MERIT BADGE SERIES

ATHLETICS

Scouting America

STEM-Based

SCOUTING AMERICA
MERIT BADGE SERIES

ATHLETICS

"Enhancing our youths' competitive edge through merit badges"

Scouting America

Requirements

Scouts should go to www.scouting.org/merit-badges/Athletics or check Scoutbook for the latest requirements.

If meeting any of the requirements for this merit badge is against the Scout's religious convictions, the requirement does not have to be done if the Scout's parent or guardian and the proper religious advisors state in writing that to do so would be against religious convictions. The Scout's parent or guardian must also accept full responsibility for anything that might happen because of this exemption.

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Contents

Athletics and You

Before you begin any fitness program, be sure to get your health care practitioner's approval.

Being involved in an athletic endeavor is not only a way to have fun, but it also is one of the best ways for a person to maintain a healthy and strong body—and make new friends. By keeping your body in good physical condition, you can continue to participate in athletics for much of your life, as well as maintain an active lifestyle. Staying active will also help you ward off and control health problems that affect many people, including obesity, diabetes, high blood pressure, and high cholesterol.

If you observe athletes from a variety of disciplines, you will notice that most are energetic and have developed the bodies needed for their particular athletic endeavor. For instance, swimmers tend to have fully developed shoulder muscles, whereas sprinters have exceptionally muscular hamstrings. Serious athletes usually have trained for much of their lives to keep their bodies in good condition. Athletics is not only fun, but also a way to help you develop healthy habits for a lifetime.

Before You Begin

All people who participate in athletics should have a thorough physical examination by their health care provider. An examination probably will include measuring your heart rate, blood pressure, height, and weight; checking heart and lung sounds; testing your reflexes; and examining your eyes. A health care provider also may ask questions and record observations about your psychosocial (mental and social) traits, nutrition habits, physical activity, and family life.

Zzzzz. Athletes need plenty of rest to allow the body to recover from training or competition. The best rest comes from a good night's sleep. As a growing, active youth, you should get eight to 10 hours of sleep each night.

Your physician will keep a permanent record of your health history, growth, immunizations, and other data.

During a physical exam, a health care provider may detect underlying conditions or symptoms that need treatment or correction or that could prevent or limit a person from participating in athletics. The provider also may offer advice about nutrition and how to train safely. Get the green light from your provider before undertaking athletic activities.

Ask your health care provider about vitamins and minerals. Some sports nutritionists recommend that athletes take multivitamins, but you should consult your health care provider before doing so. Maintaining a balanced diet—eating a variety of foods—will help ensure that your body gets the vitamins and minerals it needs for healthy growth, development, and maintenance.

Slow and Easy Start

If you have not been active or are just beginning an athletic program, you should start slowly and gradually increase your time and intensity. For example, a runner might begin by walking and running for 20 minutes a day, three or four times a week. Then the next week, the time might be increased to 23 minutes per workout. You also can gradually lengthen the distance you run. It can take several weeks to be fit enough to participate in athletics, so be patient and try not to rush the training.

A great way to get into shape for athletics is to complete the requirements for the Personal Fitness merit badge. The next page of this pamphlet outlines some other ways to get moving.

A great way to get into shape for athletics is to complete the requirements for the Personal Fitness merit badge. Here are some other suggestions:

1. Walk around your neighborhood and pick up trash.
2. Plan a scavenger hunt and invite others to join you on the hunt.
3. Hike through a park or nature preserve.
4. Ride a bicycle (and wear a helmet!).
5. Go skateboarding.
6. Fly a kite.
7. Toss a baseball or football with a friend or family member.
8. Build a snow fort or make a snowman.
9. Rake leaves and then jump into the pile.
10. Set up a miniature golf course and play the game.

Note: Be sure to talk to your parent or guardian about your plans.

Healthy Habits to Keep a Body Moving

Maintaining a healthy diet is especially important when participating in athletics. Athletes need energy so they can perform without tiring easily. Everyone's dietary needs are different, but it's important to eat a well-balanced diet. Make sure each day to eat something from each of the five food groups: fruits, vegetables, grains, dairy products, and proteins. This way, you will get enough carbohydrates, proteins, and fat, plus the vitamins and minerals you need to perform at your best.

The 2015–2020 federal dietary guidelines for Americans at www.health.gov/dietaryguidelines provides more tips to help you make healthy food choices.

Try to limit your intake of **simple carbohydrates**—foods that include refined sugars and white flour—found in most soft drinks, cookies, pastries, and most processed foods. Simple carbohydrates break down quickly in the digestive system, causing energy "highs" and "lows."

The types of **carbohydrates** that you eat should be mostly derived from whole grains and fresh fruits and fresh or frozen vegetables. Whole-grain bread, bagels, crackers, cereals, lentils, brown rice, and pasta all are good sources of carbohydrates.

Growing bodies also need a lot of **protein.** Protein helps build and repair damaged tissue and helps the body make antibodies to increase a person's resistance to disease. Good sources of protein include fish, poultry, pork, beef, eggs, beans, and nuts.

Fat is important, too, for energy. It helps the body use carbohydrates and insulates it in cold weather. Certain fats, however, are healthier than others. You should limit foods high in **saturated fats,** which increase your cholesterol level and risk of heart disease. Foods that contain high quantities of saturated fats include meat and dairy products—butter, eggs, cheese, and whole milk. Saturated fats typically remain solid at room temperature.

Unsaturated fats are either polyunsaturated or monounsaturated, depending on their molecular structure. Most come from plant sources and are liquid at room temperature. These are the "good" fats. Try to replace many of the saturated fats in your diet with unsaturated fats to help you lower your cholesterol level and maintain a healthy heart. Unsaturated fats are found in oily fish like salmon, albacore tuna, and sardines; nuts; olives; avocados; canola and nut oils; and vegetable oils from corn, safflowers, and sunflowers.

Trans fats are formed when vegetable oils are processed into margarine or shortening through hydrogenation. This process turns liquid oil into a solid fat at room temperature. The body has difficulty using these chemically altered fats, which are used to make french fries, doughnuts, crackers, and

cookies. Read the labels on packaged food products and try to avoid eating foods that contain partially hydrogenated or hydrogenated oil.

Keep your body hydrated by drinking plenty of **water** each day. Eight to 10 glasses a day is recommended, though athletes will probably need more—especially during workouts. Water helps you stay energized, deal with hot and cold temperatures, and digest food.

Fiber is another important ingredient in your diet. Sometimes called roughage, fiber cannot be digested, but it helps push foods through the digestive tract, reducing the likelihood of constipation. Many whole grains, seeds (such as sesame and poppy), and fresh fruits and vegetables (especially broccoli, cauliflower, and cabbage) are high in fiber.

Be sure you are also getting enough **calcium.** Calcium is found in dairy products such as milk, cheese, and yogurt, and foods such as nuts, beans, broccoli, and canned salmon. Making sure you have at least four servings of calcium daily will help ensure that your bones stay strong throughout your life. If you do not get enough calcium in your diet while you are young, you could be at risk for the bone-thinning disease called osteoporosis.

Failing to fuel and refuel your body with good foods can lead to fatigue and injury; you will also be more likely to get sick. Develop good eating habits now so that they will become second nature to you throughout your lifetime.

For more information about nutrition and physical fitness, read the *Cooking* and *Personal Fitness* merit badge pamphlets.

Avoiding Tobacco, Alcohol, and Other Harmful Substances

Drugs have no place in training or competition. To be a strong, healthy performer in athletics and in life, avoid tobacco, alcohol, and other harmful substances.

Tobacco and athletics do not mix. Athletes need to breathe. They need their lungs working at peak capacity. Smoking makes you cough and wheeze, and it interferes with proper lung growth and lung function. It injures the airways and air sacs of the lungs. Using tobacco can leave you gasping for air when you need it most.

Smoking not only reduces athletic performance and stamina, it damages nearly every organ in the body.

The blood carries the poisons from smoking to all parts of the body, damaging internal organs from the brain to the bladder. Scientists now know that smoking causes cancers of

Think Small

Many people follow the traditional three-square-meals-a-day routine. However, many sports nutritionists recommend that athletes eat five smaller meals per day. This will help normalize blood sugar and insulin levels more efficiently than eating three larger meals each day. When your blood sugar spikes, or rises, you will get a quick burst of energy for a short period of time, but you soon will experience a strong dip in energy. Smaller meals—about one every three hours throughout the day—will give you a more consistent energy supply.

the mouth, the larynx (voice box), the lungs, and the kidneys. It can also cause a type of leukemia—a cancer of the blood. You might have heard that smoking causes heart disease, but did you know that it raises the risk for stroke, and damages the body's ability to fight infection? Smokers are at high risk of dying from any number of tobacco-related diseases.

