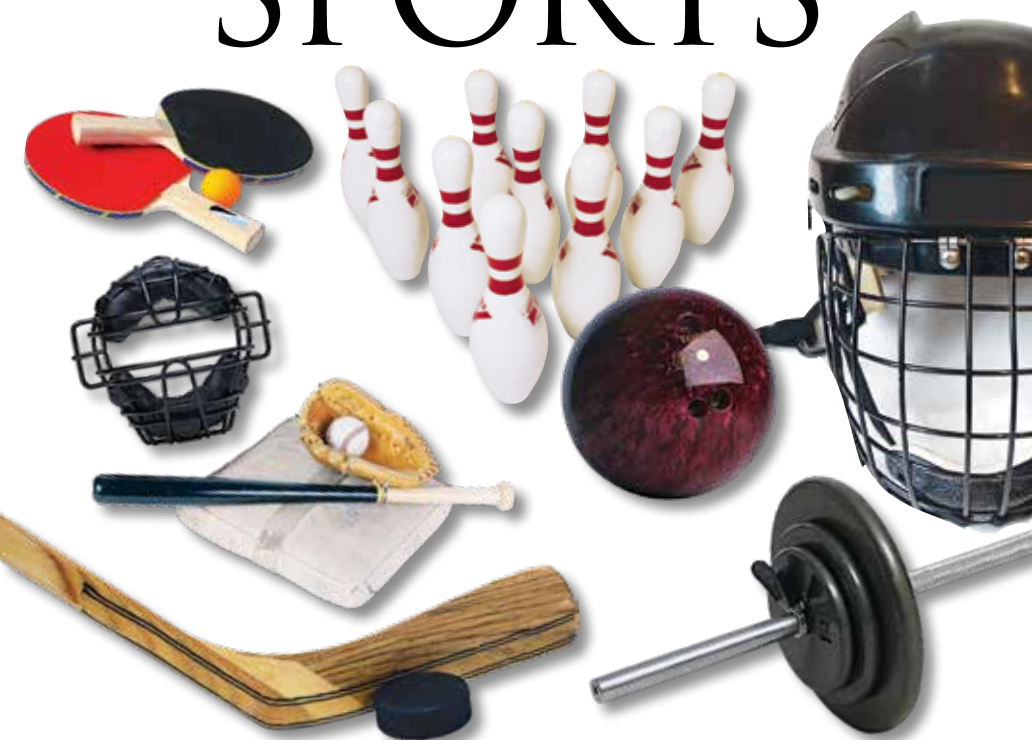


# MERIT BADGE SERIES



# SPORTS



BOY SCOUTS OF AMERICA®

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MERIT BADGE SERIES

# SPORTS



*"Enhancing our youths' competitive edge through merit badges"*



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# Requirements

*Scouts should go to [www.scouting.org/merit-badges/Sports](http://www.scouting.org/merit-badges/Sports) or check Scoutbook for the latest requirements.*





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# What Is a Sport?

Millions of people participate in sports every year. For some the appeal is the close friendships that come with being part of a team. Some revel in the joy of victory and lessons of defeat. For some, the personal fitness is so important that exercise becomes a daily need. And still others desire the feeling of achievement, that feeling of measurable improvement that comes with dedication to a sport. Regardless of the reasons you play, sports are a fun way to get the exercise your body needs.

Athletics becomes a sport when it is organized into a competition. Running through your neighborhood is athletics, great exercise. But running in a cross-country championship, competing against other runners with an official to enforce the rules, is a sport. Swimming to cool off for the afternoon is exercise. Swimming at an organized swim meet for your team, competing against another team, is a sport.







# Your Body—Your Engine

Think of your body as a race car preparing for the Indianapolis 500. Your training is similar to the fine tuning of the engine. Your medical examination is like checking the air pressure on the tires. Eating is adding the fuel needed for every speeding lap around the track. During the weeks before the big race, everything possible is done to prepare the car for top performance.

## Your Health Habits: The Key to Sport Success

Your body during training is a race car preparing for the big race. Healthy habits, including sleep and diet, can have a major impact on your strength, agility, and endurance. During training, your body is building stronger muscles and bone tissue, while being tested to the limit of endurance. Serious athletes cannot ignore the need to maintain healthy habits, such as eating well and getting enough sleep.



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How tall will you be? The human growth hormone is produced by the pituitary gland during sleep. When your body doesn't get enough sleep, it produces less growth hormone. To grow to your full height potential, you should sleep eight to 10 hours each night.

