is no established national standard, and the standards and criteria vary considerably across states. While teachers may not have complete autonomy to prepare their own evaluation plans, it is important for them to be aware of the issues and be able to defend criteria that are appropriate to use in evaluating their program.

A common approach is establishing criteria to define the percentage of the student body that should achieve the Healthy Fitness Zone or above. Establishment of appropriate criteria is difficult since the percentage of students achieving the Healthy Fitness Zone varies. The assumption in some cases is that if the curriculum or program is adequate, then most students should be able to achieve these institutional goals. In this model, teachers reporting values below the stated goals may be asked to make systematic changes in their program to increase the percentage of students achieving the goals. As described previously, student fitness outcomes are not completely within a teacher's control. Teachers forced to comply with this type of evaluation system may be forced to "teach to the test" and emphasize only fitness attainment at the expense of other educational outcomes. Student attainment of fitness outcomes does not provide a good indication of program quality and other indicators should be considered for evaluation.

Some districts are interested in tracking trends over time. Changes in passing rates over time can provide useful information for curriculum planning. Program coordinators can compare fitness and activity levels of similarly aged children to evaluate the utility of new lessons or initiatives. This type of documentation can help to provide some accountability for the overall program. The *FitnessGram* software provides a number of useful tracking and report functions to facilitate documentation of group results. Additional information on program

evaluation guidelines can be found in the *Fitness-Gram Reference Guide* which is available online at <http://www.cooperinstitute.org/youth/fitnessgram/fitnessgram10/science>. Schools and districts are encouraged to carefully consider the relative merits of different evaluation criteria. Emphasis should be placed on quality-improvement approaches that systematically seek to improve on the overall programs.

## Additional Resources

A copy of the FitnessGram position on appropriate and inappropriate uses of fitness and activity assessment can be found within the *FitnessGram Reference Guide*. These positions statements are also available in the web resources for this manual.

# THE FITNESS EDUCATION PROCESS STEP BY STEP

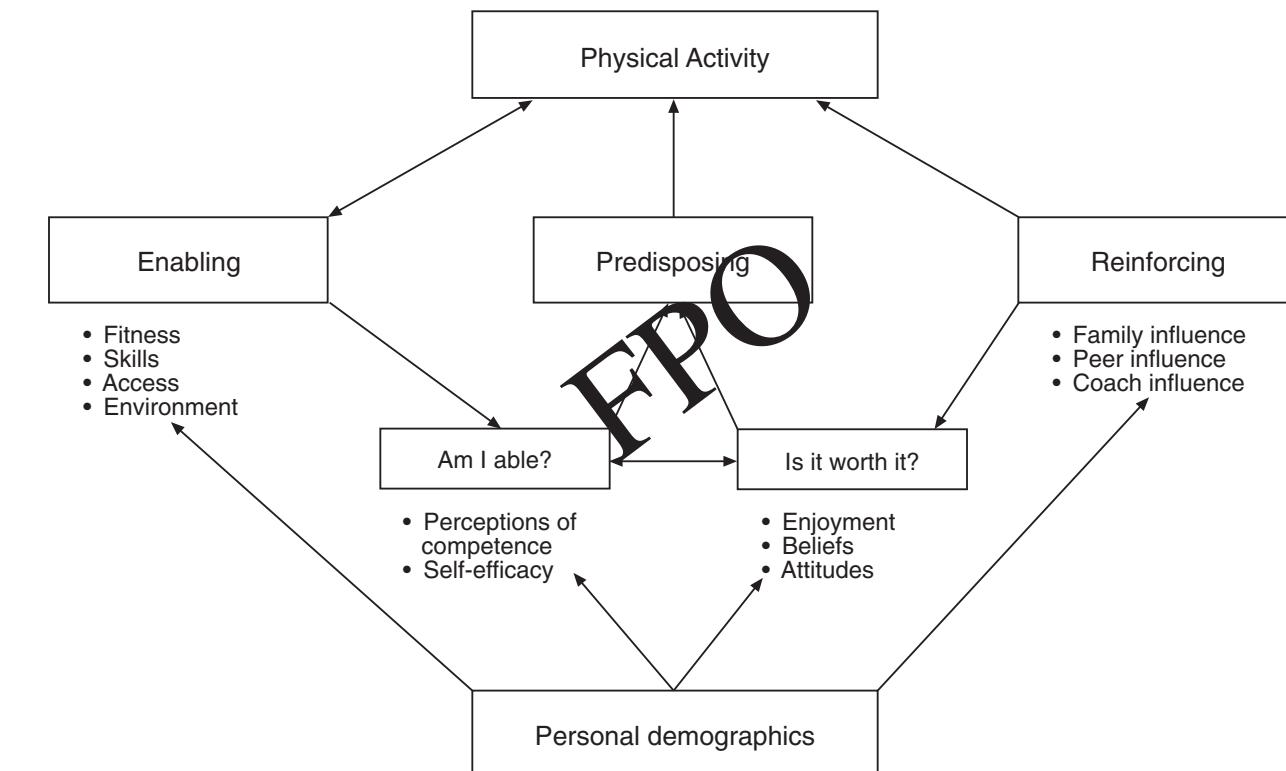
The Fitness Education Process is provided in this section to facilitate basic instruction on fitness. The Fitness Education Process consists of eight steps (see figure 2.2), beginning with instruction about activity and fitness concepts and ending with revision and readjustment of the physical activity program.

1. Instruction About Activity and Fitness Concepts—Students should be instructed in basic concepts of fitness development and maintenance. Concepts should include the following:

- Importance of regular exercise for health and the prevention of degenerative diseases
  - Description of each area of fitness and its importance to health
  - Methods to use in developing each area of fitness

*Hint for software users: FitnessGram Knowledge Tests may assist in checking student understanding.*

2. Student Participation in Conditioning Activities—If fitness testing is being conducted, students should be preconditioned for testing to maximize safety. *Hint* : The Get Fit Conditioning Program available on the accompanying web resource (see figure 2.3 a-b) may be used for this purpose. Do some of these activities in class; assign others for completion during the student's leisure time.



**Figure 2.2** The eight steps of physical fitness programming

Adapted from and used with permission, from C.B. Corbin, G.J. Welk, W.R. Corbin and K. Welk, 2016, *Concepts of Physical Fitness*, 17th ed. (Columbus, OH: McGraw-Hill Education).

**FITNESSGRAM**  
Get Fit Conditioning Program

The Get Fit Conditioning Program is a six week program designed to help you "get in shape" for your fitness test.

Guidelines are as follows:

- Participate in aerobic activities each day. Participate in muscle strengthening and bone strengthening activities at least three days each week.
- Complete exercise log and return to your teacher.
- You may do part of your workouts during your physical education class.
- Select activities from Get Fit Exercises or do your favorite activities from physical education class.
- Place a check mark in the box for each day you workout. Your workout should include Warm-up, Strength Development, Aerobic Activities, and Cool-down.
- Move easily at first. If you are not used to an activity, move slowly and gradually increase your speed. If you feel pain, stop immediately.
- Stretching - Do at least 3 strength exercises each day. Do as many as you can up to 20.
- Aerobic Activities - Try these aerobic activities each day. If you have not been very active start slowly. Move easily at first. If you are not used to an activity, move slowly and gradually increase your speed. If you feel pain, stop immediately.
- Coax Down - Do 3 activities from this list of your favorite activities. Be sure to stretch upper and lower body and trunk.

Workout Log:

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week One Date:							
Week Two Date:							
Week Three Date:							
Week Four Date:							
Week Five Date:							
Week Six Date:							

Student Name: \_\_\_\_\_ The Get Fit Conditioning Program instructions.

