

# ACTIVE CADET FITNESS GUIDE

CAPP 60-50  
February 2018

Activities  
Academics  
Attitudes  
Assessments  
Awards



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Cadet Physical Fitness Program

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## Chapter 1

# Introduction to the Cadet Physical Fitness Program

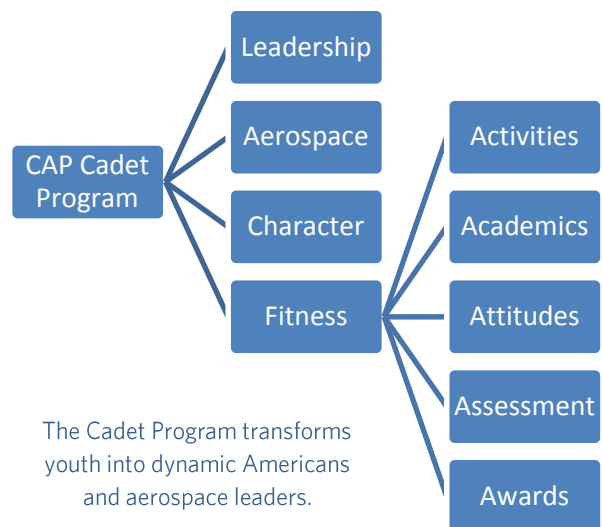
**1-1 Mission.** The goal of the cadet physical fitness program is to increase cadets' physical fitness and to motivate them to develop a lifelong habit of regular activity.

**1-2 Introduction.** The Cadet Physical Fitness program helps members explore enjoyable and interesting activities that promote a conceptual knowledge of fitness in a positive, fun, and developmentally appropriate manner. CAP emphasizes the development of physical fitness as a lifelong process of having a healthy, active lifestyle more than attaining a particular performance outcome.

### 1-3 Physical Fitness in the Cadet Program.

Physical fitness is one of the four components of the Cadet Program along with leadership, aerospace and character. There are five facets to this physical fitness program:

- **Activities-** Get moving! The heart of the cadet fitness program is activities. Cadets will experience a range of fun, structured activities at squadron meetings and weekend events.
- **Academics-** To get the most benefit from the program it's important that cadets understand the concepts of fitness, training, nutrition and more. Cadets learn about these ideas in both classroom and hands-on lessons, and then put them into action in their daily lives.
- **Attitudes-** Cadets develop a positive relationship with fitness through the support of their squadron and their peers. New cadets start by working with a fitness mentor, and then become the mentors themselves.
- **Assessment-** To plan where you're going, you have to know where you are. A quarterly fitness test will help cadets identify current fitness levels for personal goal setting and progress evaluation.
- **Awards-** Celebrate cadets' efforts with a variety of awards. Different awards recognize every level of fitness and each echelon of the program.



**1-4 CAP & the Presidential Youth Fitness Program.** The Cadet Physical Fitness Program is aligned with the Presidential Youth Fitness Program (PYFP). PYFP is a comprehensive fitness program that promotes physical activity and fitness for improving the health of America's young people. For the latest resources and information on the Presidential Youth Fitness Program, visit [www.pyfp.org](http://www.pyfp.org).

**1-5 Prohibitions.** Physical exercise in the Cadet Program will be used only to further the goal of improving physical fitness while increasing confidence, teamwork, and determination. Commanders, activity directors, and ranking cadets will not use physical training as a form of punishment or remedial discipline.

**1-6 Physical Fitness Categories.** While we want our cadets to perform to their maximum potential, leaders must be aware of the limitations some cadets have and how it affects their performance. Upon joining CAP, each cadet will initially be assigned to one of the physical fitness categories described below, depending on the information provided by the cadet's parents upon joining. Use of these categories is mandated by CAPR 52-16, *Cadet Program Management*.

**Category I - Unrestricted.** A cadet in this category is determined to be in good health and may participate in the physical fitness program without restriction.

**Category II - Temporarily Restricted.** A cadet in this category is determined by the squadron commander to be temporarily restricted from all or part of the fitness program activities, including the CPFT, due to a condition or injury of a temporary nature. Temporary conditions may include broken bones, post-operative recovery, and illness. Obesity and poor physical conditioning are not eligible for Category II status. Cadets normally will not exceed six months in this category without reevaluation. Cadets temporarily restricted from a portion of the fitness program are still required to participate in events they are not restricted from. Cadets in this category will not be administered the Spaatz examination until they return to Category I or are determined by a physician to meet the Category III or IV conditions listed below.

**Category III - Partially Restricted.** A cadet in this category is determined to be indefinitely or permanently restricted from a portion of the physical fitness program activities, including the CPFT, due to a medical condition or injury of permanent or indefinite duration as certified by a physician. Conditions which will restrict a cadet from participation in certain physical activities for more than six months would be considered Category III. Cadets are still required to participate in events they are not restricted from. A cadet placed in Category III will attach a certification of the medical limitation from a physician with an endorsement from the squadron commander to the Spaatz examination when submitted to national headquarters. Use of the CPFT waiver request included in the appendix is suggested.

**Category IV - Indefinitely Restricted.** A cadet in Category IV is determined to be indefinitely or permanently restricted from participation in the entire physical fitness program due to a medical condition or injury of a permanent nature as certified by a physician. Cadets in this category are exempt from all physical fitness activity requirements indefinitely. A cadet placed in Category IV will attach a certification of the medical limitation from a physician with an endorsement from the squadron commander to the Spaatz examination when submitted to national headquarters. Use of the CPFT waiver request included in the appendix is suggested.

### Changes to Physical Fitness Categories

Under the previous regulation Commanders occasionally used their discretion to put a cadet with poor physical conditioning in Category II status so they could earn their early promotions while working to increase their level of physical fitness. Under the new guidelines for fitness requirements in Phase I these workarounds are no longer necessary.

**1-7 Implementing the Program.** A good fitness training program requires sound leadership and effective management. The same principles used in conducting other CAP training apply to fitness training as well. Here are some principles that will help you build a successful program.

1. Set realistic goals for the unit based on each individual cadet's needs.
2. Determine training objectives that are specific and measurable.
3. Select activities and lessons that fulfill the training objectives.
4. Watch each cadet closely and correct improper techniques. Offer adaptations or extensions to keep all cadets appropriately challenged.
5. Create a training environment where each cadet is encouraged to perform to his or her maximum potential.
6. Add cadences, battle-cries, and motivational checks to get cadets into the spirit of rigorous exercise.

**1-8 Inclusion and Adaptation.** Physical fitness activities in CAP are positive and inclusive. No two cadets are alike in ability, but under the right leadership every cadet will give fitness training their fullest effort. Leaders must watch for cadets who are struggling and those who appear unchallenged. By adapting activities and lessons for lower performing cadets and offering extensions for higher performing cadets every cadet can participate fully with the appropriate level of challenge.

**1-9 Senior Leadership.** Effective adult leadership is crucial to the success of the cadet physical fitness program. Senior members should encourage cadet leadership of the physical fitness program whenever possible, but senior leaders are ultimately responsible for the success of the program.