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An athlete needs a good night's sleep before practice and games for strength, endurance, mental focus, and quick reflexes. Have you ever stayed up late and felt physically and mentally sluggish the next morning? That sluggish feeling doesn't disappear when you step on the court or field—the problem intensifies. And what about the night after a practice, game, or even working out with weights? While you are sawing logs the night after exercise, your body is busy rebuilding itself, repairing and strengthening muscles, and growing—so don't cut sleep short!

### **First Step: The Physical**

Most middle schools and high schools require students to have an annual physical examination before they participate in a sports season. In the exam the physician will measure your heart rate, blood pressure, height, and weight; listen to your heart and lungs; and test your reflexes and vision. Your physician may also ask about your nutritional habits, physical activity, and family life.



**Your physician keeps records of your health history, growth, immunizations, and other information. Ask to see your physical growth percentiles chart.**

Explain to your physician the sports you plan to play. During the physical exam, the physician can then look for underlying conditions or symptoms that need treatment or correction before or during training. The physician may also advise you on nutrition and how to train safely. Once you have the physician's green light, you are ready for sports!

Make a list of questions for your physician before your appointment. For example, if you have a sore muscle, ask about it. Training may increase the pain. Ask about vitamins and nutrition. What injuries are common for your sport, and how can you prevent them? If you are attending BSA summer camp or participating in school sports, you may need to have the physician sign a physical form.

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Remember for your BSA popcorn sales that popcorn is a whole grain product. If you limit the salt and butter, popcorn is a healthy snack!

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## Feed Your Engine—A Healthy Diet

Eating a healthy diet is especially important when competing in sports. Your body burns food to produce energy and build muscles and bones. Better choices at the dinner table will increase your energy and improve your performance.

With all the advertising for low-carbohydrate foods, you may wonder if carbohydrates are bad for you. Your body needs carbohydrates for energy, but not all carbs are the same. Limit eating **simple carbohydrates**—foods with refined sugar and white flour, such as soft drinks, cookies, cakes, and doughnuts.



The food pyramid—considered by many to be confusing and hard to read—has been replaced by the “food plate” as the nutritional guide for Americans. “MyPlate” is designed to convey simple, key messages concerning diet:

- Enjoy food but eat less and avoid oversized portions.
- Make half your plate fruits and vegetables.
- Drink water instead of sugary drinks, and drink fat-free or low-fat (1 percent) milk.
- Make at least half your grains whole grains.
- Choose foods lower in sodium by comparing labels.



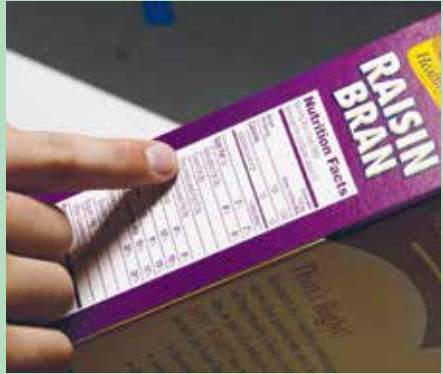
Desserts are not mentioned because they have little to no nutritional value.

Every person’s nutritional needs vary, based on age, health, and other factors. If you are 13 years old, 5 feet 5 inches tall, weigh 105 pounds, and exercise 30 to 60 minutes a day, the U.S. Department of Agriculture recommends the daily diet shown in the table and food plate.

To check your average daily needs, visit [www.choosemyplate.gov/resources/MyPlatePlan](http://www.choosemyplate.gov/resources/MyPlatePlan). (Get your parent’s permission first.)

Food Group	Daily Recommended Amount	Healthy Choice Tips
Grains	8 ounces (boy) 6 ounces (girl) A slice of bread is 1 ounce.	Substitute white bread with whole-wheat bread and brown rice or whole wheat pasta.
Vegetables	3 cups (boy) 2½ cups (girl)	Try prewashed baby carrots and grape tomatoes.
Fruits	2 cups	Keep a bowl of fresh fruit on the table for snacks.
Milk	3 cups	Drink a glass of fat-free or low-fat milk with your meals.
Protein	6½ ounces (boy) 5½ ounces (girl) A 4-ounce piece of meat fits on the palm of your hand.	Choose broiled, roasted, or grilled meat instead of fried.

What is in this? The large print on a food box can often be misleading. Read the list of ingredients to learn what is inside, before it is inside you! When looking for grains, find foods with the following ingredients listed first on the ingredient list: brown rice, oatmeal, whole-grain corn, whole oats, whole wheat, or wild rice.