**ACTIVITYGRAM/ACTIVITYGRAM Get Fit Award**

This certifies that \_\_\_\_\_ has successfully completed the "Get Fit" activity program and demonstrated outstanding commitment to developing good fitness habits.

Date \_\_\_\_\_

**Figure 2.3** Get Fit Conditioning Program materials available on the accompanying web resource include a) Get Fit Conditioning Program instructions and b) Get Fit Award.

**<np>** 3. Instruction on Test Items—Include the following topics when teaching each test item:

- Why it is important for health
- What it measures
- How to administer it
- Practice sessions

*Hint:* View the FitnessGram Test Protocol videos with your class.

4. Assessment of Fitness Levels—If possible, allow students to test one another or have a team of parents assist in conducting the assessments. Also, teach students to conduct self-assessments.

5. Planning the Fitness Program and Setting Goals—After completing the fitness tests, use the results to help each student set goals and plan his or her personal fitness program. Activity goals can emphasize areas in which the student has the greatest needs. Be sure to include the following activities:

- Teach students how to interpret their results.
- Assist students in setting process goals for an exercise program that will improve or maintain their fitness levels or their activity levels (see Chapter 11, Using FitnessGram Data for more information on goal setting with students).
- Evaluate group performance.

*Hint for software users:* Inform students and parents of results with the *FitnessGram* program reports.

Physical Best is a companion product to the *FitnessGram* program. Developed by the Society of Health and Physical Educators (SHAPE America), *Physical Best* is a complete educational program for teaching health-related fitness concepts. Learning activities are included for the areas of health-related fitness: aerobic fitness; body composition; muscular strength and endurance; and flexibility. The curriculum has components that can be used to promote parent and community involvement. *Physical Best* is unique as a physical education curriculum in a number of ways.

- Physical Education
  - Use of standards-based instruction
  - Moderate to vigorous physical activity for at least 50% of class time
  - Developmentally appropriate
  - Qualified teachers

- Community and parent support
- Physical Activity During School Day
  - Morning activity break
  - Daily walk time
  - Integrate movement into academic content

## Using The Fitness Education Process to Teach Physical Education and Increase Personal Fitness

### Spotlight on the FitnessGram Program

Ginny Popiolek

Supervisor of Health and Physical Education  
Harford County Public Schools, Baltimore, MD

Harford County Public Schools have implemented *FitnessGram* at a district level since 2004. *FitnessGram* has created a paradigm shift that promotes physical activity over a lifetime by assisting in the creation of personalized goal setting and student wellness plans enhanced by education and assessment. The wellness plans help to create awareness of physical activity guidelines, recommendations, and students current fitness level.

We begin the assessment process to educate students on the importance of activity and fitness. Focusing on the why and how is very important for the students to find a sense of personal responsibility and commitment. Next we administer a pre-test giving students a baseline measurement. After the pre-test is conducted we implement a goal setting lesson and students work on setting personal goals to create a wellness plan using their baseline data.

Departments analyze school wide data using *FitnessGram*, looking for strengths and weaknesses and align instruction appropriately. An example could be upper body strength being low for the seventh grade and therefore adjusting warm-up to include increased time to address the concern. Fitness data is also utilized when creating curriculum learning objectives as part of the Race to the Top program.

Fitness is reassessed at the end of the year. After assessments are conducted reports are emailed home to parents, and physicians have been informed through groups such as the health department and some professional development groups that this information is available. As a result, physicians are asking for the report, to include this information as part of the annual check-up.

- Recess
- Encourage organized physical activity after lunch

### Physical Activity Before/After School

- Intramural sports
- Interscholastic sports
- Physical Activity clubs (running, biking, etc.)
- Youth sports
- Active transport to and from school

### Staff Involvement

- Staff wellness program
- Role modeling for students
- Sponsoring physical activities (physical activity clubs, intramurals, etc.)

### Community Engagement

- Grant community access to facilities (gym, playground, etc.)
- Promote programs to parents (walking clubs, etc.)
- Partner with community-based programs
- Disseminate information (newsletters, Facebook, blogs, etc.)

All of these characteristics combined with *FitnessGram* form a comprehensive program that provides one-stop shopping for physical activity, nutrition education, and assessment in fitness education. *Physical Best* is also linked to SHAPE America's national physical education standards and learning outcomes, provides accountability for educators by tying to national standards, and is a K-12 program with resources appropriate to every grade level.

## Fitness for Life

*Fitness for Life* is a comprehensive K-12 program that helps students take responsibility for their own activity, fitness, and health and prepares them to be physically active and healthy throughout their adult lives. This standards-based program is carefully articulated and follows a pedagogically sound scope and sequence to enhance student learning and progress. The *Fitness for Life* program includes three sets of coordinated resources:

- To be effective, recognition must be based on achievement of goals that are challenging yet attainable. Goals that are too hard are not motivating and can result in lack of effort. This is especially true

for students with low physical self-esteem—often the children and youth who are in most need of improved fitness. Challenging yet achievable goals are intrinsically motivating.

- If a recognition system is not based on goals that seem attainable, children and youth will not be motivated to give effort. When effort ceases to pay off, children may develop “learned helplessness.”

Learned helplessness occurs when children perceive that there is no reason to try because trying does not result in reaching the goal. The best way to treat learned helplessness is to reward “mastery attempts” (effort or process) rather than “mastery” (performance or product).

- Intrinsic motivation for any behavior, including exercise and physical fitness behaviors, must be based on continuous feedback of progress (information). Awards that are perceived as controlling rather than informative do not build intrinsic motivation. Awards based on test performance provide little feedback concerning the person's progress toward the goal. Recognition of behavior can provide day-to-day feedback in terms of progress and information about personal achievement and competence that can be intrinsically motivating. Intrinsic motivation is evidenced by feelings of competence, willingness to give effort, a perception that exercise is important, lack of anxiety in activity, and enjoyment of activity.

- Awards that are given to those with exceptionally high scores on fitness tests often go to those who have the gift of exceptional heredity and early maturity and to those already receiving many rewards for their physical accomplishments. Research indicates that awards or recognition given for exceptional performance are available to very small numbers of people. The result is a loss of motivation among many.

*Fitness for Life* is designed to be integrated with other physical education activities to create a high-quality, comprehensive physical education program. *Fitness for Life* is also fully integrated with *Physical Best* and *FitnessGram*, sharing the same HELP philosophy. The materials contain specific guidelines to assist students in learning how to evaluate and interpret their own fitness scores (based on *FitnessGram* assessments) and how to build behavioral skills needed for lifetime fitness. The *Fitness for Life* program is an ideal way to achieve higher-level learning outcomes in elementary and secondary physical education.

**<bp>**

## Presidential Youth Fitness Program

The Presidential Youth Fitness Program (PYFP) is developed to ensure what happens before, during, and after the fitness assessment is beneficial for students and teachers and leads to youth who are active for life. It provides a model for fitness education within a comprehensive, quality physical education program. The program includes the following resources and tools for physical educators to enhance their fitness education process:

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1. Attain adequate knowledge of test descriptions.
2. Give proper demonstrations and instructions.

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## KEY CONCEPTS

- Self, peer, and personal best testing can be used to evaluate physical activity and/or health-related fitness at the individual level, while institutional testing allows teachers to view group data for curriculum development and program planning.
- To ensure appropriate use of fitness testing data it is important to: teach the components of health-related fitness as part of a quality physical education program; provide feedback to students and parents; and, use assessment data to guide physical education program planning.
- The Fitness Education Process provides educators with a way to collect and inform others about physical fitness. It helps individuals learn to plan lifelong physical activity programs to maintain and improve fitness overall.
- Be able to identify available resources to help advocate for effective and appropriate use of fitness data.

3. Develop good student and teacher preparation through adequate practice trials.
4. Conduct reliability studies.

PYFP supports physical educators following the national standards and grade-level outcomes for physical education that are designed to develop physically literate individuals.