**1-10 Fitness Education Officer.** The fitness education officer is responsible for the cadet fitness program. This officer teaches the skills and knowledge that cadets need to live physically active, healthy lives. They conduct classroom training, monitor the cadets' performance in physical fitness activities, mentor cadets informally, assist with goal setting and assessment, organize and lead cadet fitness activities and administer the CPFT assessment. FEOs do not need to be elite athletes, but do need to model an active lifestyle for cadets.

**1-11 Cadet Leadership.** Cadet officers or NCOs should lead the unit during fitness training and serve as fitness mentors whenever possible. The training plan devised by a ranking cadet and the activities he or she selects should first be reviewed by the squadron fitness officer to ensure the intended program conforms to the guidelines found throughout this pamphlet. To ensure junior cadets will receive proper instruction, the cadet in charge should demonstrate to the leadership officer how each exercise is correctly performed. Finally, good leadership means leading by example. Ranking cadets should participate actively in the fitness program and model regular physical exercise.

### Implementation Guidelines

- Teach fitness concepts through physical activity, minimizing classroom lessons in which cadets are inactive.
- Keep activities fun. Too often young people are turned off to physical activity when leaders attempt to get them active and physically fit using bad technique. Boring laps, the antiquated no pain, no gain philosophy and comparisons to others have too often been deterrents to physical activity.
- Encourage cadets to use materials presented in class to make practical application of the concepts to their personal lives.
- Activities for cadets should include challenges, decision-making skills, and team-building skills. This approach will help them begin to develop and personalize their own fitness programs, recognizing the effect that physical activity has on the lifespan.

**1-12 Uniforms.** You may want to have your cadets train and test in appropriate attire, such as shorts, a t-shirt, and athletic shoes. Cadets do not have to exercise in a CAP uniform. Still, commanders should not require cadets to purchase special gear simply to participate in the program.

**1-13 Training in Inclement Environments.** When training in particularly hot, cold, or otherwise inclement environments, extra care should be taken for the safety of the cadets. Please reference CAPR 60-1, 2.6 for more detailed guidance on cadet activities in hot and cold weather.

- **Water Intake.** Adequate water intake is essential to make up for water lost during exercise. Encourage cadets to begin hydrating several days prior to a lengthy and/or high performance activity. It is better to drink small amounts of water frequently than to drink larger amounts less frequently. If cadets are going to be exercising or training in the field for a prolonged time, they should carry a canteen of water with them. Keep drinking for another hour after exercising, but don't drink more than 1½ quarts of water per hour, or 12 quarts per day.
- **Sunscreen Use.** Youth are particularly vulnerable to engaging in poor skin-protection behaviors. It's important to make sure cadets are using sunscreen frequently and liberally to prevent painful burns in the short term, as well as skin cancers and melanoma in the future. Have sunscreen available at activities and direct cadets to wear it while outside.
- **Heat-Related Injuries.** When the temperature is high, it's important that cadets don't over-exert themselves, even if they stretch and drink plenty of water. In hot weather conditions the intensity and duration of a strenuous exercise program should be adjusted. Leaders should consider canceling or delaying the activity, moving to an alternate location, increasing rest periods, modifying uniforms or other adaptations to reduce the likelihood of heat-related injuries.
- **Cold-Weather Considerations.** Pay attention to weather conditions and keep a special eye out for icy roads and wind chill. Wind chill extremes can make exercising outdoors unsafe even if dressed warmly. Dress in layers that can be removed and put back on as needed. Protect head, hands, feet and ears in particular.

## Chapter 2

# Activities

**2-1 Introduction.** Being physically active is one of the most important steps that Americans of all ages can take to improve their health.

**2-2 Guidelines.** Physical fitness activities must be appropriate for the age and developmental level of the cadets, must be enjoyable, and must offer variety. Not every cadet will enjoy every individual fitness activity, but by offering many different activities they'll have the opportunity to find the options they like.

**2-3 Meetings.** Units are required to schedule a minimum of 1 hour of fitness programming each month. At least 45 minutes of that time should be moderate to vigorous physical activity. Recommended activities for meetings include fitness circuits, sports games, and team building activities.

**Competitive Sports.** Sports such as soccer, touch football, volleyball and ultimate Frisbee can be great activities to get cadets moving. Just be aware that many games can keep some cadets on the sidelines rather than participating. To maximize inclusion consider offering games at multiple skill levels or alternate games to keep all cadets engaged.

**Alternate Sports and Games.** Alternative games and sports often combine multiple skill sets to allow cadets of all skill levels to contribute. Examples include 3 ball soccer, kronum, quidditch, freeze tag, capture the flag, and more.

**Team Building Activities.** Active team leadership projects, obstacle courses, relay races, and cooperation games can teach valuable lessons in teamwork while being physically active.

### Key Guidelines for Youth

Children and adolescents should do 60 minutes or more of physical activity daily.

**Aerobic:** Most of the 60 or more minutes a day should be either moderate- or vigorous-intensity aerobic physical activity, and should include vigorous-intensity physical activity at least 3 days a week.

**Muscle-strengthening:** Children and adolescents should include muscle-strengthening physical activity on at least 3 days of the week.

**Bone-strengthening:** Children and adolescents should include bone-strengthening physical activity on at least 3 days of the week.

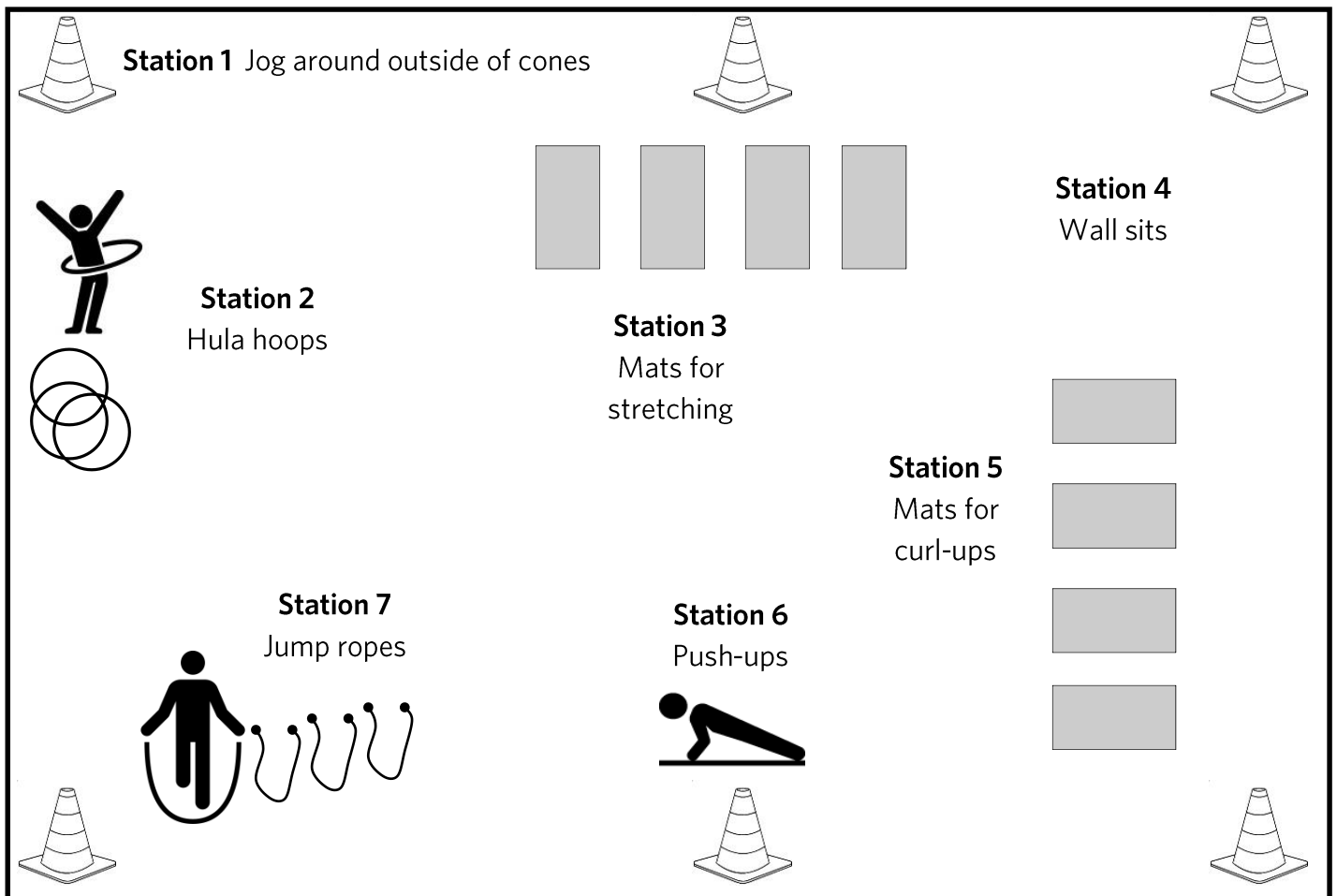
Source: U.S. Department of Health and Human Services. *Physical Activity Guidelines for Americans*.