If you smoke, you choke.

Cigarettes can contain dozens of dangerous and cancer-causing chemicals, including arsenic (used in pesticides and weed killers), benzene (a toxic solvent), formaldehyde (used to embalm corpses), and polonium 210 (a highly radioactive element). Smoking "casually" or "occasionally" is the same thing as taking poison occasionally. If you wouldn't drink embalming fluid now and then, why would you smoke, even once in a while?

Alcohol is a depressant. It interferes with reflexes and coordination. It slows an athlete's reaction time and impairs balance, vision, hearing, and judgment. Alcohol dehydrates tissues in the body. Drinking water or a sports drink will replace body fluids that are lost from exertion during athletic activities or workouts. Drinking beer or other alcoholic beverages has the opposite effect—alcohol makes the drinker thirstier.

A hangover—the "day-after" effect of consuming alcohol—is marked by headaches, nausea, diarrhea, dehydration, fatigue, and body aches that can diminish athletic performance. The long-term harmful effects of alcohol abuse can include damage to brain and nerve function, weakening of the heart muscle, abnormal blood clotting, and liver failure leading to death.

Steroids mimic the effects of the natural male hormone testosterone. Testosterone triggers the maturing of the male reproductive system in puberty. Taking steroids disrupts the body's natural hormone balance, causing dangerous physical and mental abnormalities. Though steroids are sometimes called "performance-enhancing" drugs, they do not improve agility, skill, or cardiovascular capacity. They act to artificially increase muscle mass at a high cost to the user's health. When used by female athletes, steroids can cause significant cosmetic and reproductive changes.

Side effects range from acne, bloating, and rapid weight gain, to weakened tendons, blood-clotting disorders, liver damage, and heart attacks and strokes. The damage to a steroid user's health can be irreversible and may not show up for months, years—even decades—after the abuse ends. Young people who take steroids may stop growing. The drugs prevent young bones from lengthening, so that steroid users might fail to grow as tall as they should. Athletes who start using steroids often have trouble stopping. Evidence suggests that steroid abusers show the classic symptoms of addiction, including cravings, difficulty quitting, and withdrawal pains.

Steroids can cause severe mood swings, from deep depression to extreme irritability. *'Roid rage* is a term for the explosive, out-of-control aggressiveness associated with steroid use.

Amphetamines are stimulants. Commonly called "uppers," these highly addictive drugs create false feelings of power, strength, and assertiveness. They do not give a user extra physical or mental energy; they impair judgment and distort the user's view of reality. An athlete on uppers may ignore an injury and suffer permanent physical damage. Amphetamines suppress appetite and may cause extreme, life-threatening weight loss.

Other side effects include nerve damage, uncontrollable and abnormal movements of the face and jaw muscles, convulsions, hallucinations, and mental disorders such as paranoia and delusions similar to schizophrenia. Amphetamines damage blood vessels throughout the body. Users may die from ruptured blood vessels in the brain or from heart attacks.

Other drugs—cocaine and crack, heroin, inhalants, LSD, marijuana—also have powerful effects on the body and the mind. They can produce temporary feelings of pleasure or energy, but they can also cause nightmares, depression, and severe mental disturbances. Because the amount of an illegal drug that is swallowed, smoked, inhaled, or injected is not controlled by a doctor, the amount a user will take can be unpredictable. An overdose can result in serious illness, disability, or death.

From the *Scouts BSA Handbook*

Lord Baden-Powell, Scouting's founder, had faith that Scouts were smart enough to figure out what is healthy and right. He urged Scouts not to let others pressure them into using substances that can cause harm. "And if you have been foolish," he said, "there is no law that says you must stay that way."

Ready, Set, Go

Being an effective athlete takes both physical and mental stamina.

You will find that whatever fitness endeavor you undertake, you will be physically challenged as well as mentally challenged. Sometimes you will be mentally alert in your activity and perform well. At other times, you may have some negative feelings and your performance might suffer. Learning to maintain a positive attitude and face up to athletic challenges is as much a part of training as being physically ready.

A study conducted by the U.S. Military Academy at West Point, New York, showed that students who scored higher on physical performances were less likely to drop out of the academy than those who were less physically fit.

Training

When training for an athletic activity, monitor your progress by making a chart or log. Keeping a progress chart will help you determine whether you are improving and if your training schedule is one you can follow. You will be able to customize your schedule to suit your fitness level. Remember to judge your progress and how you perform based on your own abilities. Do not compare yourself against the abilities of other athletes.

As you work on requirement 5, use the sample charts provided later in this pamphlet to help you track your progress.

Warming Up, Cooling Down

It is important to warm up before beginning any activity, and to cool down after your training and competition. add Your warm up and cool down should include low-level activity and stretching.

The key to warming up is taking it slow and easy. This helps raise your heart rate and increases the blood flow to your muscles, supplying them with nutrients and oxygen. Also, your body's temperature increases, which enhances the elasticity (flexibility) of your muscles, ligaments, and tendons. This prepares your body for harder work and helps reduce the risk of injury.

Other good warm-up exercises include jumping jacks, push-ups, running in place, arm rotations, and other calisthenics. You also can lift light weights to prepare your muscles for heavier lifting.

Cooling off after a workout or competition is important. Keep moving after your activity is finished. Stopping suddenly or neglecting the cool-down period could cause cramps in your muscles. After a run, for example, walk or jog slowly for at least a half-mile. Continue to move and then stretch for several more minutes after that.

Warm up with a slow jog of about 10 minutes. After your workout, cool down then stretch with a slow jog or walk of about 10 minutes.

Jumping rope is one simple way to warm up and improve your cardiovascular aerobic endurance and coordination. Start out slow and easy. You can do several different jumps with a rope. The single-foot hop is jumping as the rope passes under your foot once. Hold one foot up while jumping and then alternate feet. With double jumps, the rope must pass under both feet while you are in the air. Try alternating single and double jumps.

Crossover jump

The two-foot jump includes a small hop as the rope clears your feet once before jumping again. To do the boxer's shuffle, alternate your right and left feet as the rope passes under each one time. To perform crossovers, while the rope is turning forward, cross the rope by fully crossing your arms when the rope passes your head. Repeat with the rope turning backward. Start out with 15 to 20 repetitions of each jump. Work up to as many as 50 or more.

S-t-r-e-t-c-h

After participating in any athletic activity, stretch your muscles as part of an effective cool down. Move slowly and do not bounce while stretching.

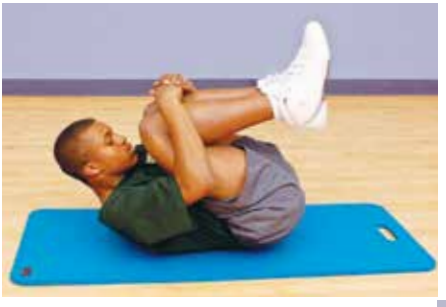
Seat Straddle Lotus. **Sit down, place the soles of your feet together, and drop your knees toward the floor. Place your forearms on the inside of your knees and push your knees toward the ground. Lean forward, bringing your chin to your feet; hold this position for five seconds. Repeat this exercise three to six times.**

Stretch after physical activity, because the muscles are fully warmed up. Do not stretch cold muscles. Be sure to stretch under the supervision of a qualified coach or trainer.