## Additional Resources

To order *Physical Best, Fitness for Life* materials, visit Human Kinetics at [www.HumanKinetics.com](http://www.HumanKinetics.com).

# PART II

## FitnessGram Assessment Model

The *FitnessGram* assessment measures components of physical fitness that have been identified as important because of their relationship to overall health and optimal function. The five components are aerobic capacity, body composition, muscular strength, muscular endurance, and flexibility. Several test options are provided for most areas, with one test item being recommended. Each item is scored using criterion-referenced standards that are established based on the level of fitness needed for good health. Research and validation work conducted over many years has helped to refine these standards so that there are separate criteria for boys and girls at different ages. Because only modest amounts of activity are needed to obtain health benefits, most students who perform regular physical activity should be able to achieve a score that will place them within or above the Healthy Fitness Zone (HFZ) on all *FitnessGram* test items.

Chapter 5 covers general principles associated with conducting fitness testing. It provides guidelines for testing primary students as well as

general guidelines for safety. Chapters 6, 7, and 8 give detailed information on assessments of aerobic capacity, body composition, and musculoskeletal fitness, respectively. A number of the assessments require equipment for test administration. Information on sources of equipment and instructions for constructing homemade equipment can be found in the web resources (see figure Part II).

An important component of the *FitnessGram* assessment is the inclusion of a physical activity assessment. While fitness is important, it cannot be maintained unless children are physically active. The physical activity assessment includes three physical activity questions that help customize feedback based on the response for the student report. Chapter 9 provides further information on the physical activity questions. Chapter 9 also provides alternative suggestions for teachers without access to the *FitnessGram* software. Chapters 10 and 11 focus on interpreting *FitnessGram* test results and how to effectively use the data.

**WWW**  
**REPRODUCIBLE**

The Information on Testing Equipment section on the accompanying web resource includes information on where to purchase equipment along with building plans for building some of the equipment on your own.

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# 8

## Muscular Strength, Endurance, and Flexibility

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.

To practice learning about activity, I would like to have you try to remember what you did yesterday after school. Think back to yesterday and write down the main activity that you did for each 30-minute period after school. You can write the name of the activity in the space or use the chart at the bottom of the page to write down the number. For each activity, estimate the intensity as either REST, LIGHT, MODERATE, or VIGOROUS. (Help <ext>

*the students select activities from the pyramid and rate the intensities.)*

Throughout this chapter, instructors will have the option of allowing students to assist in scoring each other's performance and recording scores or the instructor will record the scores. If the students are recording scores, copies of the Personal Fitness Record (figure 5.1 a and b), available in the web resource, should be printed for each student to be used for recording individual scores. If the instructor is recording the scores, the Class Score Sheet (figure 5.1 c) from the web resource may be used or a score sheet may be printed from the FitnessGram software. Instructors will want to refer to the Healthy Fitness Zone Standards charts (figure 5.2) available in the web resource to help students determine in their score placed them within the Healthy Fitness Zone.

### Additional Resources

Additional information on the reliability and validity of the different musculoskeletal fitness test and derivation of the FitnessGram Healthy Fitness Zone criteria can be found within the *FitnessGram Reference Guide* and may be downloaded at [www.cooperinstitute.org/fitnessgram/fitnessgram10/science](http://www.cooperinstitute.org/fitnessgram/fitnessgram10/science).

## 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).

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### 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.

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#### 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. Score sheets either for individuals (figure 5.1 a or b) or the class (figure 5.1 c) are also needed. These score sheets are available in the web resources.



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**Figure 8.1 a** Starting position for the curl-up test.



**Figure 8.2 a** Close-up of the fingertips sliding in the starting position.



**Figure 8.1 b** Position of the student in the "up" position for the curl-up test.



**Figure 8.2 b** Close-up of the fingertips sliding in the ending position.

hunch 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.

6. Keeping heels in contact with the mat, partner A curls up slowly (figure 8.1 b), sliding fingers across the measuring strip until fingertips reach the other side (figure 8.2, a and b); 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). Students should not be allowed to forcibly reach with their arms and hands. The teacher should call a cadence or use the prerecorded cadence.

7. Partner A continues without pausing until he or she can no longer continue, has completed 75 curl-ups, or when the second form correction is made.

#### 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.

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## 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, the first form break will be counted as a curl-up. The test ends on the second form break.

## 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.

- 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.

## Progressive Aerobic Cardiovascular Endurance Run (PACER)

### Recommended



The PACER (Progressive Aerobic Cardiovascular Endurance Run) 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 harder at the end. The progressive nature of the test provides a built-in warm-up and helps children to pace themselves effectively. 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 music and pacing for the PACER tests is available in the accompanying web resource.

The PACER is recommended for all ages, but its use is strongly recommended for students in primary grades. 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 primary children, the emphasis should be on allowing the children to have a good time while learning how to take this test and how to 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

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

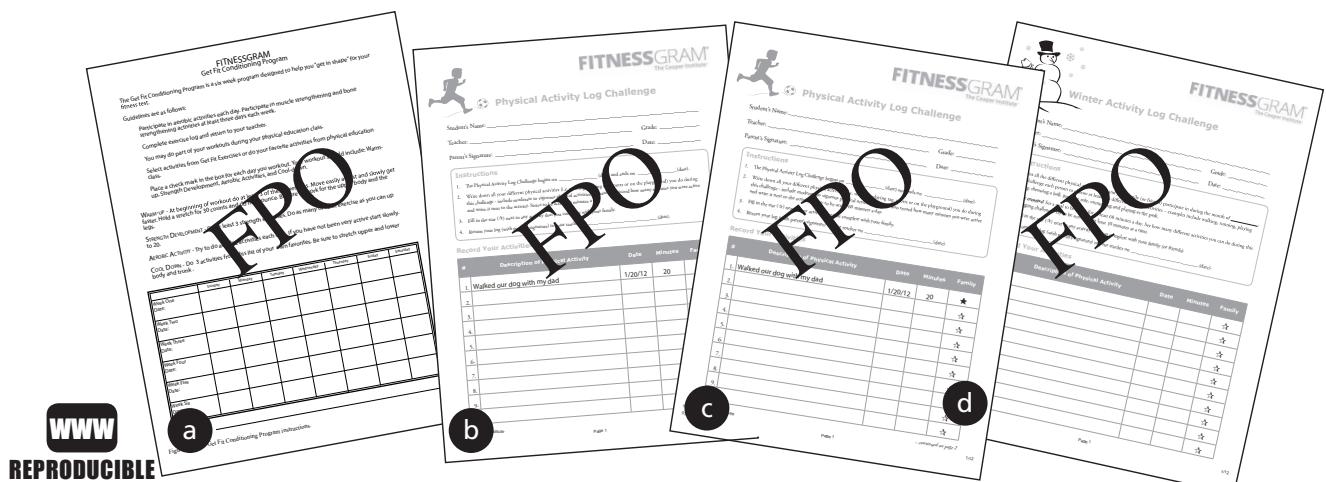
Administering the PACER requires a flat, nonslippery surface at least 20 meters long; computer, laptop, or handheld music device such as an mp3 player connected to speakers with adequate volume; measuring tape; marker cones; pencil; and copies of appropriate score sheet (20 meter or 15 meter) (see figures 6.2 a-d). Students should wear shoes with nonslip soles. Plan for each student to have a 40- to 60-inch-wide space for running. An outdoor area can be used for this test if you do not have adequate indoor space. There should be a designated area for finished runners and for scorekeepers. You may want to paint lines or draw chalk lines to assist students in running in a straight line.



Because many gyms are not 20 meters in length an alternative 15-meter PACER test music track is available on the accompanying web resource. The procedures described below are the same for the 15-meter distance, but an alternate music track and scoring sheet are required to track the number of laps. The 15-meter PACER test is only for use in elementary schools.