**Fitness Circuits.** In its simplest form circuit training includes a warm-up, followed by a succession of exercises at stations, followed by a cool down. You decide how long the total workout will be, how many stations will be included and what exercises will be done at the stations.

**Music, Station Changes and Timing.** A stopwatch or large clock helps maintain the appropriate timing at each station. Use a verbal cue, bicycle horn, or other unique sound to tell participants to change stations. If you have the capability, consider playing upbeat music during the circuit.

**Room Size, Traffic Flow and Station Signs.** If working inside the room should be large enough to set up the different stations and still allow enough room for cadets to move freely between the stations. A simple clockwise flow is easier than a zigzagging path through the stations. Using this pathway, you'll have fewer traffic jams and spend less time instructing cadets where to go next. If you have the resources, create signs that detail in pictures and words how to do the exercises at each station.

**Sequencing.** There are a number of ways to sequence circuit stations. In traditional circuit training it is popular to alternate from upper to lower body or sequence by opposing muscle groups. Avoid repetitive movement. Consecutive jumping stations, for example, can lead to overuse injuries. Depending on fitness levels, unit goals and time constraints, you may have cadets repeat the circuit more than once.



**Example Fitness Circuit**



**2-4 10 minute fitness.** When possible, squadrons should aim to incorporate 10 minutes of physical activity to all meetings. One practical strategy is to replace inactivity with activity whenever possible. If cadets are quizzing each other before a test, have them quiz each other while walking the perimeter of the building. While waiting for an activity to start, lead some group stretches instead of standing around. Have everyone do fifteen jumping jacks before starting a class. Suggested activities follow. The activities you adopt will depend on the time and space you have available. *Activities adapted from In-School Breaks resource by the American Heart Association.*

**Cooperative sit-ups:** Have every cadet get a partner and sit in the curl-up position, toe to toe with their partner. Each pair should have a ball or other object. When you start the first partner takes the ball and lays back, touching the ball to the ground behind them, then sits up, passing the ball to their partner. The pair passes the ball back and forth trying to get the most floor taps in the limited time. To do this exercise without the ball, have cadets “high-ten” at the top of the curl-up.

**Play Cards.** Using a standard card deck, assign an activity to each of four suits (ex: jump in place, running in place, curl-ups, push-ups, squats, etc...). Pass out a card to each cadet and they have to do the activity for the number of seconds or repetitions on the card (Face cards can represent 10). Have cadets pass their cards to their neighbor and repeat for 5 passes.

**Task Master.** Have a fitness mentor assign cadets a series of tasks for the cadets to complete as quickly as possible. Direct the cadets that once they’ve completed the task, they should stop and raise their arm to show they’re ready for the next task. Examples of tasks include touching 10 chairs, touching elbows with 8 other cadets, touch knees with 4 other cadets with a different hair color, take a lap around the room or the building, do 10 pushups, etc...

**Keep it Clean:** Push some chairs to the side and draw an imaginary line down the center of the room. Give cadets several soft objects to throw (wadded up paper from the recycle bin works well). Cadets begin throwing objects across the line- the goal is to keep objects off your side of the room. When you call “time” the cleanest side (the one with the fewest objects) wins. Do best 2 of 3 minute-long sessions.

**Bean Bag Hockey:** Have every cadet get a partner and get in the plank position facing their partner 2-3 feet away. Place a bean bag or other soft object between them. Each cadet tries to score a point by sliding the bean bag between their partner’s hands while the partner tries to block. Play to 10 points and switch partners.

**Quiz me.** Assign each corner of the room as A, B, C or D. Review for a test by asking the cadets a series of questions. Rather than answer aloud, the cadets should move to the corner that represents the correct answer.

**Yoga-cize:** Have cadets stand up and get an arms-length distance from their neighbor. Have them place their hands on their hips and position the sole of their foot resting on the inside of the opposite leg (above the knee as they advance). Hold this position for 30 seconds. Then, have them slowly move their arms straight out to their sides while bending forward and extending their foot behind them to land in “airplane” position. Have them hold for as long as possible. Teach the class to engage (tighten) their abdominal muscles and focus on a spot on the floor to help them balance. Repeat on the other side.

**Lunge Time:** Cadets move around the room while performing walking lunges for 1 minute. Remind students that the knee should not go beyond the toes when lunging forward.

**Take a Seat:** Have students find a place on the wall and slide down into a position as if they are sitting in a 90-degree angle against the wall. Back should be flat against the wall, knees directly above ankles. Knees should NOT extend beyond toes. Hold for as long as possible and repeat 3 times

**Add It Up:** Leader lists 10 exercises on the board. Partners face one another and pump fist in unison while counting, 'one, two, three.' On 'three' both partners reveal a number 1-5 with fingers/thumb. Partners quickly add up the numbers and refer to the list to see the exercise to perform for 30 seconds. Change partners and repeat activity.

**Rock, Paper, Scissors with Legs:** Cadets play a traditional game of Rock, Paper, Scissors with their feet. Jump 3 times with feet together and then choose position: rock = feet together; paper = feet apart; scissors = one foot forward and one foot back. Cadets play best out of three with a partner and then find a new partner to challenge.