Seat Side Straddle. **Sit with your legs spread apart. Place both hands on the same ankle. Bring your chin to your knee, keeping your leg straight, and hold this position for five seconds. Do this three to six times. Repeat exercise on opposite leg.**

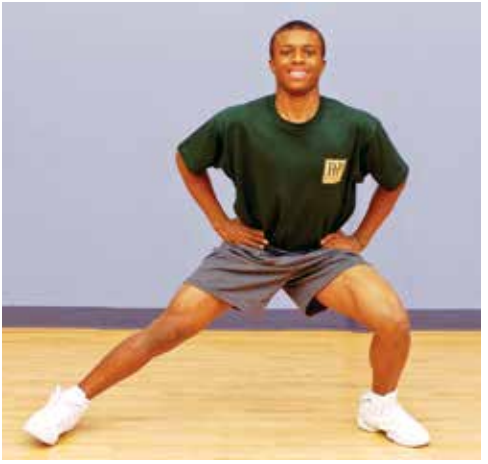
Seat Stretch. **Sit with your legs together, feet flexed, and your hands on your ankles. Bring your chin to your knees; hold this position for five seconds. Repeat this exercise three to six times.**

Lying Quad Stretch. **Lie on your side with one leg straight and the other leg with your leg and hip turned inward and knee bent. Press the bent knee toward the floor; hold this position for five seconds. Do this three to six times. Repeat this exercise with the opposite knee bent.**



Knees to Chest. **Lie on your back with your knees bent. Grasp the tops of your knees and bring them out toward the armpits, rocking gently. Hold this position for five seconds. Repeat this exercise three to five times.**

Forward Lunge. **Kneel on your left leg and place your right leg forward at a right angle to the floor. Lunge forward, keeping your back straight. You should feel this stretch in the left groin area. Hold this position for five seconds. Repeat the lunge three to six times, then do it with the opposite leg.**



Side Lunge. **Stand with your legs apart. Bend your left knee while leaning toward the left. Keep your back and your right leg straight. Hold this position for five seconds. Repeat this exercise three to six times, then do it with the opposite leg.**

Crossover. **Stand with your legs crossed. Keep your feet close together and your legs straight. Touch your toes and hold this position for five seconds. Repeat this exercise three to six times, then switch positions.**

Standing Quad Stretch. **Stand supported, if necessary. Pull one foot to your buttocks; hold this position for five seconds. Repeat this exercise three to six times, then do it with the opposite leg.**

Choosing an Athletic Activity

Choose an activity that matches your body type and abilities. During the year, you might want to participate in a variety of athletic activities so that you gain overall fitness. This also can help you determine which athletic endeavor you like the best.

Participating in an athletic activity means taking the time to learn the rules and proper training methods. For instance, if you enter a track and field competition, you should find out the official rules and regulations posted by USA Track and Field (USATF), the governing body for track and field events. Your coach can help you learn about the official rules and regulations of the activity you choose and can make sure that you have the right equipment and attire.

Ask your merit badge counselor or coach for help in learning the rules and regulations for the athletic activities you pursue.

Progress Charts

Use charts to monitor your progress for three months in four of the groups listed in requirement 5. You may want to practice and train throughout the week and then test yourself each Saturday. At the end of the three months, you will be able to see how much you have improved.

Start out slowly and work to improve upon your performance, such as your mileage in running, distance in swimming, height in jumping, and weight amount in weight training. Each time you work out, note what you did and include other observations such as how you felt before and after your workout, what you ate that day, how many hours you slept the night before, and so on. For basketball, you could switch out different drills for your workouts. You might practice shooting for accuracy on one day and for skill and agility the next. Be sure to warm up, cool down, and stretch after your training session no matter which activity you choose.

Exercise Log

	Week _____							Week _____							Week _____						
Exercise Description	Su	M	T	W	Th	F	Sa	Su	M	T	W	Th	F	Sa	Su	M	T	W	Th	F	Sa

Activity	Start	Week 2	Week 3	Week 4	Week 5	Week 6	Week 8	Week 10	Week 12
Group 1: Sprinting									
100-meter dash									
200-meter dash									
Group 2: Long-Distance Running									
3k run									
5k run									
Group 3: Long Jump OR High Jump									
Running long jump OR running high jump									
Standing long jump OR standing high jump									
Group 4: Swimming									
100-meter swim									
200-meter swim									
Group 5: Pull-ups and Push-ups									
Pull-ups in two minutes									
Push-ups in two minutes									
Group 6: Baseball Throw									
Baseball throw for accuracy, 10 throws									
Baseball throw for distance, 5 throws (total distance)									
Group 7: Basketball									
Basketball shot for accuracy, 10 free-throw shots									

Basketball throw for skill and agility (see the basketball key diagram provided)									
1. Left-side layup									
2. Right-side layup									
3. Left side of hoop, along the key line									
4. Right side of hoop, along the key line									
5. Where key line and free-throw line meet, left side									
6. Where key line and free-throw line meet, right side									
7. Top of the key									
8. Anywhere along the three-point line									
Group 8: Football Kick OR Soccer Kick									
Goals from the 10-yard line, eight kicks									
Football kick or soccer kick for distance, five kicks (total distance)									
Group 9: Weight Lifting									
Chest/bench press, two sets of 15 repetitions each									
Leg curls, two sets of 15 repetitions each									

The information from your progress chart can help you determine whether you need to alter your diet, if you are getting enough rest, and how much—if any—you are improving.

Name Your Game

To fulfill requirement 5, you will need to complete the activities in four of the nine groups listed here, showing improvement over a three-month period.

Sprinting

Sprinting requires good posture, balance, overall strength and stability, and a smooth and efficient running style. It takes great patience to get faster, but with help from a knowledgeable coach, you should see some improvement over time.

In competitions, sprinters usually use starting blocks. However, it is not necessary for you to use them to meet this requirement. At a track meet, you should be prepared to follow the race official's direction. At the start of a race, the official will give runners several commands so that everyone is prepared to take off at the same time.

The first command is "On your marks"—the signal for runners to crouch down and position their feet (10 to 14 inches apart, with the front foot about 8 to 12 inches or so ahead of the back foot) at the starting line. Bend down and place each hand on the track about a shoulder's width apart so that your thumbs and forefingers are directly parallel to (and behind) the starting line. The toe and knee of your back leg should touch the ground.

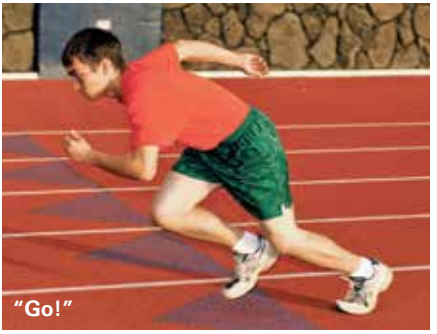
Jumping rope is an excellent exercise for sprinters because the short skipping and hopping movements help improve muscle elasticity in the legs.

"On your marks."

The back foot is your dominant foot, the one you use to kick a ball. Your dominant leg is slightly stronger than your other one, so you will use it to take your first stride.

In cold weather, it is especially important for runners to warm up carefully and stay warm. Otherwise, an injury such as a pulled hamstring could set you back at least several weeks.


"Set."


"Go!"

Next comes the command "Set," which calls for you to raise your back and hips just above shoulder height. Bend your front leg at about 90 degrees and straighten your back leg. Keep your hands positioned at the starting line with elbows turned inward and locked. This movement will shift your body weight forward. Let your head hang naturally, but focus your eyes two or three feet in front of the starting line, not down.

At the "Go" command, keep your head down during the first stride. Your lead arm (on the same side as your front leg) will shoot upward and ahead to lead your rear leg across the starting line. Your rear leg pushes off to thrust your body forward. Then your other arm comes up and your front leg pushes forward. Each time your foot touches the ground, your leg should fully extend.

Bend your arms at an angle between 90 and 110 degrees during this driving phase, and keep pumping both arms quickly to help build and maintain momentum and speed. On the backswing, bring your arm back so that your elbow is higher than your shoulder. As your arm moves forward, bring your hand up to your chin. Do not allow your arms to crisscross.

As you sprint, look straight ahead—not behind you or to the side. Doing so will slow you down.

During training, practice your form following the three commands, then run as fast as you can for three to five strides once you leave the starting line. As always, start out slow when you begin to train—three to five starts in the beginning, gradually building up to about 20 starts. Be prepared to run 100 or 200 meters at full speed each Saturday, or once a week, in order to track your progress.

Long-Distance Running

Begin a training program that slowly builds up your mileage. By gradually increasing the distance you run each week, you will strengthen your muscles, tendons, and ligaments as your body begins adapting to the extra stress. Depending on your physical condition, you could start by running a half-mile to a mile three to four days a week. Keep your pace fairly slow; do not run what you would consider an all-out effort.

A general guideline says that if you are running and still able to hold a conversation with another person, you are probably training efficiently.

Try to increase your distance each week by about 10 percent. For example, if you are running 3 miles a week, you could increase the mileage to 3.3 miles the next week, and so on until you reach the weekly mileage you desire. As with any training program, it is important to make gradual increases in mileage and intensity as you try to improve your speed.

Be sure to get the right shoes for the type of activity in which you plan to participate and get shoes that fit properly.

Running Long Jump

For the running long jump, you will sprint down a runway, take off from a mark or board at the end of the runway, leap as far as possible, and land in a pit filled with sand. The sprint down the runway can be any distance. Do a few practice runs; mark the spot you need to hit with your take-off foot and determine how many strides you need. When you reach the board or mark, take off in a powerful forward and upward direction. Concentrate on keeping your chest high and bringing your knees up. You should land on your heels and swing your arms forward. Hunch your head and shoulders over your knees so you don't fall backward and make a mark behind your heels in the sand.