### Test Instructions

1. Select and download the desired PACER cadence in the accompanying web resource. Each version of the test will give a 5-second countdown and tell the students when to start.
2. Before test day, allow students to listen to several minutes of a PACER music track from the accompanying web resource so that they know what to expect. Students should then be allowed at least two practice sessions.
3. Make copies of desired PACER score sheet for each group of students to be tested. The PACER Individual Score Sheet should be used when students or other scorers are counting laps for one person. If teacher is scoring a group of students at one time, the PACER Group Score Sheet would be used.



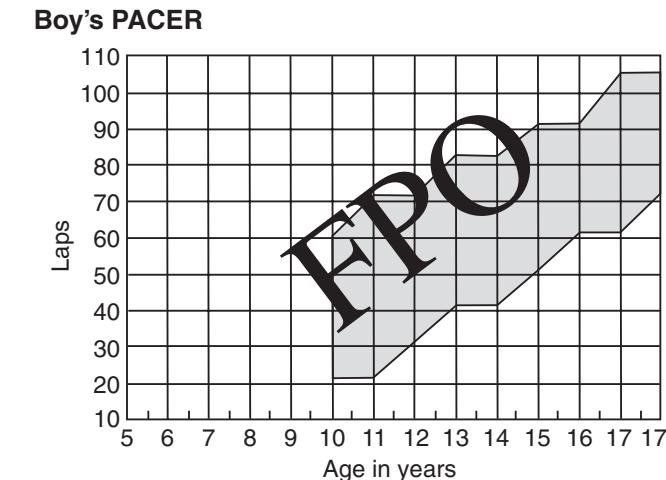
**Figure 6.2** The options for scoring the PACER test are available on the accompanying web resource and include a) 20-M PACER Individual Score Sheet, b) 15-M PACER Individual Score Sheet, c) 20-M PACER Group Score Sheet, and d) 15-M PACER Group Score Sheet.

4. 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. Schematic PACER diagram is located in figure 6.3.
  5. Allow students to select a partner. Have students who are being tested line up behind the start line. Partners who are counting laps should sit in a space designated by the teacher.
  6. Each student being tested should run across the 20-meter distance and cross the line with both feet by the time the beep sounds. 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.
  7. 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.
  8. The first time a student does not reach the line by the beep, the student stops where he or she is and reverses direction immediately, attempting to get back on pace. This lap would be a form break but is counted as a complete lap for ease in test administration. The test is completed for a student the next time (second time) he or she fails
- to reach the line by 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. Figure 6.3 provides diagrams of testing procedures.
9. 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). Have the scorer record the lap number (crossing off each lap number) on a PACER Individual Score Sheet (20 meter or 15 meter). The recorded score is the total number of laps completed by the student. Not crossing the line by the beep is a form break on the PACER test. As with many other FitnessGram test items for ease in administration, the first form break is counted as a completion.

The scoring of the PACER test is the number of laps completed prior to the second time the student does not get to the line by the beep (the first time the student does not get to the line by the beep is a form break but is counted as a completed lap). It is important to count each individual 20m distance as a lap (rather than based on a "down and back" count for the laps). The number of laps completed along with the child's age is used to estimate aerobic capacity. The PACER LookUp Charts are included in the web resources may be used to determine the student's aerobic capacity (see figure 6.4). If using



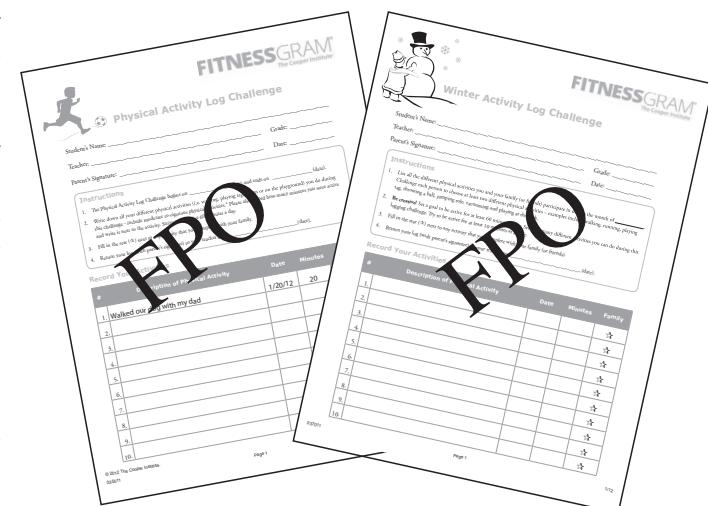
**Figure 6.3** Schematic diagram of PACER test.

the FitnessGram software, you would simply enter the number of laps and that number will be used to generate individualized feedback on the reports.

Criterion standards are not available for students in ages 5 – 9 years, in grades K – 3, so aerobic capacity scores and feedback will not be provided for these ages. The object of the test for these younger students is simply have them participate and to begin learning how to take the test. 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 may receive a score, and it will be evaluated against the criterion standard used for 10-year-old students. All 10-year-old students receive a score regardless of grade level.

### Suggestions for Test Administration

- Both PACER tracks on the accompanying web resource 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 one-half 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.
- 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 attempt to regain the pace. The second time a student cannot reach the line by 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.



**Figure 6.4** The PACER LookUp Charts are available on the accompanying web resource for instructors not using the FitnessGram software.

## Modified Pull-Up

www  
VIDEO

### 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 sheets either for individuals (figure 5.1 a or b) or the class (figure 5.1 c) are also needed. These score sheets are available in the web resources are necessary for administering this test. It is suggested that this assessment be performed on a mat or other soft surface.

### Test Instructions

1. 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.
2. Place an elastic band 7 to 8 inches below and parallel to the bar.



**Figure 8.5 a** Starting position for the modified pull-up test.

3. 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 (figure 8.5 a).
4. The student then pulls up until the chin is above the elastic band (figure 8.5 b).
5. The student then lowers the body to the "down" position. Movement continues in a rhythmic manner.
6. 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 the first form break will be counted as a pull-up. The test ends on the second form break.

### Suggestions for Test Administration

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



**Figure 8.5 b** Student in the "up" position for the modified pull-up test.

## Flexed Arm Hang

www  
VIDEO

### Alternative

The second 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.

### 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. Score sheets either for individuals (figure 5.1 a or b) or the class (figure 5.1 c) are also needed. These score sheets are available in the web resources are necessary for administering this test.

### Test Instructions

1. The student grasps the bar with an overhand grip (palms facing away). To standardize the thumb placement for the flexed arm hang and modified pull-up test items, please note that the thumb placement for both grips should encircle the bar.



**Figure 8.6 a** Starting position for the flexed arm hang test.

2. 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 (photos 8.6 a and b).
3. A stopwatch is started as soon as the student takes this position. The position is held as long as possible.
4. 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.

<drill1bln1>

### 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.



**Figure 8.6 b** Student in the "up" position for the flexed arm hang test.

## 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.

### Skinfold Measurements

WWW  
VIDEO

This section provides information on measuring skinfolds, including suggestions on how best to learn to do skinfold measurements.

#### Equipment

A skinfold caliper is necessary to perform this measurement. The caliper is designed to measure the thickness of double layer of subcutaneous fat and skin at different parts of the body. The cost of calipers ranges from \$5 to \$200. It is important to know that training and practice are more important than the quality of the caliper for body composition assessment.

#### Test Instructions

There are multiple procedures for skinfold testing, the FitnessGram protocol involves collection of measures from the triceps and calf. These sites have been chosen for FitnessGram because they are easily measured and highly correlated with total body fatness. An additional measure from the abdominal site is used for college students. Details on the location of each of the sites is provided here, followed by specific measurement tips.