**Group movements.** Have a fitness mentor lead the group through a series of movements. Have music playing if possible.

- Marching at mark time
- Jogging in place
- Arm rotations, forward and back
- Jump rope movements
- Swimming motions
- Throwing movements
- Toe touches
- Squats
- Heel lifts
- Crossing knees to elbows
- Quad stretches
- Hop on one leg
- Jump with 180° turn
- Quick feet

**2-5 Outings.** Keep fitness in mind when planning Saturday activities for the squadron. Consider activities such as day hikes, orienteering, geocaching, mud runs or adventure races, and rappelling.

**2-6 Multi-Squadron Competitive Events.** Fun competitive events at the group and wing level are a great way to bring cadets together and shine a light on fitness. Consider organizing a Cadet Ironman Competition or other competitive multi-event program.

## Chapter 3

# Academics

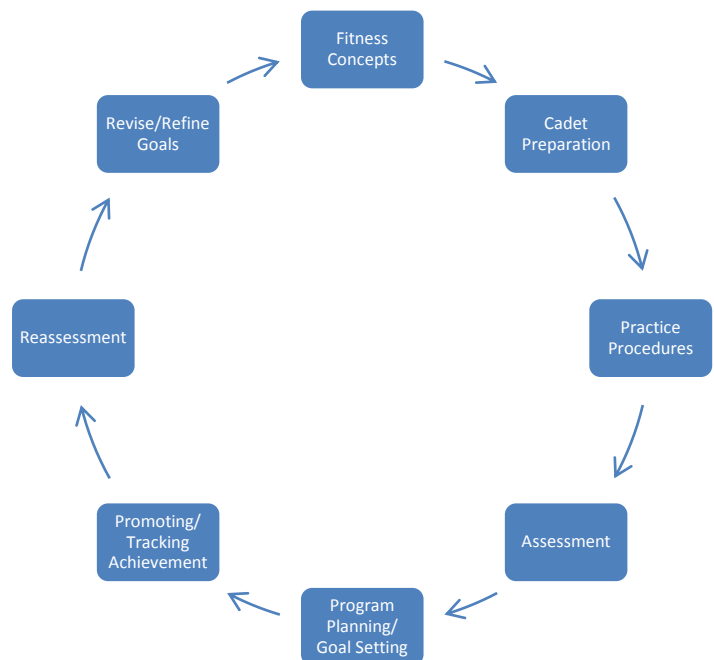
**3-1 Introduction.** To fully gain the health benefits of physical fitness it's important to develop the cognitive concepts related to fitness. It's also important for instructors to understand the process of fitness education in order to properly create and administer a fitness program.

**3-2 Meetings.** Units are required to schedule a minimum of 1 hour of fitness programming each month. At least 45 minutes of that time should be moderate to vigorous physical activity, leaving about 15 minutes on average for classroom instruction. Recommended best practice: Teach a 15 minute class and then put it into practice. E.g. teach a class about flexibility then head outside for a session of dynamic and partnered stretching. Or teach a class about heart rates, then do an activity measuring a partner's heart rate after rest, moderate and intense activity.

**3-3 Selecting Quality Classes.** A variety of prepared lesson plans will be included in the forthcoming CAPP 60-52, Cadet Fitness Leader Guide. In the meantime, choose nationally recognized, evidence-based sources for lesson content.

**3-4 Fitness Education Process.** Fitness education isn't a one-and-done lesson. It's a continuous cycle where cadets learn concepts, put them into practice in their lives, assess, and refine.

- 1. Instruction About Activity and Fitness Concepts:** Students learn fitness and activity terminology and principles of training
- 2. Student Participation in Conditioning Activities:** Students learn the importance of warm up and cool down, exercises and strategies for both; and daily activity
- 3. Instruction on Test Items:** Students learn the following about each test item: Why it is important for health; what it measures; and how to administer. Students practice the test items on a regular basis through warm ups, station work, etc.
- 4. Assessment of Fitness Levels:** Students complete the fitness assessments (self, peer, institutionalized, personal best)



5. **Planning the Fitness Program and Setting Goals:** Students analyze their scores in relation to the HFZ Standards, set goals to improve, and create a personal fitness program
6. **Promoting and Tracking Physical Activity:** Students implement their plan through regular physical activity and should track/log their progress
7. **Reassessment:** Students retake the test to check for improvement and goal achievement. Both are vital parts of establishing and improving behavior patterns
8. **Revision:** Reassessment yields new information for students so that you can revise or refine goals and plans.

## Chapter 4

# Attitudes

**4-1 Introduction.** No amount of teaching, demonstration, practice and tracking is going to make a cadet fit if they're not motivated to do so. The attitudes component of the fitness program refers to motivating each cadet to be their personal best through a supportive environment, goal setting, active participation, and sharing.

**4-2 Physical Activity Promotion.** Cadets arrive to the Cadet Program with varying predispositions towards physical activity. Some feel confident in their abilities and already believe exercise is a fun and worthwhile activity. Others do not feel capable of performing well or have a negative attitude towards fitness. The role of the fitness education officer is to enable the cadet's active participation and reinforce that behavior. Enabling factors include providing opportunities to try a variety of enjoyable activities, creating a supportive environment and teaching the skills necessary to succeed in the activities. Reinforcing factors include modeling active behaviors, encouraging participation and enhancing perceptions of confidence in cadets.

**4-3 Goal Setting and Motivation.** Goal setting is a mechanism that helps cadets understand their potential and feel satisfied with their accomplishments. Establishing goals is a good way to encourage changes in behavior that lead to improved health and fitness. Using goals created from personal assessments establishes ownership and fosters pride in the process. Written action plans help to establish a pathway to the destination that has been set.

**4-4 Fitness Goal-Setting Steps.** See the Fitness Goal Setting worksheet in the appendix. Adapted from Physical Education for Lifelong Fitness.

1. **Determine a baseline.** The baseline is an accounting of the current fitness level of the behaviors needing change. Thus, in setting goals to enhance personal fitness, the first step is to assess the current level of fitness.
2. **Clearly define the desired outcome.** If in the initial assessment it is determined that improvement in abdominal strength and endurance is needed, the cadet can use the Fitnessgram healthy fitness zone charts as a guide in setting the desired outcome. The desired outcome would be that the cadet would be able to complete 24 curl-ups at a set cadence.
3. **List the activities to be performed or the strategies needed to achieve the desired outcome.** Using the FITT guidelines helps the cadet ensure specificity in the setting of the activities: frequency (e.g., how many times per day or week an exercise will be performed), intensity (e.g., how hard the cadet will exercise), time (e.g., how long or how many times the cadet will perform the exercise), and type (e.g., the types of exercise that will enhance abdominal strength and endurance).
4. **Identify a timeline for reassessment and the accomplishment of the goal.** Often, this is written at the beginning of the goal, as in the following: "At the end of six weeks, I will be able to complete 24 repetitions during the curl-up assessment."
5. **Commit to the achievement of the goal.** The best way to accomplish this is by using fitness mentors. The cadet and the mentor both sign the paper, and the paper is then posted in a place that reminds the cadet to work towards the goal, perhaps on the inside of their locker door, on the refrigerator at home (e.g., for a nutrition goal), or in a daily journal. Mentors should be told to check frequently with their goal partner and to provide encouragement. They can do this in person or by phone, email or texting.