Running long jump

Your jump will be measured from the edge of the mark or board to the nearest point of contact. If you touch the ground beyond the board before you jump, it is considered a foul and counts as a jump. Each competitor gets three jumps, with the best jump counted. Remember to track your progress.

Standing long jump

Standing Long Jump

The procedure is the same as for the running long jump, but you make your jump from a standing position at the jump line, without running. You may rock back and forth from heels to toes before jumping, but if either foot leaves the ground or slides, it counts as a jump. Crouch, lean forward, and swing your arms backward, then jump horizontally as far as possible with both feet into the jumping pit. Track your progress.

Running high jump

Running High Jump

Your running approach to the bar before jumping is the key element in a successful running high jump. In a hard but controlled manner, run slowly toward the bar and accelerate as you near it. Your approach to the bar should be a curve, much like the letter J. You usually will begin the jump at about arm's length away from the bar. Your body should go straight up and not toward the bar. Many coaches teach that the last step should be a shorter, faster step.

Practice your approach to determine how many strides you need for your takeoff. Do a few practice runs; mark the spot you need to hit with your takeoff foot, and count how many strides you take.

The bar is set at a minimum height and raised each time the jumper clears a particular height. You have three jumps to clear each height of the bar. Track your progress.

The most popular technique for the running high jump is called the Fosbury Flop. It is named after Dick Fosbury, who made the technique famous in the 1968 Olympics when he won the gold medal. Have your coach show you the proper technique of either the Fosbury Flop (jumping headfirst with your back facing the ground as you clear the bar) or the straddle-style jump, in which you go over frontward with one leg leading.

Standing High Jump

The same procedure applies as for the standing long jump, except that you must jump up as high as possible over a bar without a running start. Your feet leave the ground only once, just as you make your attempt. You may rock back and forth from your heels to toes, but if either foot leaves the ground or slides, it counts as a jump. Remember to track your progress.

For all jumping events, be sure to take training slow and easy. The jumping and landing will be hard on your body.

Swimming

The most basic stroke in swimming is the front crawl. Start by practicing the flutter kick, which relies on relaxed ankles and the use of the entire leg. Movement begins at the hips and flows to the feet. Point your feet and keep your knees almost straight, kicking in a beating or fluttering rhythm. Keep the kick smooth and steady, between 8 to 12 inches and just below the water's surface.

For the arm stroke, extend your right arm forward—keeping your fingers together and slightly cupped—and bring it down and back to your hip, pushing water toward your feet; then raise that elbow to extend your arm forward again. Alternate with your left arm. Kick and use the arm stroke in unison to glide through the water.

Front crawl

Exhale through your mouth and nose while your face is in the water. To inhale, roll your head to one side as the arm on that side reaches your hip and the elbow is lifting out of the water. Inhale through your mouth, then turn your face back into the water as your arm is recovering to the extended position in front of you. Start with a 100-meter swim and gradually work up to a 200-meter swim. Track your progress.

To perfect your swim stroke, work closely with your swimming coach.

Warming up is important in swimming, too. Start your workout with a slow, easy swim at medium speed for 50 to 100 yards before the most strenuous part of the workout.

Pull-up

Pull-up

Using a bar about 6 inches above your upper reach, begin by hanging from the bar with your arms fully extended, palms forward and directly above your shoulders. Pull up until you can touch the top of the bar with the bottom of your outstretched chin. Record the total number of pull-ups you complete. Track your progress.

If you have a hard time doing pull-ups, begin your exercise training by doing modified pull-ups. This could include doing "chin-ups" by holding the bar with your palms facing you, using a lower bar so you don't pull your entire body weight up; or if the bar is low enough, "jumping" up to help propel yourself. Another method is demonstrated on page 42 using machine weights.

Whenever you are outdoors, be sure to protect yourself from the sun with sunscreen. Your sunscreen should have a sun protection factor (SPF) of at least 30. Give special attention to your face, ears, nose, and neck. If you are sweating or if you go swimming, reapply sunscreen more frequently.

Push-up

Start out with the modified push-up. Lie face down with your arms bent, the palms of your hands flat against the floor and under your shoulders. Keeping your spine and neck straight, let your knees serve as support while you push yourself upward until your arms are fully extended. Try not to lock your elbows. Slowly lower yourself back to the floor, then repeat.

For the modified push-up, you will keep your shoulders, hips, and legs in a straight line from the knees to the head. As your strength increases, shift to the regular push-up position with your weight on your hands and toes. A good guideline to follow is that, if you can do 10 modified push-ups without difficulty, you should switch to regular push-ups. Keep your spine and legs in a straight line. Record the total number of push-ups you complete. Track your progress.

Drink plenty of water during your workouts. Water not only keeps you hydrated, but also helps fight fatigue.

Modified push-up

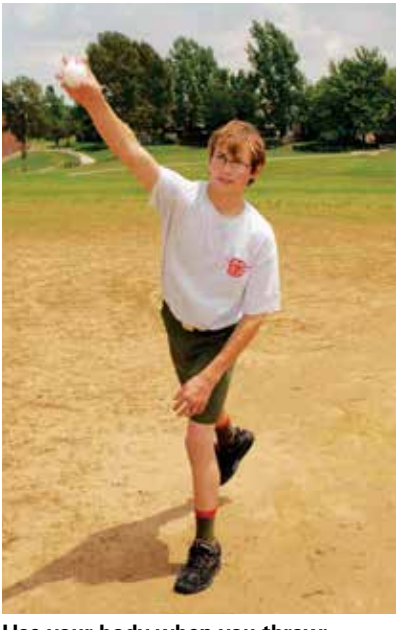
Regular push-up

Before you start to throw, warm up your arm gradually by throwing your baseball at slow speed to someone at a close distance.

Baseball Throw

Remember to warm up and stretch before you begin. Start with a few short and easy throws, then gradually build up distance and speed during your workouts. It is especially important to work closely with your coach on your form. Stand with your body sideways, in line with your target. Hold the baseball using your first two fingers and thumb, not the palm of your hand. Usually, the first two fingers go across the seams (where they are close together) with the thumb underneath. When throwing, cock your wrist as your arm goes back. Reach back as far as you are comfortable, and release the ball as your arm goes forward. Throw the ball "over the top," not sideways.

For the accuracy test, see how many times in 10 throws you can directly strike a target from a predetermined distance. To practice for distance throws, ask a friend to spot the ball when it first touches the ground. Track your progress.



Use your body when you throw: shift your weight to your back foot as you wind up and then transfer your weight to your front foot as you release the ball. Allow your throwing arm to follow through.

To make a quick target, use an old pillow that is about 15 by 24 inches in size. Draw or paint a strike zone on the pillow. Then, strap the pillow about 2 feet high on a wire backstop, fence, or other stable fixture in a clear area.

The distance requirement for the baseball throw is based on age: ages 11 to 12, 20 feet; ages 13 to 15, 30 feet; and ages 16 to 17, 40 feet.

Basketball

As you practice basketball drills, remember to warm up before you begin, and then cool down following your workouts. Use the diagram of the basketball court to plan your practice shots. Track your progress.

Basic tips for dribbling:

- Keep your head up.
- Push down on the ball with your fingers.
- Keep your dribbling elbow close to your body.

For shooting layups:

- When dribbling to the basket from the right side, shoot with your right hand as your right leg goes up, while pushing off on your left leg.
- When approaching from the left side, shoot with your left hand as your left leg goes up, while pushing off with your right leg.

Proper layup form

For shooting:

- Keep your elbow in and your fingertips on the basketball. Spread your feet about shoulder width, and bend your knees slightly. Look at a spot just over the front of the rim.
- Before you shoot, relax by exhaling.
- Shoot with one hand and use the other as a guide. Spread your fingers comfortably. Dribble a couple of times, and then cock the ball to your chest or wherever it feels good to shoot.
- Point your forearm toward the basket as you cock your wrist, and position the ball as if you are carrying a tray.
- As you shoot, move your arm up and forward, keeping your shoulders square to the basket.
- Shoot the ball off your fingertips, and follow through by extending your arm and hand toward the basket.

Preparing to shoot the ball

Remember to follow through.

Kicking a Football or Soccer Ball

Many football kickers use a soccer-style technique, so you can use these basic techniques to kick either ball. Warm up before you start, and practice your kicking technique without the ball first. Track your progress.