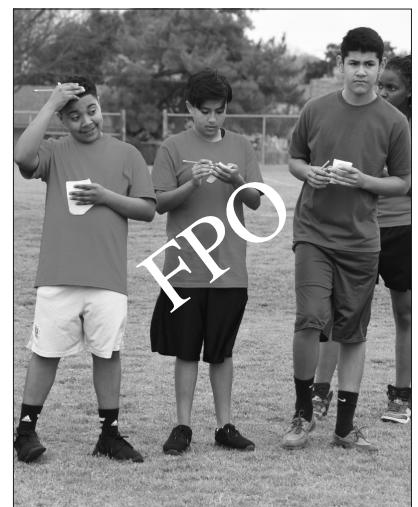


Figure 7.2 a Locating the triceps skinfold site.

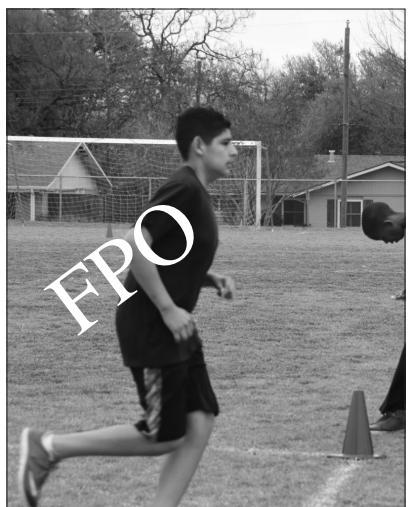


Figure 7.2 b Site of the triceps skinfold.

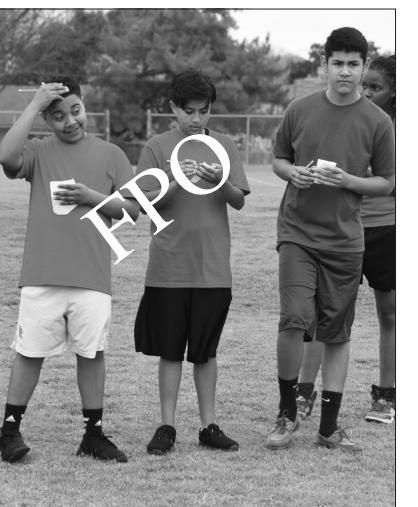


Figure 7.2 c Triceps skinfold measurement.

a site 3 centimeters to the side of the midpoint of the umbilicus and 1 centimeter below it (figure 7.4 a). The skinfold is horizontal and should be measured on the right side of the body (figure 7.4 b) while the subject relaxes the abdominal wall as much as possible.

For accurate information from skinfolds it is important to use standardized techniques and to conduct assessments as consistently as possible. The following tips are recommended for accurate skinfold measurements:

- Measure skinfolds on the person's right side.



Figure 7.3 a Placement of the leg for locating the calf skinfold site.

- Instruct the student to relax the arm or leg being measured.
- Firmly grasp the skinfold between the thumb and forefinger and lift it away from the other body tissue. The grasp should not be so firm as to be painful.
- Place the caliper 1/2 inch below the pinch site.
- Be sure the caliper is in the middle of the fold.
- The recommended procedure is to do one measurement at each site before doing the second measurement at each site and finally the third set of measurements.



Figure 7.3 b Calf skinfold measurement.

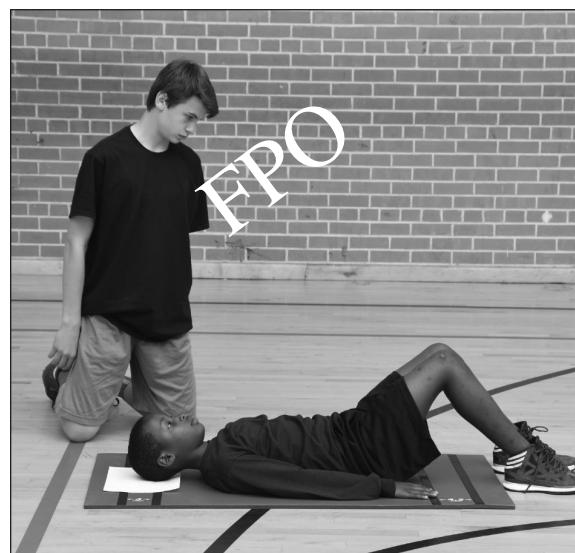


Figure 7.4 a Site of abdominal skinfold.



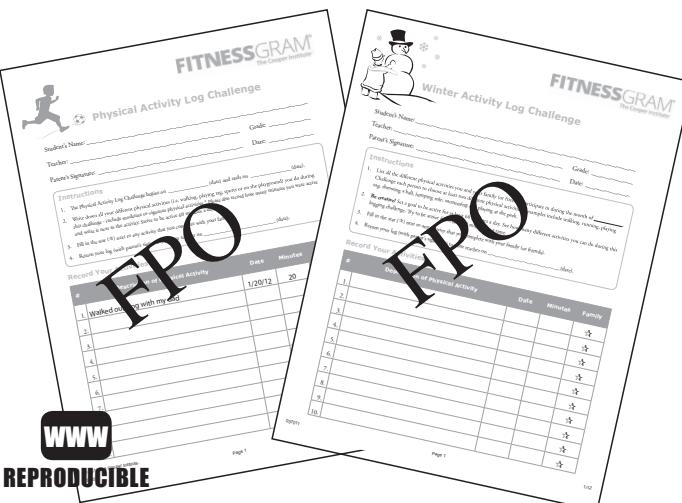
Figure 7.4 b Abdominal skinfold measurement.

## Scoring

The skinfold procedure requires accurate estimates of skinfold thicknesses (measured in mm) as shown on the caliper. Each measurement should be taken three times, with the recorded score being the median (middle) value of the three scores. To illustrate: If the readings were 7.0, 9.0, and 8.0, the score would be recorded as 8.0 millimeters. Each reading should be recorded to the nearest .5 millimeters. For teachers not using the computer software, percent fatness look-up charts, titled "Body Composition Conversion Girls" and "Body Composition Conversion Boys", are provided in the accompanying web resource (see figure 7.5 a and b). *FitnessGram* uses the formula developed by Slaughter and Lohman to calculate percent body fat (Slaughter et al., 1988).

## Suggestions for Test Administration

- Body composition testing should be measured in a setting that provides the child with privacy.
- Interpretation of the measurements may be given in a group setting as long as individual results are not identified and students are not allowed to compare scores.
- Whenever possible, it is recommended that the same tester conduct the measurements so that there is some consistency.
- Practice, Practice, Practice. Practice measurements and conduct repeat measurements occasionally to test you're accuracy. As you become familiar with



**Figure 7.5** The a) boys' and b) girls' body composition conversion charts are available on the accompanying web resource.

the methods you can generally find agreement within 10% between testers.

## Learning to Do Skinfold Measurements

Obtaining consistently accurate skinfold measurements requires training and experience. Using video training or participating in a workshop are excellent ways for an educator to refresh their skills, or to learn how to do skinfold measurements. The accompanying web resource contains protocol videos to assist with learning the procedures described in this manual.

www  
VIDEO

## 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.

#### 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

Score sheets either for individuals (figure 5.1 a or b) or the class (figure 5.1 c) are needed. These score sheets are available in the web resources. No additional equipment is necessary to complete this test item.