6. **Reassess and reinforce.** Reassessment should occur not only at the end of the period but also at least weekly. Reinforcement occurs daily from both the cadet and the fitness mentor after each reassessment period. For cadets who need extrinsic motivation, the reinforcement might come in the form of recognition on the Squadron Personal Best board or earning the fitness pin.

**4-5 S.M.A.R.T. Goals.** Cadets may already be familiar with the S.M.A.R.T. goal setting process that can be helpful in defining the desired outcome. A cadet who runs a 12-minute-mile wants to improve his cardiovascular fitness. Is a goal to run a 6-minute-mile next month a good one? See CAPP 60-31 for more information about goal setting.

**4-6 Fitness Log.** Fitness logs provide a way to record behaviors and monitor progress. It's highly recommended that squadrons encourage the use of fitness logs as way of reinforcing physical activity as a normal expectation of cadet life.

**4-7 Mentoring.** Fitness mentoring for cadet officers and NCOs will be discussed at length in the forthcoming CAPP 60-52, Cadet Fitness Leader Guide.

**4-8 Squadron Recognition.** See Squadron Fitness Hall of Fame and Squadron Personal Best Board in Awards chapter.

**4-9 Promotion Boards.** In person promotion boards are required at least once per phase in the Cadet Program. It's highly recommended that squadron incorporate fitness into the board process. Ask cadet about their past and current fitness goals. What have they done to prepare themselves to meet those goals? Do they have any fitness successes or challenges they'd like to share? Once they're in the later phases, how are they helping to motivate and support the fitness goals of their subordinates and peers?

**4-10 Failure to Achieve Goals.** As much as we support and encourage cadets in setting goals, working diligently and accomplishing great things, some cadets will fail to reach their stated fitness goals. When a cadet fails to achieve a goal, time should be spent helping the cadet to understand what happened. Was the goal too ambitious, the timeline too short? Were they not able to execute their action plan for some reason? Do not deny promotions or institute negative consequences for failure to meet a particular fitness goal. Managing goals is a continual process and cadets will grow more skillful with practice.

# Chapter 5

## Assessment

**5-1 Introduction.** Fitness assessment is an integral piece of the fitness curriculum. While leaders should include a variety of assessments in a comprehensive fitness program, this chapter is focused on the formalized Cadet Physical Fitness Test.

**5-2 Fitnessgram.** CAP's fitness program is aligned with the Presidential Youth Fitness Program which uses Fitnessgram assessment protocols. Scientific information is used to determine the amount of fitness needed to meet minimum health levels. Fitnessgram uses a healthy fitness zone (HFZ) to designate the range of fitness scores associated with good health. The healthy fitness zone is based on criterion-referenced standards because they represent the age- and gender-appropriate fitness levels that a young person needs for good health.

**5-3 The Cadet Physical Fitness Test.** The CPFT measures aerobic capacity, muscular strength, endurance, and flexibility. The CPFT consists of four events:

- Aerobic capacity- The PACER or One-mile run
- Abdominal strength and endurance- Curl-up
- Upper body strength and endurance- 90° push-up
- Flexibility- Back-saver sit-and-reach

Testing protocols are found in Appendix A.

**5-4 Frequency.** The test is administered quarterly. Test may be administered on meeting nights or weekends as a Saturday half-day event with sister squadrons, Group or Wing. Make up tests may be offered more frequently at the discretion of the PEO.

**5-5 Scoring.** The CPFT is not a pass or fail test. Cadets score in the Needs Improvement or the Healthy Fitness Zone for each event. For promotion purposes starting at the Wright Brothers Award and beyond cadets must score in the HFZ in the "run plus two out of three" to earn a HFZ credential good for six months from the testing date.

Cadets assigned to Physical Fitness Category II, III, or IV are waived from one or more CPFT events due to a medical condition. Testing officers score each waived event as in the HFZ. For example, a cadet waived from the push-up need only score in the HFZ in the run, plus the curl-up or sit-and- reach.

### Why health-related fitness?

Historically, emphasis was placed on skill- or sport- related fitness (e.g. speed as measured by the students' mile-run time). Students' scores were compared with those of other students (normative scoring), leading many students to perceive themselves as unfit. Conversely, some students were able to achieve good scores primarily because of their good genetic makeup, giving them a false picture of their present fitness levels.

Effective health-related fitness assessments are not used to compare students with each other; they are used as a means to communicate each person's level of fitness. Scores achieved using appropriate forms of fitness assessment can be used to establish personal goals that allow students to attain a level of fitness associated with good health. Personal goals rather than peer competition are the focus, allowing students to experience feelings of success based on their own levels of achievement.

Physical Education for Lifelong Fitness, the Physical Best Teachers' Guide, 3<sup>rd</sup> Edition.

5-6 **Cadet Promotions.** To be eligible for promotion cadets must participate actively in the fitness program at their unit.

**Phase I cadets.** Cadets in Phase I take the CPFT to establish their fitness baseline. It is not required for Phase I cadets to score in the HFZ, but they must take the test to understand their current fitness level and help leaders to identify the appropriate training plan. A cadet must attempt the CPFT to earn Achievement 1. Separate CPFTs are not required for Achievements 2 and 3 as long as the cadet took the CPFT within the past 6 months.



**Wright Brothers Award.** To earn the Wright Brothers Award cadets must have a valid HFZ credential (Must have taken the CPFT and scored in the HFZ for the run plus at least two other events within the last six months).

**Phase II, III, and IV Cadets.** After completing Phase I cadets must have a valid HFZ credential to promote.

**Spaatz Award.** As the highest cadet award, the Spaatz has a special status in the Cadet Program. Cadets who strive for an elite award must demonstrate an elite level of fitness. See section 5-12.

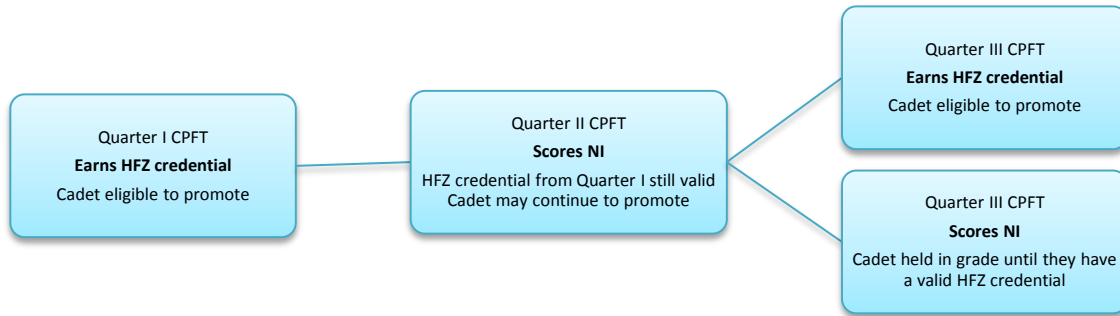
5-7 **Test Administrators.** The CPFT must be administered by a senior member, who need not be the unit's testing officer, a CAP-USAF member, or a physical education teacher. Cadets may assist in proctoring the CPFT under the supervision of the test administrator.

5-8 **Preparing for the Assessment.** Cadets must have a chance to practice the assessments before taking the test. Announce assessments in advance. Unannounced CPFTs can lead to negative attitudes towards both fitness and physical activity.