For **football,** you must determine how many steps to take before you kick the ball. One technique is to face the ball and take three normal steps back from the ball and two steps to the left, if you are right-footed (to the right, if you are left-footed). The ball should be slightly tipped back and the laces should be facing your target. You may have to experiment with tilting the ball right or left before you are comfortable kicking goals. Slightly bend your supporting leg as you kick. Keep your head up but lower your eyes to watch the ball. The follow-through should be long and smooth. Track your progress in accuracy and distance.

In **soccer,** the technique is the same as for football. Approach the ball with smooth, controlled steps, and kick the ball about 2 inches below the widest part of the ball, or about a third of the way up from the bottom of the ball, with the shoe-laced part of your foot, not your toe. The largest bone in your foot is underneath your shoelaces; this is where you want to make contact with the ball. Watch this spot until after you have kicked the ball. Keep your shoulders square to your target as you swing your kicking leg through the ball, letting your other leg support you. Follow through toward the target. Track your progress for accuracy and distance.

Weight Training

Weight training, a form of strength training, has many benefits. In addition to increasing your strength and improving your muscle tone, weight-bearing activities will help you lose fat, improve your bone density and resistance to injury, strengthen your heart, and increase your coordination. If you are new to weight training, weight machines are more practical for your workout than training with free weights because the machines can be adjusted to fit you and many do not require a spotter.

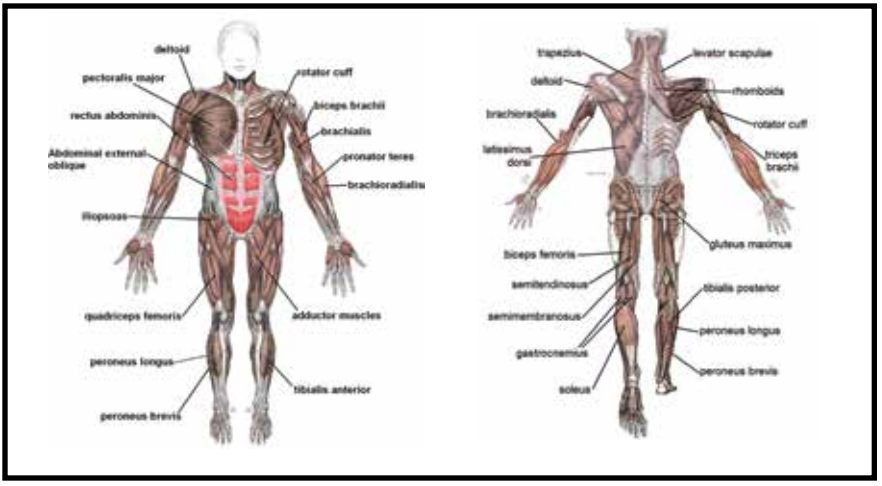
Free weights—dumbbells, weight plates, and barbells—are used for physical conditioning and competitive weightlifting. Each piece of equipment is of a specific weight. These weights are "free" because they do not restrict joint movement. Because of this freedom of movement, you can use the weights for many different exercises, but you can also suffer more injuries than with weight machines if you do not use correct loading, lifting, and spotting techniques.

Try not to schedule two hard workout days in a row. You might even plan two easy days between your hard days. Rest and recovery are important factors in your improvement.

You are still growing, so it is important to start weight training slowly. Your counselor or trainer may recommend that you begin with body-weight exercises such as pull-ups and push-ups.

Whenever you participate in weight training activities, it is important to do so only under the supervision and guidance of a knowledgeable trainer. Only after you have trained and feel comfortable with your current workout should you think about increasing the weight load. With your trainer's guidance, you can determine how much that increase should be—normally about five percent for young athletes.

Weight training routines are built around **repetitions** and **sets.** A repetition is a series of a single exercise. A set is a group of repetitions of that exercise. For example, to meet weight training requirement 5(a), you must complete two sets of 15 repetitions for the chest/bench press. This means you must do the chest/bench press 15 times in a row to complete one set, rest, and then do the chest/bench press another 15 times in a row to complete your second set.



A basic weight training program should include exercises for the shoulders, chest, arms, abdomen, back, and legs. Talk to your coach and your trainer to determine which exercises best suit the activities you have chosen to participate in for a season.

The **chest/bench press** increases upper-body strength by working all muscles in the chest. Weight machines will vary, but the technique is basically the same.

Step 1—Lie with your head, shoulders, back, and bottom on the bench. Be sure your head is at least 2 inches from the stack of weights. Position your feet firmly on the floor.

Step 2—Bring your arms in front of you, but do not lock your elbows. With your hands about shoulder width apart, grip the handles. Lower the handles to your chest.

Step 3—Exhale as you push the handles up to full elbow extension. Hold the weight momentarily.

Step 4—Pull handles down, inhaling as you return to the starting position.

Pause for a moment before starting the next repetition.

Weight training requires constant supervision by a qualified trainer who is knowledgeable in this activity's techniques and training.

The **leg curl** strengthens your hamstrings, the muscles on the backs of your thighs. Again, leg curl machines will vary, but the technique is basically the same.

Step 1—Lie facedown on the bench. (If the bench you are using does not have a slight angle, put a towel under your hips.) Grip the handles, keeping your elbows tucked against the bench. Position the backs of your ankles against the roller pads.

Step 2—Slowly bend your knees and raise your feet, keeping your hips planted against the bench.

Step 3—When you reach the top, hold that position momentarily.

Step 4— Slowly lower your feet to the starting position. Pause for a moment before starting the next repetition.

Because weight training is so important for developing groups of muscles required for specific sports and for conditioning your body for general health, more weight machine exercises are included here to help you develop a personal weight training program.

The **leg extension** develops the quadriceps, which are the muscles on the front of your thighs.

Step 1—Sit in a leg extension machine and position the tops of your feet under the roller pads. Grip the handrails.

Step 2—Use your thighs to slowly lift your lower legs.

Step 3—Hold the position while your quadriceps contract.

Step 4—Slowly lower your legs to the starting position.

Weight training is most beneficial when paired with aerobic exercise, for example, running, swimming, or cycling.

The **leg press** develops the quadriceps as well as the hamstrings and gluteal muscles in your buttocks.

Step 1—Sit in a leg press machine, with your back against the seat, legs bent at a 90-degree (or less) angle, feet about shoulder-width apart and flat on the weight sled (pedal surface). Hold on to the handrails, keeping your arms straight.

Step 2—Unlock the weight sled and bend your knees, slowly lowering the weight.

Step 3—Push the weight back up by extending your legs to a straight position. Exhale as you push.

Step 4—Slowly return your legs to the starting position, with your knees flexed at 90 degrees. Inhale as you bend your knees.

The **pec-deck flye** is another exercise that works the chest muscles.

Step 1—Sit on the machine with your back against the seat pad. Grasp the handles, keeping your upper arms parallel to the floor and your elbows with a slight bend in them. Your forearms should remain in contact with the pads at all times.

Step 2—Flex your chest while bringing the handles together in a smooth, steady motion.

Step 3—When the pads almost touch, hold the position for a second.

Step 4—Slowly reverse the movement to the starting position.

The **pull-down to front** works upper back and shoulder muscles.

Step 1—Sit in the lat machine seat with your feet flat on the floor. Grasp the bar with a wide overhand grip. Puff up your chest, arch your back, and lean slightly backward.

Step 2—Using your back muscles, pull the bar toward the top of your chest, moving your arms only.

Step 3—Pull your elbows down and back as far as possible until the bar touches your chest.

Step 4—Squeeze your shoulder blades together for one second before slowly returning to the starting position.

The **seated row** exercise develops upper back muscles.

Step 1—Sit down at the rowing station and bend your knees slightly. Keep your upper body erect. Securely grip the rowing handles.

Step 2—Pull the handle slowly and smoothly to your chest. Keep your upper body rigid and knees flexed. Exhale as the handle nears your chest.

Step 3—Return to the starting position, inhaling as you complete the movement.

The **low pulley biceps curl** develops the biceps, which are muscles in the front of the upper arm.

Step 1—With your body erect and knees slightly bent, grasp the bar with an underhand grip. Keep your head up, looking forward. Extend your elbows fully and let the bar rest on your thighs.

Step 2—Pull the bar up to shoulder level without moving your upper arms. Exhale as the bar comes to your shoulders.

Step 3—Hold the position for a second.

Step 4—Slowly lower the bar to the starting position, keeping your head up and inhaling during the downward movement. Fully extend your elbows before starting the next repetition.

The **triceps pulley press-down** works the triceps, which are muscles in the back of the upper arm.

Step 1—Stand about a foot away from a lat bar, then grasp the bar with an overhand grip—hands no more than 6 inches apart. Squeeze upper arms against sides, flex your knees, and hold the bar chest-high.