#### Test Instructions

1. Allow students to select a partner. The partner judges ability to complete the stretch.
2. To test the right shoulder, partner A reaches with the right hand over the right shoulder and



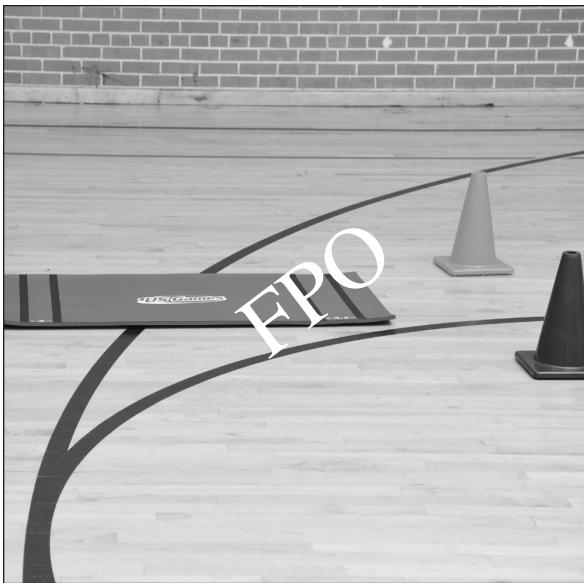
**Figure 8.8 a** Shoulder stretch on the right side.

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 (figure 8.8 a). Partner B observes whether the fingers touch.

3. 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 (figure 8.8 b). 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.



**Figure 8.8 b** Shoulder stretch on the left side.

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## KEY CONCEPTS

- FitnessGram tests that assess muscular strength, endurance, and flexibility refer to the functional health status of the musculoskeletal system.
- Muscular strength: maximal force your muscles can exert in a single effort.
- Muscular endurance: the ability to sustain muscular activity over time.
- Flexibility: describes the range of motion at the joint.
- Recommended test items include curl-up (abdominal strength and endurance), trunk lift (trunk extensor strength and flexibility), 90° push-up (upper body strength and endurance), and back-saver sit-and-reach (flexibility).
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# PART III

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## ActivityGram Assessment Module

The ActivityGram Module now includes two different assessments: ActivityGram and ActivityGram Lite (Youth Activity Profile). ActivityGram is a behaviorally based activity assessment tool that can help young children and adolescents learn more about their physical activity habits. The assessment is a three-day recall of the various activities performed. The predominant activity in each 30-minute block of time is coded, and the resulting data are used to determine the amount of time spent in activ-

ity, the times when a child is active or inactive, and the types of activity performed. Recommendations are based on the national guidelines published in the *Physical Activity Guidelines for Americans* (U S Department of Health and Human Services, 2010.)

Chapter 12 covers general principles associated with collecting accurate self-reported information on physical activity. Chapter 13 provides information on interpreting *ActivityGram* test results using the *ActivityGram* data.



12

## ActivityGram Administration

**B**ecause a major goal of physical education programs is promoting regular physical activity, it is important to include assessments of physical activity in the curriculum. While fitness is important, it cannot be maintained unless children are physically active. The *ActivityGram* Physical Activity Recall provides a tool to assist teachers in offering instruction and feedback related to physical activity topics. To complete the assessment, children will need to be able to categorize different types of activity, describe the intensity of the activity, and estimate the length of time (duration) spent being physically active. The report provides detailed information about the child's activity habits and prescriptive feedback about how active he or she should be.

The *ActivityGram* module was designed to be conducted as an “event” similar in focus and structure to the *FITNESSGRAM* assessments. Instructors are encouraged to provide time in the curriculum to teach concepts related to physical activity and to utilize this new evaluation tool. Because of the cognitive demands of recalling physical activity, it

may be difficult for young children to get accurate results. For this reason, the *ActivityGram* module is recommended for children in grades 5 and higher. However, if used for educational purposes only and if some training or assistance is provided, it still should be possible for younger children (grades 3 and 4) to obtain meaningful results. In order to use *ActivityGram*, you must have access to the *FitnessGram* 2015 application and allow the students to enter their own information. Teachers without access of the *FitnessGram* software will be unable to use this assessment. This chapter describes the *ActivityGram* module in more detail and provides guidelines for administering the instrument within physical education classes. Additional detail on the reliability and validity of different physical activity assessments is included in the *FITNESSGRAM Reference Guide* (see the chapter “Physical Activity Assessments” by Welk, Mahar and Morrow-available online at <http://www.cooperinstitute.org/youth/fitnessgram/fitnessgram10/science>).

## DESCRIPTION OF ACTIVITYGRAM

The ActivityGram assessment is based conceptually on a validated physical activity instrument known as the Previous Day Physical Activity Recall (PDPAR) (Weston, Petosa, and Pate, 1997). In the assessment the child is asked to report his or her activity levels for each 30-minute block of time during the day. The format is designed to accommodate both school and non-school days. Each assessment begins at 7:00 a.m. and continues until 11:00 p.m. For each 30-minute time block the child is asked to report the predominant activity for that interval. To help prompt the responses, the assessment provides children with a list of common activities. The activities are divided into categories based on the concept of the physical activity pyramid (lifestyle activity, aerobic activity, aerobic sports, muscular activity, flexibility, and rest) in figure 1.1.

The pyramid provides a useful way to describe the variety of physical activities that contribute to good health. **Level 1** of the pyramid includes lifestyle activities, or activities that can be done as part of daily living. Activities at this level include walking to school, riding a bike, raking leaves, and general outdoor play of all kinds. **Level 2** of the pyramid includes a variety of aerobic activities and **Level 3** includes the aerobic sports. Activities in **Level 4** includes muscle fitness activities. Flexibility activities are found in **Level 5**. **Level 6** refers to rest activities such as homework, TV viewing, or eating. It is important for children to be able to categorize the activities they do so they can increase their involvement in healthy physical activity and minimize the amount of free time they spend in inactive pursuits such as TV viewing.

For each activity selected in the assessment, students are also asked to rate the intensity of the activity (Light, Moderate, Vigorous). The descriptors for the intensity levels were selected to be consistent with current physical activity guidelines that describe recommended levels of moderate and vigorous physical activity.

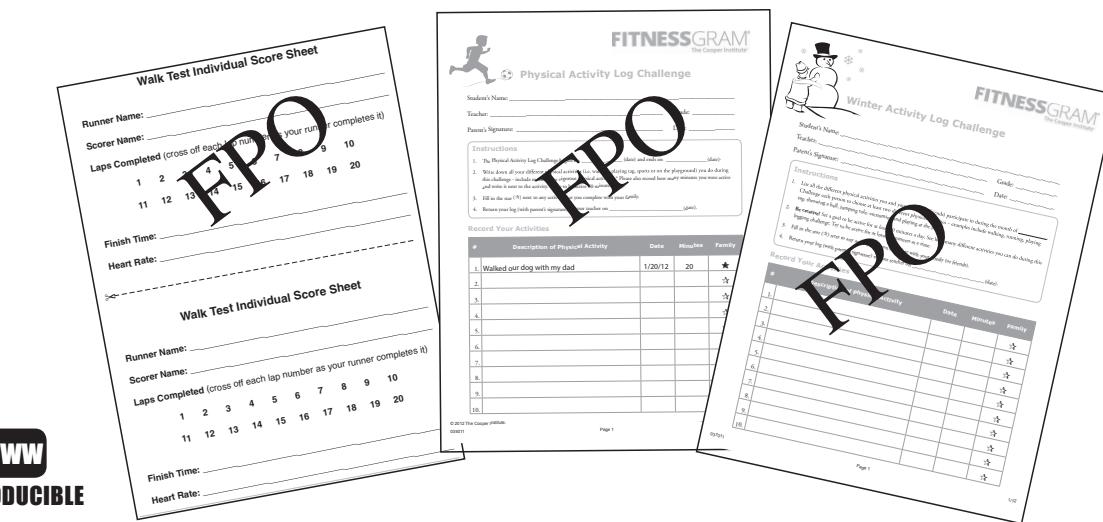
After selecting an intensity, students are asked to specify the duration of the activity by indicating whether they were active in this activity for “*all of the time*” or just “*some of the time*.” This effectively allows each interval to be represented as two 15-minute bouts rather than one 30-minute bout (i.e., if a student indicates that he or she was active

“*all of the time*,” the student will be considered as having been active for two 15-minute bouts. If a student indicates that he or she was active “*some of the time*,” the student will be considered as having been active for one 15-minute bout). This distinction improves the accuracy of the assessment and also reinforces to the child that activity does not have to be continuous or done for long periods of time. If a child selects an activity from the Rest category, then the duration of the activity is assumed to be 30 minutes. A student cannot select “*some of the time*” for Rest because students who were resting for only a portion of the time should indicate what other type of activity they were performing in that time interval.