Look for energy builders, **complex carbohydrates**, like whole grains, fruits, and vegetables. Make part of your pregame plan a big carbohydrate dinner the night before, and a good night's sleep.

Growing bodies also need extra **protein**. Protein helps build and repair damaged tissue. It also helps the body make antibodies to fight disease. For protein, eat foods like fish, poultry, pork, beef, eggs, beans, and nuts.

You may find it hard to believe, but fat is also important for energy and health. It helps the body use carbohydrates and insulates you in cold weather. Certain fats, however, are healthier than others. You should limit foods high in **saturated fats**, made of meat and dairy fats. These saturated fats increase cholesterol and the risk of heart disease. Most **unsaturated fats**, which are good for you, come from plant oils.

A third type of fat is **trans fat**. When vegetable oils are made into margarine or shortening, the resulting trans fats are difficult for the body to use. Trans fats are used to make french fries, doughnuts, crackers, and cookies. You will need to read the nutrition facts label on the food package to see if trans fats are in the food. The goal is to not consume any trans fats!

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A good rule of thumb is to eat plant oils instead of meat and dairy fats. Also, try to choose fats that, at room temperature, are in liquid rather than solid form.

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Fiber is another important ingredient in your diet. Fiber is sometimes called roughage because it cannot be digested but instead helps push food through the intestine.

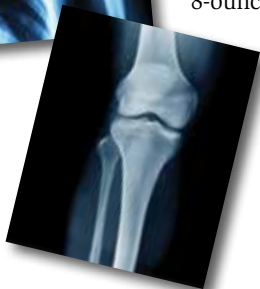
Keep your body hydrated by drinking at least eight to 10 glasses of **water** every day. Water helps you stay energized, deal with hot and cold temperatures, and digest food. By the time you feel thirsty, you're already dehydrated, which means your body doesn't have as much water as it needs and can't perform to its full potential. During training, practice and games take a water break every 20 minutes to drink 8 ounces of water. Water is the best choice, but you can drink fruit juices or sports drinks.

## Too Much Water?

Especially if you are an athlete who prefers distance training and events such as cycling, marathons, and duathlons, be aware of the condition called **hyponatremia**, or over-hydration. This condition, also called "water intoxication," occurs when the body's water and sodium (electrolyte) levels get off-balance. As you work out, your body loses fluids and electrolytes such as sodium and potassium. Whenever you exercise, be sure you not only drink plenty of fresh water throughout the day (instead of all at once), but also consume sports drinks to help replenish the electrolytes lost through sweating and physical activity. Be careful, though. Sports drinks often contain a lot of sugar—empty calories.

## Calcium

Broken bones can leave you on the sidelines for a whole season. Make sure you are getting four servings of **calcium** every day so your bones will grow and stay strong. An 8-ounce glass of milk is a serving. Without sufficient calcium, the insides of bones look like sponges with little holes throughout. Calcium is found in dairy products such as milk, cheese, and yogurt. Calcium is also in some surprising places like nuts, beans, and broccoli. Look for calcium-fortified orange juice, too!



## What's on Your Plate?

**Vegetables** may be raw or cooked, fresh, frozen, canned, or dried/dehydrated. They can also be whole, cut up, or mashed, and include dark green and leafy vegetables (broccoli, spinach, collard greens), red and orange vegetables (carrots, acorn squash, sweet red peppers), beans and peas (black-eyed peas, chickpeas, lentils, soybeans), starchy vegetables (green peas, potatoes), and many others (asparagus, cabbage, cauliflower, celery, eggplant, green beans, and zucchini, to name a few).



Any **fruit**—fresh, canned, frozen, dried, pureed, or 100 percent fruit juice—counts as part of the fruit group. You may be familiar with apples, bananas, berries, cherries, kiwi, mangoes, melons, nectarines, oranges, pears, pineapple, and tangerines.



A **grain** is any food made from barley, cornmeal, oats, rice, wheat, or another cereal grain. Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits are examples.

The **protein** food group includes those made from meat, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds. Beans and peas are also part of the vegetable group. Remember: Meat and poultry options should be lean or low fat.



The **dairy** food group includes milk and anything made from milk: cheese, cottage cheese, ice cream, puddings, sour cream, whipping cream, and yogurt.

**Oils** are fats that become liquid at room temperature, such as vegetable oils used in cooking. Solid fats come from animals and also can be made from vegetable oils—butter, lard, margarine, shortening. Sweets can be included in this group because they often contain high levels of fats and oils. To help maintain a healthy lifestyle, limit your consumption of fats and sweets.