Step 2—Without moving your upper arms, press the bar down until it touches your thighs and your arms are fully extended. Exhale during the downward movement.

Step 3—Hold the position for a second.

Step 4—Inhale while slowly returning bar to the starting position.

Weight Training Tips

- Check with your doctor and a knowledgeable weight training coach to set up the right training program for you. Start out slowly and set realistic goals. Weight machines (rather than free weights and barbells) are usually safest for weightlifters without previous experience.
- Wear the proper clothing and shoes. Your clothing should allow you free range of movement so that you can use proper weight training techniques. Tank tops or loose T-shirts and comfortable training pants, shorts, or sweatpants work well. Wear comfortable shoes that give you sure footing, the ankle support you need, and adequate cushioning, and that allow you to feel the floor beneath your feet.
- Always warm up before you work out. Take a brisk walk or easy jog, jump rope, or pedal a stationary bicycle for 10 minutes or so. Then, continue your warm-up by lifting weights for one set, but at a very low effort level.
- Focus on correct technique, including breathing.
- Moderate the speed and control the movement of your repetitions. Avoid quick, jerky movements, and never rush.
- To prevent injury, gradually increase your workouts by adding more repetitions instead of adding more weight.
- When increasing your weight load, do so in small increments—from 1 to 3 pounds.
- Listen to your body. If something does not feel right, stop immediately. Get your health care provider's approval before resuming your training program.
- Limit your weight training sessions to about 30 minutes, and remember to take a break and give your body a rest. Train only two or three nonconsecutive (never back-to-back) days per week, maximum.
- After every workout, cool down.

Eventually you will want to fine-tune your weight training program by changing your routine and mixing in free weight exercises and calisthenics such as crunches, sit-ups, leg raises, and flutter kicks. Alternate your weight training workouts with your activity drills and practice sessions. Vary your routine from time to time so you can maintain your discipline and have fun.

Athletics for the Fun of It

People who compete in athletic events do so as amateurs or professionals. If you want to participate in an athletic activity while in high school or college, you must be an amateur—someone who engages in the sport as a pastime rather than as a profession. Basically, an amateur does not receive money or any other type of tangible reward for participating in athletics. An amateur plays strictly for the love of the sport.

Professional athletes also love playing, but they receive some type of payment or compensation for participating in the sport.

High school rules usually differ from state to state, but the governing bodies of most high schools limit the type and value of an award a student can receive when participating in athletics. So, if you plan to compete in an athletic event apart from a school activity, check with officials about school and state rules. By accepting an inappropriate award, you could be deemed ineligible to participate in your school's athletics.

Colleges and universities consider an athlete a professional and therefore ineligible to compete if he or she receives payment for participating in a particular sport; accepts a promise of payment for participation; signs a contract or written agreement to participate in a professional sport; accepts financial assistance from a professional sports organization to play a sport; knowingly competes on a professional sports team; or enters into an agreement with a sports agent.

However, a college student who was deemed a professional in one sport but who no longer competes as a professional may participate in a different sport at the school as an amateur (if all requirements for that sport are met).

Athletes who want to maintain their amateur status should uphold high standards. An amateur should have a high sense of honor and fair play, and should be courteous to opponents, officials, and spectators.

The Olympic Games once featured the world's best amateurs. When the modern Games began in 1896, only amateurs were allowed to compete. However, the rules changed in 1986 and professionals competed for the first time at the 1988 Olympic Games. Each Olympic sports group now has the authority to determine whether professionals can compete in its particular event. This rule allows some of the world's best athletes, many of whom have turned professional, to compete in the Olympics.

Sportsmanship and You

When participating in athletics, you should practice good sportsmanship. This includes treating opponents, teammates, coaches, officials, and spectators with respect. Athletes should shake hands and congratulate opponents after participating in an event, whether or not they have won. Good sportsmanship includes acknowledging great performances by others, and accepting what might be a poor decision made by an official. It is not always easy to be a good sport, but good sportsmanship shows, among other traits, a person's maturity.

Everyone involved in an athletic activity—participants, coaches, and parents—should demonstrate good sportsmanship. When young athletes see their mentors behaving as good sports, then they will understand that winners in sports and in life act with dignity in good *and* bad times. Athletes who practice good sportsmanship will gain the respect and appreciation of people in all aspects of their lives.

There is more to participating in an athletic activity than winning. Learning how to be a good sport, how to play with the proper form, technique, and strategy, and how to be a team player give amateur athletes a sense of pride in their accomplishments and a feeling of fun that outlasts any winning score.

Planning and Organizing a Meet or Field Day

When you attend a sports meet or participate in a field day, you might not realize how much work and organization is involved. It takes many people to assure that a meet runs smoothly.

Not all meets will require officials in every position listed below. The main thing is to have enough officials for the size of the event. Plan the events you intend to hold and then determine which and how many competition officials should be involved with each event. Total the number of competition officials and add in management officials and event management personnel. For a basic meet or field day like the one you must plan for requirement 6(a), you will not have to fill many of the positions, such as photo finish judge or technical manager.

When arriving at a track and field meet, track competitors should report to the clerk of the course; field competitors should report to the chief field judge of their respective events.

The first step is organizing a staff of people to work at the event. Here are some of the officials—and their duties—at track and field events:

Meet Director. This person oversees the event and helps ensure that everything is running smoothly, that all equipment is available and ready, and that other officials and contestants are following instructions.

Competition Director. This person checks that all officials have reported for duty and appoints substitutes when necessary. The competition director has the authority to remove any official. This person should arrange the event so that only authorized persons are allowed in the competition area.

Lap Scorers. These officials keep a record of the laps covered by each competitor in races that have multiple laps. For races of 3 miles and longer (3,000 meters and longer in indoor races), lap scorers also record each participant's time for each lap (as given to them by an official timer).

Clerks of the Course. These officials help maintain the entry list for the different events and alert the competitors when to be ready.

Referees. The referees should have a thorough knowledge of the rules of each event. They resolve any disputes in connection with the events.

Starter. The starter has complete control of starting all events.

Finish Judges. If a camera device is not used to record the finish, the finish judges will determine the order of finishers. It is recommended that there be at least four judges, and normally one more judge than there are lanes used. When possible, judges should be placed on the same side of the track, in line with the finish, and on an elevated platform.

Field Judges. The field judges measure and record the performances of the competitors in the field events and determine if a competitor has committed a foul.

Technical Manager. The technical manager is responsible for ensuring that the track and field areas and all equipment comply with the rules.

Timers. Whether the timing is done with electronic timers or stopwatches, timers should be experienced, focused, and alert. When fully automatic photo finish equipment is used, timers act as a backup. A certified official should be designated as the chief timer. That person should make note of the records (school, state, national, etc.) for the events to be timed, so an immediate check can be made to see if there are record-setting performances. In the event of a record performance, this person inspects the watches of the timers and certifies on the official record application form the times recorded by the timers. Three official timers and one or two alternate timers should be used.

If a camera device is used to record the event's finish, the image must be shown to the photo finish judges, who will determine the order of finishers.

Competition Secretary. The competition secretary prepares all competitor lists, start lists, and worksheets for use by other officials. This person collects the results of each event and, as soon as possible, gives them to the meet director. The competition secretary oversees the scoring of team competition, combined events, and handicap races.

Marshal. The marshal has full control of the course or competition area and prevents anyone but officials and competitors from entering or remaining in the area. This person has a team of assistants and assigns them their respective duties.

Preparations for a Meet

The event itself needs a lot of planning to ensure its success. For a simple field day or meet, you might need only a large grassy field at a local park. Depending on the types of competitions you are planning, consider the following:

1. Determine the date and hour of the meet. Try not to conflict with other similar events.
2. Try to select a site that is centrally located for contestants and has good facilities and accommodations. Good facilities are important for attracting competitors and spectators. If necessary, secure the proper permissions and permits for the event. Your counselor can help you with this.
3. Publicity is important to create interest in and attendance at your event. Post information in school newsletters, community newspapers, and, if available, track and field newsletters or magazines. Place posters (with permission) at appropriate sites, such as schools, recreation centers, and so on.

All sports are governed by rules. The average Scout will not have the opportunity to officiate at large games or events, but could serve as an official in connection with an intertroop track and field meet or sport competition.