## ACTIVITYGRAM ADMINISTRATION

The *ActivityGram* module is accessed through the *FitnessGram 2015* software. As previously mentioned, this module was designed to be administered as an “event” similar in scope to *FitnessGram*. Teachers typically spend several weeks preparing for and completing the different fitness assessments, and this same level of attention should be devoted to administering the *ActivityGram* assessment. If this module is established as an important part of the curriculum, children will put forth a better effort. Once students have completed their *ActivityGram* tracking log they may access the software online with instructions provided by their teacher. Involvement of parents to remind children to complete logs of their daily activities can also help improve the accuracy of the assessment and involvement of the students. Teachers will find a file with an introductory letter, instruction sheet, sample activity log and activity logs for days 1, 2, and 3 in web resources as shown in figure 12.1.

While the instrument is intended to be a “recall” of the previous day’s activity, accuracy may be improved by having children complete a detailed activity log during the day. This will help them more accurately recall what they actually did when they come into the computer lab. The use of a log may not be necessary if the children recall only one day back in time, but it is strongly recommended for extended days of recall. *ActivityGram* assessment logs are included in Figure 12.1 in the web resources.. Providing information to parents on a cover page would help to promote parental involvement and



**Figure 12.1** An *ActivityGram* Assessment packet is available on the accompanying web resource.

**Table 4.1** Strategies for Communicating the Fitness Education Process

	Step 1 Fitness Concepts	Step 2 Student Preparation	Step 3 Practice Procedures	Step 4 Assessment	Step 5 Program Planning/ Goal Setting	Step 6 Promoting / Tracking PA	Step 7 Reassessment	Step 8 Revise / Refine Goals
<tt>								
<tch>								
<tb>	Students	Instruction on fitness concepts	Preconditioning and practice for the assessment	Instruction on test items	Assessment of fitness levels	Planning the fitness program and setting goals	<ul style="list-style-type: none"> <li>Promoting/ tracking physical activity</li> <li>• ActivityGram</li> </ul>	Reassessment
<tbl>	Parent	<ul style="list-style-type: none"> <li>Parent letter explaining the components of fitness and test items</li> <li>Information should be made available on school website and parent meetings if possible</li> </ul>			<ul style="list-style-type: none"> <li>Reminder to parents that fitness assessment is taking place</li> <li>Send home parent report</li> </ul>	Parent reviews report and is made aware of student goals		<ul style="list-style-type: none"> <li>Reminder that fitness assessment is taking place</li> <li>Send home parent report</li> </ul>
<tblbl>	Faculty or staff	<ul style="list-style-type: none"> <li>Assist teachers in the incorporation of at least 30 minutes of physical activity throughout the school day.</li> <li>Provide teachers ways to integrate fitness concepts into the classroom.</li> <li>Examples: <ul style="list-style-type: none"> <li>Language Arts – Use writing opportunities to reflect on achievement of goals.</li> <li>Mathematics – Using pedometers, estimate the number of steps the class can achieve in a week.</li> <li>Science – Determine the physiological effects each health related component of fitness has on the human body.</li> <li>Social Studies – Study the many ways different cultures participate in physical activity.</li> </ul> </li> </ul>						
<tblbl>	Administrators	Share resources that provide understanding of the importance of healthy fitness levels.		Invite administrators to visit class during fitness administration	Provide motivational messaging with staying physically active	Join students in tracking activity	Invite administrators to visit class during fitness test administration	Provide motivational messaging with staying physically active
<tblbl>	Community	Contact local media outlets to provide information on the positive impact fitness assessment can have for youth.		Gain support of community partners by hosting a health/fitness event (i.e. Day of Fitness, 5k walk/run, etc.)				

**Table 10.1** Boys FitnessGram Standards for Healthy Fitness Zone

Age (yr.)	AEROBIC CAPACITY VO <sub>2</sub> MAX (ML/KG/MIN.)			PERCENT BODY FAT			BODY MASS INDEX			<tsp>	
	PACER, 1-MILE RUN, AND WALK TEST										
	NI-Health risk*	NI	HFZ	Very lean	HFZ	NI	NI—health risk	Very lean	HFZ	NI	NI—health risk
5	Completion of test. Lap count or time standards not recommended. ≤8.4 8.5–18.8 18.9–26.9 ≤8.2 8.3–18.8 18.9–26.9 ≤8.3 8.4–18.8 18.9–26.9 ≤8.6 8.7–20.6 20.7–30.0	≤8.8	8.9–18.8	18.9–26.9	≥27.0	≤13.8	13.9–16.8	16.9–18.0	≥18.1		
6		≥27.0	≤13.7	13.8–17.1	17.2–18.7	≥18.8					
7		≥27.0	≤13.7	13.8–17.6	17.7–19.5	≥19.6					
8		≥27.0	≤13.9	14.0–18.2	18.3–20.5	≥20.6					
9		≥30.1	≤14.1	14.2–18.9	19.0–21.5	≥21.6					
10	≤37.3	37.4–40.1	≥40.2	≤8.8	8.9–22.4	22.5–33.1	≥33.2	≤14.4	14.5–19.7	19.8–22.6	≥22.7
11	≤37.3	37.4–40.1	≥40.2	≤8.7	8.8–23.6	23.7–35.3	≥35.4	≤14.8	14.9–20.5	20.6–23.6	≥23.7
12	≤37.6	37.7–40.2	≥40.3	≤8.3	8.4–23.6	23.7–35.8	≥35.9	≤15.2	15.3–21.3	21.4–24.6	≥24.7
13	≤38.6	38.7–41.0	≥41.1	≤7.7	7.8–22.8	22.9–34.9	≥35.0	≤15.7	15.8–22.2	22.3–25.5	≥25.6
14	≤39.6	39.7–42.4	≥42.5	≤7.0	7.1–21.3	21.4–33.1	≥33.2	≤16.3	16.4–23.0	23.1–26.4	≥26.5
15	≤40.6	40.7–43.5	≥43.6	≤6.5	6.6–20.1	20.2–31.4	≥31.5	≤16.8	16.9–23.7	23.8–27.1	≥27.2
16	≤41.0	41.1–44.0	≥44.1	≤6.4	6.5–20.1	20.2–31.5	≥31.6	≤17.4	17.5–24.5	24.6–27.8	≥27.9
17	≤41.2	41.3–44.1	≥44.2	≤6.6	6.7–20.9	21.0–32.9	≥33.0	≤18.0	18.1–24.9	25.0–28.5	≥28.6
>17	≤41.2	41.3–44.2	≥44.3	≤6.9	7.0–22.2	22.3–35.0	≥35.1	≤18.5	18.6–24.9	25.0–29.2	≥29.3
Age (yr.)	Curl-up (no. completed)	Trunk lift (in.)	90° push-up (no. completed)	Modified pull-up (no. completed)	Flexed-arm hang (sec.)	Back-saver sit-and-reach <sup>†</sup> (in.)	Shoulder stretch	Healthy fitness zone = touching fingertips together behind the back on both the right and left sides.			
5	≥2	6–12	≥3	≥2	≥2	8					
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					

\*NI = Needs improvement.