5-9 **Recording Results.** CPFT assessment scores are recorded in the Cadet Promotions module of eServices. Cadets and PEOs may also enter personal goals into eServices for tracking.



**5-10 Needs Improvement.** Cadets who score in the Needs Improvement zone on the run or in two or more other events do not earn a HFZ credential for that quarter’s CPFT. Cadets without a valid HFZ credential are retained in grade. Since the credential is valid for 6 months and the test is done quarterly it’s possible for a cadet to score NI on the CPFT, but continue to promote (see diagram below). Commanders and testing officers may authorize CPFT retesting outside the established quarterly cycle at their discretion. For retests, it is not necessary to complete all four tests; cadets may retake only one or more portions at a time.



### Standards for Healthy Fitness Zone

		RUN EITHER		PLUS 2 of 3		
		PACER (20m)	Mile run	Curl-ups	Push-ups	Sit & reach
Age		(no. completed)	(min:sec)	(no. completed)	(no. completed)	(avg. inches)
<b>Males</b>	10	17	11:30	12	7	8
	11	20	11:10	15	8	8
	12	23	10:40	18	10	8
	13	29	9:46	21	12	8
	14	36	9:22	24	14	8
	15	42	9:04	24	16	8
	16	47	8:42	24	18	8
	17	50	8:22	24	18	8
	18+	54	8:04	24	18	8
<b>Females</b>	10	17	11:30	12	7	9
	11	20	11:10	15	7	10
	12	23	10:40	18	7	10
	13	25	10:20	18	7	10
	14	27	10:09	18	7	10
	15	30	9:58	18	7	12
	16	32	9:46	18	7	12
	17	35	9:34	18	7	12
	18+	38	9:22	18	7	12

5-11 **Outside Fitnessgram Tests.** The Presidential Youth Fitness Program is used in many schools across the country. At the discretion of the unit commander, cadets may submit their teacher administered Fitnessgram results in place of the CPFT.

5-12 **Spatz Award.** Come time for Spatz, it's virtually guaranteed that the cadet will be age 17 or older, so Air Force fitness standards may be applied. During the Spatz testing cadets will be administered a portion of the Candidate Fitness Assessment that US Air Force Academy applicants take. Test items are curl-ups (2 minutes), push-ups (2 minutes), and the mile run. Please note that the testing protocols are different from the PYFP standards used for all previous promotions. To earn the Spatz award cadet must meet or exceed the average score of USAFA candidates. It is recommended that cadets with their eye on earning the Spatz set their personal training goals higher than the HFZ minimums starting at the Mitchell Award. A detailed test administration guide is available on the Spatz webpage, [www.capmembers.com/spatz](http://www.capmembers.com/spatz).

#### Spatz Award Fitness Test

	Males	Females
Curl-ups	81	78
Push-ups	61	41
Mile Run	6:56	7:35

#### PYFP Fitnessgram v. CAP's CPFT

The full PYFP Fitnessgram includes test items not included in CAP's CPFT. These include the walk test, trunk lift, shoulder stretch and body composition tests. These tests have been omitted from CAP's CPFT to make the test easier to administer for volunteers in the field. The teachers who administer the PYFP in schools have training and equipment not available to all CAP squadrons.

## Chapter 6

# Awards & Recognition

**6-1 Introduction.** All cadets are motivated in different ways. The goal of the awards and recognition offered in the cadet fitness program is to offer something for everyone. Criterion referenced performance awards can help motivate fitness, process awards foster regular active behavior, and improvement awards will make it possible for all cadets to be successful.

**6-2 Squadron Fitness Hall of Fame.** Each unit will create and maintain a Hall of Fame board recognizing individuals with the highest achievements in fitness. The display can be as simple or as elaborate as you choose, physical or digital on the unit's website. At the least record the highest scores for CPFT events, but you're not limited to only recognizing achievement for those events. Consider creating a display in a centralized location in your squadron meeting location to recognize the elite athletes in your unit.

**6-3 Squadron Personal Best Board.** Each unit will create and maintain a Personal Best Board recognizing the achievements of each individual in the unit. The display can be as simple or as elaborate as you choose, physical or digital on the unit's website. At the least record the best scores for CPFT events, but you're not limited to only recognizing achievement in those events. Consider creating a display in a centralized location in your squadron meeting location to recognize the achievements of all cadets. While the supportive environment of the squadron should make all cadets feel proud of their personal achievements, cadets may opt out of having their name and times displayed publicly if they so choose.

**6-4 Quality Cadet Unit Award.** To continue to encourage individual cadets and squadrons to strive for excellence, fitness will be a consideration in the Quality Cadet Unit Award. This award recognizes units which have a vibrant Cadet Program. The criteria are adjusted each year to keep units working towards excellence. Check out [www.capmembers.com/qcu](http://www.capmembers.com/qcu) for more information for specifics.

**6-5 Fitness Officer of the Year.** This award recognizes the fitness officer who has contributed the most to the fitness program during the previous year. It is presented annually at the wing, region, and national levels.

Eligibility. Any Fitness Officer in the Squadron, Group, Wing or Region is eligible.

### Outside Award Programs

**Presidential Youth Fitness Award** Cadets who score in the Healthy Fitness Zone on at least five test categories of the FITNESSGRAM assessment are eligible to receive the Presidential Youth Fitness Award. This will include assessments that are not included in the CPFT. Go to [PYFP.org](http://PYFP.org) to learn more.

**Presidential Active Lifestyle Award (PALA+)** A six week challenge program geared toward people who want to set themselves on the road to a healthier life through positive changes to physical activity and eating behaviors. Go to [presidentschallenge.org](http://presidentschallenge.org) to learn more.

**Presidential Champions** Aimed at people who are already physically active, the Presidential Champions challenge is all about pushing yourself to be even more active, logging activities, and earning points as you do it. Go to [presidentschallenge.org](http://presidentschallenge.org) to learn more.

Hillsdale Cadet Squadron Hall of Fame					
Pushups			Mile Run		
1. C/MSgt. Li	82	11/17	1. C/Capt. Johnson	6:14	8/18
2. C/Maj Williams	74	10/20	2. C/Maj Williams	6:32	7/21
3. C/SrA Olson	72	10/20	3. C/TSgt Rodriguez	7:09	11/17
Curl-ups			PACER Laps		
1. C/Amn Curry	62	10/20	1. C/TSgt Rodriguez	95	8/25
2. C/MSgt Perez	59	9/15	2. C/Maj Williams	87	6/14
3. C/SrA Lam	58	9/15	3. C/SrA Lam	66	8/25
Plank			5k Run		
1. C/MSgt. Li	388	8/25	1. C/TSgt Rodriguez	24:18	6/16
2. C/Maj Brown	152	6/14	2. C/Maj Williams	28:46	6/16
3. C/SrA Olson	140	8/25	3. C/2d Lt Garcia	28:43	6/16
Sit & Reach			100m Sprint		
1. C/Lt Col Brown	11.5	8/25	1. C/Capt. Johnson	82	8/25
2. C/2d Lt Garcia	10.5	6/14	2. C/MSgt Perez	74	6/14
3. C/A1C Smith	10.4	8/25	3. C/SrA Olson	72	8/25

Nomination Process: Any CAP member may nominate an eligible member for the award. Nominations must describe why the individual is deserving of the award and be submitted in narrative format, per the timeline below:

By 15 January - Nominations are due at wing headquarters for the wing-level award.