4. Plan events based on the participants you want to attract. Are you preparing a field day or track and field events for teenagers of one gender, or a coed swim meet? Classify competitors by weight, age, or other suitable criteria. Plan specific events for each class to attract more competitors and to be fair.
5. List the events and classifications on the entry forms and distribute them several weeks in advance so that potential participants can plan to attend.
6. Secure awards and prizes well in advance of the event. These could include medals, buttons, or small trophies for individuals or teams.
7. Set up the grounds at least one day before the event. For track meets, measure the track with a steel tape and mark off the various distances, unless the track already has the markings and has been officially measured. Prepare the landing pits and runways for the jumping events according to the requirements of USA Track and Field. Provide the starter's pistol and cartridges, jumping standards and sticks, measuring tapes, scoreboard and public address system, and other necessities. Check stopwatches for accuracy.

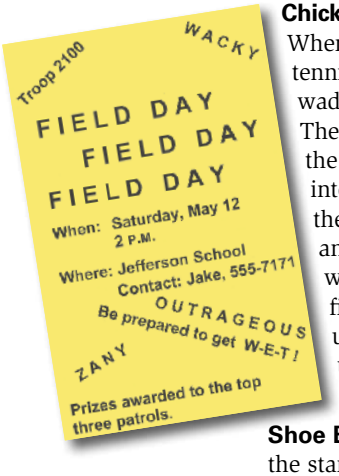
Activities for Fun and Fitness

Here are some fun activities you might want to consider for the meet or field day you are planning.

Team Water Volleyball. This is a modified volleyball game. Instead of using a ball, teams will use a water-filled balloon. Each team has a large towel or sheet and, with cooperative effort, tries to catch the water balloon in the sheet and throw it back over the net. This is a great activity on a hot day.

Balloon Race. You will need a chair for each team and balloons for each teammate. The first person on each team runs to the chair, sits on the balloon until it pops, then runs back to tag the next teammate. The first team to pop all its balloons wins.

Obstacle Course. Create an obstacle course with available resources. The course might involve running around cones; crawling through tunnels or large boxes; running through a series of hoops (or making one step in each); and jumping or climbing over sawhorses or outstretched jump ropes.



Chicken Relay. Provide each team member with a tennis ball. When the relay begins, the first person on each team puts the tennis ball (like a chicken egg) between his or her knees and waddles to a box that has been set up a fixed distance away. The participant must get close enough to the box so that the ball can be released into the box (like dropping an egg into a nest). The participant runs back to the team and tags the next person in line, who then picks up the next "egg" and waddles off to deposit it in the "nest." The relay ends when the last person returns to the team. The first team to finish is the winning team. (One ball per team could be used instead of one ball per person. After teammates lay their "eggs," they could pick up an egg from the box and carry it back to the next teammate in line.)

Shoe Box Slide. Provide each team with two shoe boxes. At the start of the race, the first member of each team puts one foot into each shoe box, slides his or her way around a cone set up at a fixed distance, and then slides back to the team. When that person returns, he or she jumps out of the shoe boxes and the second teammate puts them on. The relay continues until the last person returns to his or her team. The first team to finish is the winner.

In tug-of-war, participants cannot wrap the rope around their hands or bodies, and there should not be any knots in the rope.

Tug-of-War. You will need a rope, preferably about 100 feet long. Assign as many people to each side as you want, but be sure the teams are balanced in number and approximate weight. Determine the center of the rope and wrap tape around it. Then from the middle, measure 6 feet on each side and wrap tape at each point. Find a field or yard that is as level as possible and mark a spot where the center of the rope will be placed. Members of each team hold their end of the rope, but the person closest to the center should be behind the tape that is 6 feet from the center. When a starter gives the "go" command, both sides tug on the rope until one team has pulled the rope so that the tape 6 feet from the center has crossed the field's center spot. The winning team is the one that wins two tugs. The teams switch sides after the first pull. If there is a tie after two pulls, flip a coin to determine which team selects the side it wants for the third and deciding pull.

Three-Legged Race. Use burlap (potato sacks) or similar bags. Two-person teams compete. Each member of a team slips one leg (one team member's right leg and the other team member's left leg) into a bag. The bag is then tied or cinched at the top so that the legs are "connected." The team members can hold each other around the waist to help maintain balance. The object of the game is for each team to line up and "run" to a finish line as they try coordinating their leg movements. The course can vary in length, but should be at least 30 yards. The first team across the finish line wins. If there are a large number of teams, the teams could be divided evenly and races could be run in heats. Winners of each heat could then face off for the championship.

Team Balloon Race. This is similar to the three-legged race but does not require a sack. You will need large water-filled balloons and a field of about 30 yards. Two-person teams compete. Each team holds a balloon between their heads as they stand side-by-side. They try to keep the balloon between their heads as they run to the finish line. The teams start at the same time and the first team across the finish line with the balloon between their heads is the winner. If a balloon is dropped but doesn't burst, it can be picked up and placed between the heads again and the team can resume running.

Flying Disc Basketball. You will need a plastic flying disc and two garbage pails or something similar to use as basketball hoops. The "court" can be indoors or outdoors. Place one garbage pail at one end of the court and the second at the other end. Mark off a 20-foot area around each pail. Place the "hoops" in front of a wall or other structure at each end so that a throw can be rebounded into the basket. The disc must be thrown into the garbage pail from at least 20 feet to be scored as a basket. Each team consists of about five players. The team that wins a coin toss begins the game by throwing the flying disc to a teammate from its end of the court. Rather than dribbling and passing the ball to teammates as in regular basketball, players can run and pass the flying disc to teammates. The defending team members try to intercept the disc. The first team to score 10 baskets wins.

First Aid and Managing Injuries

Take responsibility and precautions for minimizing risk and avoiding injury by following the information in the "Ready, Set, Go" chapter.

Like anyone else, athletes can get injured or sustain an illness (such as a heat-related sickness). Proper training and conditioning will help keep you healthy. However, you should know what to do in the event of common injuries or illnesses.

As a young athlete, to help prevent or reduce the chance of injuries, you should try to match your physique with your desired activity. For example, a young athlete with a lean physique might become involved in track, cross-country, or swimming. Muscular athletes might consider basketball, football, or soccer. In weightlifting competitions, for example, athletes compete against others in their own weight class.

Common Sports Injuries

If you are injured, you should not try to play through the pain. Ignoring an injury could aggravate it. Treat injuries until they are healed before you continue participating or training. Young athletes should be especially careful with injuries because their bodies are still growing. A neglected or mistreated injury could cause permanent damage.

Among the common types of injuries and illnesses you could see or sustain yourself when participating in athletics are sprains, strains, contusions (bruises), abrasions, blisters, heat reactions, and concussions. In hot or cold weather, if you don't stay properly hydrated, you also might suffer from dehydration.

Some noncontact athletic activities may keep you safer from injury than others. Among these are cross-country running, track, swimming, golf, and tennis. Yet, injuries can occur in any of these pursuits as well. Proper training and conditioning prevent or reduce the chance of injury.

Growing youths are especially vulnerable to injuries in the knees, elbows, back, shoulders, and hip areas.

A **sprain** is caused by a twisting, wrenching, or lifting movement that tears or stretches tissues surrounding a joint. This can happen when you are walking, running, or jumping, especially on an uneven surface. You will feel sudden pain.

The area will feel tender to the touch and painful when moved, so try to keep still. You may experience some swelling and discoloration.

Elevate the sprained or strained area and apply a cold compress for 15 to 20 minutes. If you have persistent or severe pain, seek medical attention.

A **strain,** or pulled muscle, is an injury to a muscle or tendon caused by overstretching, overexertion, heavy lifting, sudden movement, or a twisting or wrenching action that might happen when you are weightlifting or playing basketball. A strain may cause you to feel immediate, intense pain. However, you might not feel pain until hours after the injury has occurred. There may be tenderness, swelling, and some discoloration or bruising. Moving the injured area will be difficult and painful.

To help reduce the pain and swelling, apply an ice pack to the injured area. To limit mobility, minimize swelling, and to protect the spot, wrap the area firmly with an elastic bandage (but not so tightly that circulation is restricted). Rest, and keep the injured area elevated. After 24 hours, you may use a heating pad or hot pack for treatment. If you have persistent or severe pain, seek medical attention.

Contusions, or bruises, are black-and-blue marks caused by blood leaking into skin tissues. The skin is not broken but is discolored. Bruises usually are not serious, but they can be, especially if there are possible fractures or unseen injuries to internal organs.

Most bruises can be easily treated. Keep a cold, wet towel over the bruise for 30 to 60 minutes, and rest the injured area. This will prevent more blood from leaking into the tissues. To help the bruise fade, apply a warm, wet cloth to the area the next day.

For serious contusions, seek immediate medical attention.