<sup>†</sup>Test is scored yes/no; must reach this distance on right and left sides to achieve the HFZ.

support and provide a reminder to the children. A sample parent letter is included in Figure 12.1 in the web resources. Requiring the completion of the log as a “participation activity” (i.e., as homework) is another way to promote compliance with the monitoring protocol.

A child must complete all three days of the assessment for the resulting ActivityGram report to print. The report includes information regarding the amount of activity performed, activity patterns throughout the day, and the type of activities performed as classified by the ActivityGram Activity Pyramid. Consult the next chapter, “Interpreting ActivityGram Results and Using ActivityGram Data,” to find out how the results are compiled and summarized.

See figure 12.2 for a sample showing how you can integrate ActivityGram in your classroom.

**Table 10.2** Boys PACER Laps Associated with HFZ

Age	PACER (20m laps) HFZ	PACER (15m laps) HFZ
5-9	Completion of test. Lap count or time standards not recommended.	
10	17	≥22
11	20	≥26
12	23	≥30
13	29	≥38
14	36	≥47
15	42	≥55
16	47	≥61
17	50	≥65

**Figure 12.2 Sample Training Protocol for Instruction on ActivityGram**

WWW  
REPRODUCIBLE

**Orientation to ActivityGram**

Over the next few days you are going to learn about the types and amounts of physical activity that you do in a normal day. While you get some activity in physical education, you probably do a lot of other activities after school or at home. The ActivityGram assessment that we will do will allow you to track the different activities that you do over three different days: two days during the week, one weekend day. You will need to record the main activity that you do for each 30-minute block of time during the day. While you may do several activities, you will need to record only the main activity that you did during that time. The activities will be selected using the ActivityGram Activity Pyramid (describe the pyramid using figure 1.1 in the web resources). For each activity you will then rate the intensity of the activity as either REST, LIGHT, MODERATE or VIGOROUS and then specify how long you did it.

**Explanation About Physical Activity**

Physical activity refers to movements that require the use of large muscle groups (arms and legs) that increase sweat and breathing rates. Discuss examples of physical activity. There are also a lot of different resting activities that might be done during the day. Discuss examples of things that can be done during rest or while relaxing. The ActivityGram Activity Pyramid provides a way to categorize the different types of activity that you do. Descriptions of the different physical activities include:

- Lifestyle activities are part of a normal day (walking, bike riding, playing, housework, or yard work).
- Aerobic activities are done to improve aerobic fitness (e.g., jogging, bike riding, swimming, dancing).
- Aerobic sports are sports that involve a lot of movement. These may be done with a few people or as part of a team (field sports, court sports, racquet sports).
- Muscular activities are things that require a lot of strength (gymnastics or cheer, dance or drill teams, track and field sports, weight lifting or calisthenics, wrestling or martial arts).
- Flexibility activities are things that involve stretching muscles (martial arts (tai chi), stretching, yoga, ballet).

Discuss other activities that are not on the list. If you do an activity that is not listed, you should pick the category that it belongs in and choose the "Other" activity provided in each category. For example if you were riding in a car, what type would that be? (OTHER – REST). If you were climbing trees, what might you select? (OTHER MUSCULAR). If you were just playing around the house, the activity might involve several different movements but you would probably just select OTHER – LIFESTYLE. It is important to remember that most activities that you do are probably LIGHT or REST. You might only have a few periods each day when you might be running or playing a bit harder.

**Explanation About Intensity**

Activities can be done at different intensities. Descriptions of the different intensities include:

- Rest can be used to describe an activity that mostly involves sitting or standing but little motion.
- Light can be used to describe an activity that involves slow movements but is not too tiring.
- Vigorous can be used to describe an activity that involves quick movements and makes you breathe hard.
- Moderate can be used to describe an activity that is between light and vigorous like brisk walking with some increase in breathing rate but not too difficult.

**Explanation About Duration**

Activity can be done for various periods of time. You might be active for a few minutes and then rest for a few minutes. This is a good way to stay active throughout the day. You will pick the main activity that you do each 30-minute period. The 30-minute time periods should be divided into three 10-minute bouts. Descriptions of the different durations are listed below.

- Movements that are performed the entire 30 minutes are "all of the time" (30 minutes).
- Movements that are performed at least two 10-minute bouts are "most of the time" (11 – 59 minutes).
- Movements that are performed only one 10-minute bout are "some of the time" (1 – 10 minutes).

**ACTIVITYGRAM LITE (YOUTH ACTIVITY PROFILE)**

ActivityGram Lite is a short survey that asks students a series of questions reflecting on their physical activity before school, during school, and after school. ActivityGram Lite is based on the Youth Activity Profile which was developed at Iowa State University in 2012 by Dr. Greg Welk. Once the survey is completed, students are shown their results in a report format. ActivityGram Lite is a

quick assessment of the student's physical activity level and sedentary habits that can be used to help the students to set personal physical activity goals. A copy of ActivityGram Lite can be found in figure 12.3 in the web resources.

Teachers without access to the FitnessGram application may have students complete the ActivityGram survey and reflect on their responses afterward. However, it would be very difficult to provide students with any type of report.



**KEY CONCEPTS**

- ActivityGram Physical Activity Recall provides a tool to assist teachers in offering instruction and feedback related to physical activity topics.
  - Student is asked to report activity levels in 30-minute blocks during the day.
  - Two school and one non-school days.
  - Assessment begins at 7:00 a.m. and continues until 11:00 p.m.
  - Students select Lifestyle Activity, Aerobic Activity, Aerobic Sports, Muscular Activity, Flexibility Activity, and Rest activities.
  - Students rate the intensity of each activity: Light, Moderate, Vigorous.
  - Students provide duration of activity: All, Most, Some
- ActivityGram module is accessed through the FitnessGram application, though this is a "recall" of the previous day's activity accuracy may be improved by having children complete a detailed activity log prior to going to the computer lab.
- ActivityGram Lite (Youth Activity Profile) is a quick survey that may also be used to determine a student's level of physical activity. ActivityGram Lite is also available in the FitnessGram application.
- Activity tracking activities are essential to the process of teaching students about their physical activity levels and assisting in goal setting.

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## Using The Fitness Education Process to Teach Physical Education and Increase Personal Fitness

### Spotlight on the FitnessGram Program

Ginny Popolek

Supervisor of Health and Physical Education  
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Harford County Public Schools have implemented FitnessGram at a district level since 2004. FitnessGram has created a paradigm shift that promotes physical activity over a lifetime by assisting in the creation of personalized goal setting and student wellness plans enhanced by education and assessment. The wellness plans help to create awareness of physical activity guidelines, recommendations, and students current fitness level.

We begin the assessment process to educate students on the importance of activity and fitness. Focusing on the why and how is very important for the students to find a sense of personal responsibility and commitment. Next we administer a pre-test giving students a baseline measurement. After the pre-test is conducted we implement a goal setting lesson and students work on setting personal goals to create a wellness plan using their baseline data.

Departments analyze school wide data using FitnessGram, looking for strengths and weaknesses and align instruction appropriately. An example could be upper body strength being low for the seventh grade and therefore adjusting warm-up to include increased time to address the concern. Fitness data is also utilized when creating curriculum learning objectives as part of the Race to the Top program.

Fitness is reassessed at the end of the year. After assessments are conducted reports are emailed home to parents, and physicians have been informed through groups such as the health department and some professional development groups that this information is available. As a result, physicians are asking for the report, to include this information as part of the annual check-up.

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## About Cooper Institute

The Cooper Institute is dedicated to promoting life-long health and wellness worldwide through research and education. Founded by Kenneth H. Cooper, MD, MPH, the Cooper Institute translates the latest scientific findings into proactive solutions that improve population health. Key areas of focus

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