By 15 February - Wings submit their nomination to the region for the region-level award.

By 15 March - Regions submit their nomination to National Headquarters/CP for the national-level award.

By 15 April - National Headquarters coordinates the selection of the national-level award winner with the appropriate individual(s) or committee, as designated by the National Commander. The National Commander is the approving authority for the award.



# Aerobic Capacity

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

Many terms have been used to describe this dimension of physical fitness, including cardiovascular fitness, cardiorespiratory fitness, cardiorespiratory endurance, aerobic fitness, aerobic work capacity, and physical working capacity. Although defined somewhat differently, these terms can generally be considered synonymous with aerobic capacity. A laboratory measure of maximal oxygen uptake ( $VO_{2max}$ ) is generally considered to be the best measure of aerobic capacity. Because differences in body size can influence oxygen uptake, aerobic capacity is typically expressed relative to body weight (i.e., milliliters  $O_2$  consumed per kilogram of body weight per minute, or  $ml \cdot kg^{-1} \cdot min^{-1}$ ).

The FITNESSGRAM program provides three field tests of aerobic capacity (PACER, one-mile run/walk, and walk test). Beginning with version 8.6 and version 9 of the FITNESSGRAM software, estimates of aerobic capacity are reported as  $VO_{2max}$  and expressed as  $ml \cdot kg^{-1} \cdot min^{-1}$ . For the one-mile run/walk and the walk test, calculation of aerobic capacity requires the use of BMI (which is calculated from height and weight). Therefore, entry of height and weight are required in order to estimate  $VO_{2max}$  when these tests are used. High test-retest reliability and accurate estimates of measured  $VO_{2max}$  have been demonstrated for all measures of aerobic capacity. The following sections provide guidelines for administering and scoring all three tests.

## ***Need Additional Resources?***

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

## Overview of the FITNESSGRAM Aerobic Capacity Standards

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

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

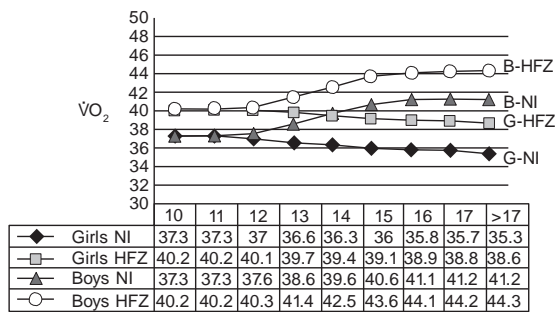
2. The health-related standards used to evaluate aerobic capacity are age and sex specific and also take into account normal changes during growth and maturation. The values for boys increase with age, while the values for girls decrease with age. These changes do not imply higher expectations for boys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

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

4. The new standards allow classification into three unique zones (rather than two) with the use of two parallel lines. Students who have scores above the top line for their sex would be classified in the **Healthy Fitness Zone**. A child above this line would be classified as having sufficient fitness for good health. Students who have scores between the two lines would be classified in the **Needs Improvement** and receive a message that they should work to reach the Healthy Fitness Zone. Students below the bottom line would be classified in the **Needs Improvement—Health Risk** zone. This lowest fitness zone would provide youth and parents with an appropriate warning that this low level of fitness increases health risks.

The use of three distinct fitness zones makes it possible to provide more specific information about health and potential health risks. Students in the HFZ are provided with feedback to maintain their fitness, while students in the Needs Improvement zone are appropriately warned about possible health risks if their fitness remains low.

Comparison of Boys and Girls



## PACER

### ◊ Recommended

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

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

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

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

### Test Objective

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

### Equipment and Facilities

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

a score sheet. Students should wear shoes with nonslip soles. Plan for each student to have a 40- to 60-inch-wide space for 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 runners who have finished and for scorekeepers. You may want to paint lines or draw chalk lines to assist students in running in a straight line.

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

### Test Instructions

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

( continued )

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

### **When to Stop**

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

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

### **Scoring**

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

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

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

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

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

### **Suggestions for Test Administration**

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

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

( continued )



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

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

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

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

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

## One-Mile Run

### ♦ *Alternative*

The one-mile run can be used instead of the PACER to provide an estimate of aerobic capacity ( $\dot{V}O_2\text{max}$ ). For students who enjoy running and are highly motivated, it is a very good alternative assessment. Scoring of the one-mile run will require the input of a student's height and weight since the calculation of aerobic capacity includes BMI.

### **Test Objective**

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

### **Equipment and Facilities**

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

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

### **Test Instructions**

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

### **Scoring**

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

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

( continued )

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

### **Suggestions for Test Administration**

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

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

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



photo © Human Kinetics. Student running.



# 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.

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

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

***Need Additional Resources?*** For complete information about FITNESSGRAM, visit [www.fitnessgram.net](http://www.fitnessgram.net). To order the FITNESSGRAM

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

## Abdominal Strength and Endurance

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

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

### Curl-Up

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

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

### Test Objective

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

### Equipment and Facilities

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

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

### Test Instructions

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

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

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

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

( continued )



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

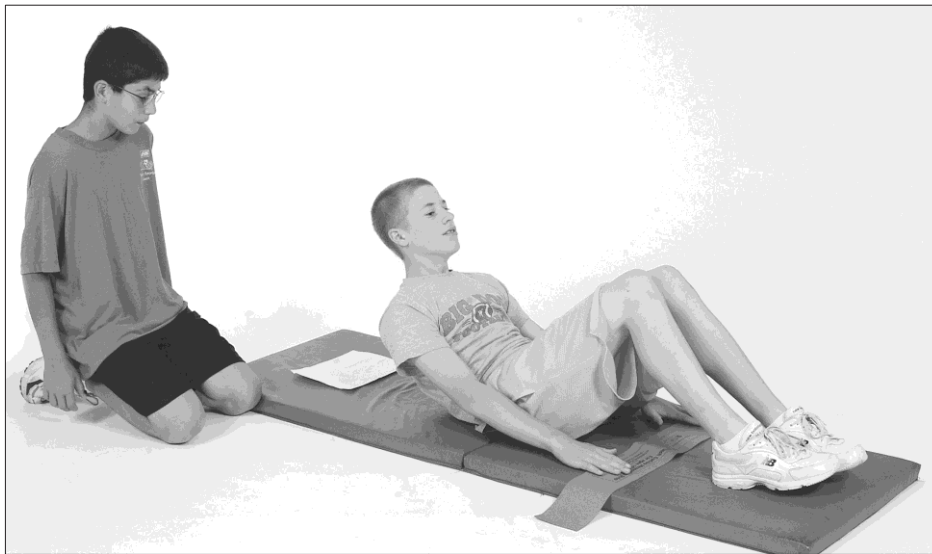


Photo © Human Kinetics. Position of the student in the "up" position for the curl-up test.