Abrasions, or scrapes, are caused when skin is rubbed or scraped off. Abrasions often happen when the skin is scraped against a hard, unyielding surface such as a basketball court or running track. The greatest danger with these injuries lies in contamination and possible infection.

See your health care provider if your tetanus immunization is not up-to-date.

Treat an abrasion as you would a minor cut. Wash the area with mild soap and water. Allow the wound to dry, then cover it with a dry, sterile dressing. If fluid oozes from an abrasion, gently dab on an antiseptic solution.

Blisters are usually caused by continual rubbing against the skin. This friction will cause a hot spot, which signals the beginning of a blister. Blisters on the feet are the most common and troublesome type. So, be sure that you wear properly fitting shoes and appropriate socks. If you feel a hot spot developing, stop immediately and protect the tender area. If a blister has already formed, protect it from breaking by adding layers of moleskin.

If a blister must be drained, first wash the foot or other affected area with mild soap and water. Dry the foot, and apply an antiseptic solution. Prick the edge of the blister with a needle that has been sterilized in a flame. Gently press out the fluid. Reapply antiseptic; cover with a sterile dressing to protect the area from contamination and further irritation. If a blister has already broken, treat it like an abrasion.

For blisters, watch for signs of infection—including tenderness, throbbing, swelling, pus, redness, a red streak leading from the blister, swollen glands, and fever. If one or more of these signs develop, seek medical attention.

Heat reactions include heat exhaustion and heatstroke—illnesses that can occur when the body becomes overheated. Heat exhaustion is quite common and less serious than heatstroke. However, it is still a serious condition.

A frightened or anxious victim might breathe too heavily or too deeply, which can result in hyperventilation. Calmly encourage the person to relax and breathe slowly.

Heat exhaustion occurs when the body becomes overheated and cannot sufficiently cool itself. The person will have a body temperature above 98.6 but below 102 degrees, pale and clammy skin, heavy sweating, dizziness and fainting, pronounced weakness, nausea and tiredness, headache, and muscle cramps.

Have the person lie down in a shady, cool spot with feet raised. Loosen clothing and cool him or her with cool, wet cloths or a fan. Have the person sip water. Recovery should be rapid, but if symptoms persist, seek medical attention.

Stay Hydrated

Dehydration, caused by a lack of water in the body, can occur in cold weather as well as hot weather. The first signs will usually be dark-colored urine, thirst, dry lips, and a slightly dry mouth. Signs of moderate dehydration include a very dry mouth, sunken eyes, and pale skin. Signs of progressed dehydration include fatigue, headache, body aches, a rapid but weak pulse, rapid and short breathing, cold hands and feet, and confusion. Left untreated, severe dehydration can lead to shock and death.

If you are mildly dehydrated, drink plenty of water. See a health care provider if you are moderately dehydrated. Severe dehydration requires immediate medical attention and hospitalization because you must be pumped with intravenous fluids right away.

In hot or cold weather, drink plenty of water to avoid dehydration. Don't wait until you feel thirsty—that is an indication that you are already becoming mildly dehydrated.

Heatstroke, sometimes called sunstroke, is very serious. It occurs when extremely high temperatures overwhelm the body's cooling mechanisms, which become so overworked that they simply stop working. As a result, the person's temperature shoots upward and becomes life-threatening. The victim will have a temperature of 102 degrees or higher (usually higher than 105 degrees); red, hot, and dry skin; and an extremely rapid pulse. Other signs include confusion or disorientation, fainting or unconsciousness, and convulsions.

Move the person to a shaded spot, face up with head and shoulders raised. Remove the victim's outer clothing and sponge the bare skin with cold water. You should also soak the underclothing with cool water; drape the bare skin with wet cloths; apply cold packs; use a fan or air-conditioning; and, if possible, place the victim in a tub of cool (not ice-cold) water. Use combinations of all available treatments. Once the body temperature drops to a safe level (101 degrees), dry the skin. When the victim is able to drink, provide all the water that is wanted. Treat for shock and obtain medical help immediately.

More information about treating injuries and heat-related illnesses can be found in the *First Aid* merit badge pamphlet.

Beat the Heat

Wear appropriate clothing to help keep cool when training or competing in the heat, including light-colored clothing and a hat. Acclimate to the heat by training for short periods of time to begin with and gradually increasing the time each day. Avoid participating in an athletic endeavor in high temperature and high humidity. Try to plan your strenuous activities for the cooler hours in the morning or evening. Drink plenty of water and sports drinks. Sports drinks help replenish nutrients—such as salt—that are lost when sweating. However, most sports drinks are also high in sugar, so you should drink an equal amount of water. If you have a 12-ounce sports drink, be sure to carry 12 ounces of water and alternate between them.

Careful With Concussions

A **concussion** is a brain injury caused by a blow to the head or a sudden change in motion to the head, in which the brain bounces back and forth inside the skull. A person does not need to be knocked out to have a concussion. Some symptoms of a concussion are: difficulty to think clearly, difficulty concentrating, headache, dazed appearance, behavior or personality change, lack of balance, disorientation, slurred speech, nausea, sensitivity to light or noise, and sleepiness. Symptoms may occur right away or take some time to develop. Someone with a suspected concussion should be assessed promptly by a medical professional, and monitored regularly while recovering. The primary treatment for a concussion is brain rest.

Athletics Resources

Scouting Literature

Deck of First Aid; Emergency First Aid pocket guide; *Backpacking, Canoeing, Climbing, Cooking, Cycling, First Aid, Fishing, Fly-Fishing, Golf, Hiking, Horsemanship, Kayaking, Personal Fitness, Rowing, Skating, Small-Boat Sailing, Snow Sports, Sports, Swimming, Water Sports,* and *Whitewater* merit badge pamphlets.

With your parent or guardian's permission, visit Scouting America's official retail site, **scoutshop.org**, for a complete list of merit badge pamphlets and other helpful Scouting materials and supplies.

Books

American College of Sports Medicine. *ACSM Fitness Book*, 3rd ed. Human Kinetics Publishers, 2003.

American Red Cross. *First Aid/CPR/AED Participant's Manual,* 2nd ed. American Red Cross, 2016.

Bompa, Tudor, and Carrera, Michael. *Conditioning Young Athletes.* Human Kinetics Publishers, 2015.

Carr, Gerry. *Fundamentals of Track and Field,* 2nd ed. Human Kinetics Publishers, 1999.

Dawes, Jay. *Developing Agility and Quickness,* 2nd ed. Human Kinetics Publishers, 2019.

Dintiman, George Blough. *Speed Improvement for Young Athletes: How to Sprint Faster in Your Sport in 30 Workouts,* 2nd ed. National Association of Speed and Explosion, 2006.

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Fortin, Francois, ed. *Sports: The Complete Visual Reference.* Firefly Books Ltd., 2003.

Greene, Larry, and Pate, Russ. *Training for Young Distance Runners,* 3rd ed. Human Kinetics Publishers, 2014.

Jackson, Colin. *Young Track and Field Athlete.* Dorling Kindersley Publishing, 1996.

Organizations and Websites

Amateur Athletic Union
National Headquarters
P.O. Box 22409
Lake Buena Vista, FL 32830
Telephone: 407-934-7200
aausports.org

American Academy of Physical Medicine and Rehabilitation
9700 W. Bryn Mawr Ave., Suite 200
Rosemont, IL 60018
Telephone: 847-737-6000
aapmr.org

American College of Sports Medicine
401 W. Michigan St.
Indianapolis, IN 46202
Telephone: 317-637-9200
acsm.org

Mayo Clinic
200 First St. SW
Rochester, MN 55905
Telephone: 507-284-2511
mayoclinic.com

National Strength and Conditioning Association
1885 Bob Johnson Drive
Colorado Springs, CO 80906
Toll-free telephone: 800-815-6826
nsca.com

President's Council on Sports, Fitness & Nutrition
1101 Wootton Parkway, Suite 560
Rockville, MD 20852
Telephone: 240-276-9567
fitness.gov

SHAPE America (Society of Health and Physical Educators)
1900 Association Drive
Reston, VA 20191
Toll-free telephone: 800-213-7193
shapeamerica.org

USA Track & Field
132 E. Washington St., Suite 800
Indianapolis, IN 46204
Telephone: 317-261-0500
usatf.org

U.S. Olympic Training Center
National Headquarters
One Olympic Plaza
Colorado Springs, CO 80909
Telephone: 719-632-5551
teamusa.org

Youth Sports Safety Alliance
Telephone: 214-637-6282
youthsportssafetyalliance.org

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John McDearmon—page 4

Brian Payne—pages 8, 29, 32 *(baseball throw)*, 33–34 *(all)*, and 48–49