( continued )



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

the shoulders before beginning the test, he or she may be able to get the fingertips to the other side of the testing strip by merely moving the arms and shoulders up and down. Keeping heels in contact with the mat, partner A curls up slowly, sliding fingers across the measuring strip until fingertips reach the other side; then partner A curls back down until his or her head touches the piece of paper on the mat. Movement should be slow and gauged to the specified cadence of about 20 curl-ups per minute (1 curl every 3 seconds). The teacher should call a cadence or use a prerecorded cadence. A recorded cadence should be used to ensure accurate testing for students. Partner A continues with-out pausing until he or she can no longer continue or has completed 75 curl-ups.

### **When to Stop**

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

### **Form Corrections**

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

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

### **Scoring**

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

### **Suggestions for Test Administration**

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

( continued )

- 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.**

## Upper Body Strength and Endurance

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

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

### 90° Push-Up

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

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

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

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

( continued )

### Test Objective

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

### Equipment and Facilities

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

### Test Instructions

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

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



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

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

### When to Stop

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

### Form Corrections

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

### Scoring

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

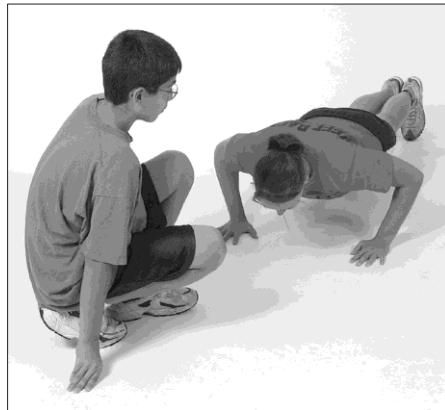


Photo © Human Kinetics. Student in the "down" position for the 90° push-up test.



( continued )

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

### **Suggestions for Test Administration**

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

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

## **Flexibility**

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

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

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

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

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

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

( continued )

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

### **Test Objective**

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

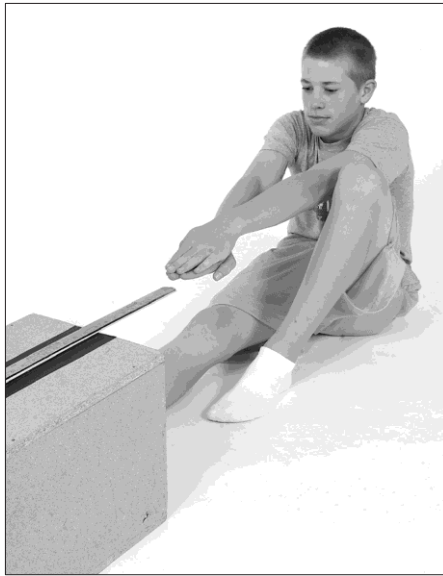
### **Equipment and Facilities**

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

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

### **Test Instructions**

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



**Photo © Human Kinetics.** Starting position for measuring the right side.



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

( continued )

Back-Saver Sit and Reach ( *continued* )

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

**Scoring**

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

**Suggestions for Test**

**Administration**

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

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

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

□ Hands should reach forward evenly.

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

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

## The PACER Individual Score Sheet

Date	Lane	Cadet Name	Laps Completed

Laps (20-meter lengths)

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

Score-keeper: \_\_\_\_\_

## Cadet Physical Fitness Category Assignment

Physical fitness is a component of the Civil Air Patrol Cadet Program. Unless restricted by a physician, cadets participate in a variety of calisthenics, sports, and other vigorous physical activity. Periodically, in their quest to progress through the program, cadets take a physical fitness assessment.

Please check the appropriate box to let CAP know that your patient is able to participate in, or is restricted from, these activities.

Not Restricted. Cadet is determined to be in good health and may participate in physical fitness exercises without restriction.

Temporarily Restricted. Medical condition or injury is temporary in nature. Normally, cadets will remain in this category for six months or less.

Indefinitely Restricted. Medical condition or injury is chronic or permanent in nature. Conditions lasting more than six months are considered chronic. The cadet is indefinitely restricted from this activity.

Test Event	Not Restricted	Temporarily Restricted	Indefinitely Restricted
Sit and Reach			
Curl-Ups			
Push-Ups			
Mile Run/PACER			

Please explain the nature of any restrictions.

Are there any other activities this individual is restricted from? Please explain.

The information on this request may be shared with Department of Defense agencies. By submitting this form, the cadet and cadet's parent(s) authorize CAP to discuss the information above with the physician.

Physician's Name:

Physician's Telephone:

Physician's Signature:

Date:

Cadet's Name:

CAPID:

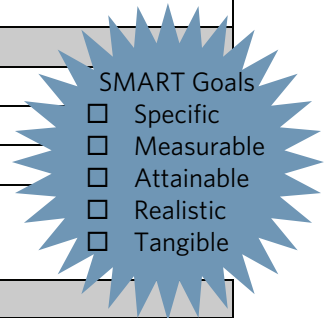
# Fitness Goal Setting

Setting goals is the first step in reaching your dreams. Use this worksheet to help you look at where you are with your fitness currently, think about where you want to be, create an action plan to get you there and commit to working hard to bring it about. Setting, working towards, and reevaluating your goals is an continual practice. The more you familiarize yourself with the process, and the better you know yourself, the more effective your goal setting will be.

## 1. Determine a baseline.

Aerobic Fitness
PACER
Mile Run
Muscular Strength & Endurance
Curl-up
Push-up

Flexibility
Sit & Reach
Other



## 2. Clearly define the desired outcome.

Goals	
Write down at least one long-term goal. Focus on where you want to be in the next 6 months to a year.	
1	
2	
3	

## 3. List activities to be performed.

## 4. Identify a timeline.

Action	Due Date



## 5. Commit to the achievement of the goal.

I pledge to work towards my fitness goals. I commit myself to health and I will push myself to be better each day. I will not be discouraged. If I need help I will reach out to my fitness partner and, in turn, I will support those around me.

I pledge to support my fitness partner in reaching their goals. I will motivate, provide encouragement and accountability.

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**6. Reinforce by working towards your goals daily.** Put this sheet somewhere you'll see it everyday. Reassess at your due dates. Exceed the challenge!

## Standards for Healthy Fitness Zone

		RUN EITHER		PLUS 2 of 3		
		PACER (20m)	Mile run	Curl-ups	Push-ups	Sit & reach
Age		(no. completed)	(min:sec)	(no. completed)	(no. completed)	(avg. inches)
<b>M</b> <b>a</b> <b>i</b> <b>e</b> <b>s</b>	10	17	11:30	12	7	8
	11	20	11:10	15	8	8
	12	23	10:40	18	10	8
	13	29	9:46	21	12	8
	14	36	9:22	24	14	8
	15	42	9:04	24	16	8
	16	47	8:42	24	18	8
	17	50	8:22	24	18	8
	18+	54	8:04	24	18	8
<b>F</b> <b>e</b> <b>m</b> <b>a</b> <b>i</b> <b>e</b> <b>s</b>	10	17	11:30	12	7	9
	11	20	11:10	15	7	10
	12	23	10:40	18	7	10
	13	25	10:20	18	7	10
	14	27	10:09	18	7	10
	15	30	9:58	18	7	12
	16	32	9:46	18	7	12
	17	35	9:34	18	7	12
	18+	38	9:22	18	7	12