### Healthful Tips

- A diet rich in fruits and vegetables may reduce risk for heart disease, certain types of cancers, obesity, and type 2 diabetes.
- Try eating seafood at least twice a week as the main protein food—especially those rich in omega-3 fatty acids, such as salmon and trout.
- Limit foods and drinks with “empty calories” that offer very little or no nutritional value. This includes cakes, cookies, donuts, candies, sodas and energy drinks, fruit drinks, pizza, hot dogs, bacon, sausage, and ice cream.



## Healthy for Life—Avoid Harmful Substances

To be a strong, healthy performer in sports and in life, avoid tobacco, alcohol, and other harmful substances.

**Tobacco** smoke interferes with proper lung growth and function. It coats the lungs with sticky tars and injures the airways and air sacs of the lungs. Athletes need their lungs working at peak capacity. Smoking makes you cough and wheeze. Using tobacco can leave you gasping for air when you need it most.

—————  
If you smoke,  
you choke.  
—————

Being tobacco-free gives you the stamina to play sports. As Clint Dempsey, professional soccer player and member of the U.S. men's national soccer team, puts it: "There is no way that if I smoked I'd be able to perform at even one-tenth of the level I need to. Even if I [weren't] a pro, and I [were] just kicking [the ball] with my friends in a men's league, smoking would take away from my game."

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, from the brain to the bladder. Scientists now know that smoking causes cancers of the mouth, the larynx (voice box), the lungs, and the kidneys. It can also cause a type of leukemia, which is 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.

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 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 hydrate the body during competition 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.

Steroids are sometimes called “performance-enhancing” drugs, but 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. Side effects range from acne, bloating, and rapid weight gain to weakened tendons, blood-clotting disorders, liver damage, and premature heart attacks and stroke.

Young people who take steroids may stop growing. The drugs prevent young bones from lengthening, so that a steroid user may fail to grow as tall as he or she should. In addition, the damage to a user’s health can be irreversible and may not show up for months, years—even decades—after the abuse ends.

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.

**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 do permanent harm to the body. 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.

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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.

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# Training

While important, weight training should be one element of a comprehensive workout regimen. Other aspects of conditioning, such as cardiovascular exercise and agility, are just as essential to health maintenance.

Look at the life of any Olympic athlete and you will find years of training to reach their level of play. Training includes warming up and stretching your muscles, weight training, and ending each session with a cooldown. Each of these steps is important—let's find out why.

## Warming Up

Imagine millions of little fibers bundled together, contracting and expanding every time you move—your muscles. A warm-up literally warms the muscles, ligaments, and tendons in your body. It also stretches your muscles and connecting tissues so they will be less likely to be strained or sprained. The first 10 to 15 minutes of every workout should begin with a warm-up. This is important not just on the big game day but also in the routine daily practice. The most important reason to warm up is to avoid injury, but it also prepares the body for physical exertion with:

- Increased flexibility
- Faster nerve impulses for faster reflexes
- More oxygen in your muscles
- Increased heart rate



## Muscle Buzzwords

Quadriceps—front of the thigh  
Hamstring—behind the thigh  
Bicep—front of the upper arm  
Tricep—behind the upper arm  
Calf—behind the lower leg

## Example Warm-Up

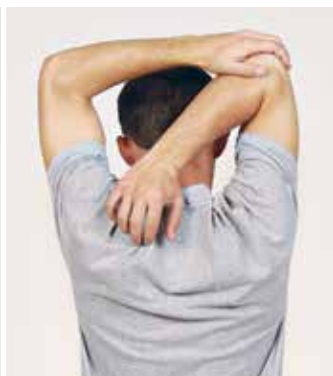
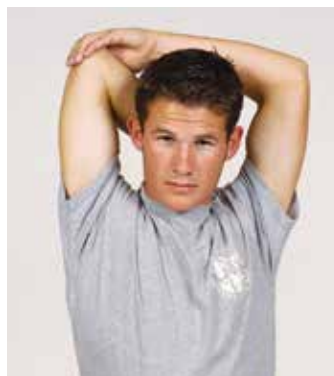
You will want to warm up the muscle groups specifically used in your sport. A typical warm-up should include 10 minutes of low to moderate aerobic activity, followed by a few minutes of stretching. Stretching as part of a warm-up won't improve your flexibility but may help reduce your risk of injury. Here are some 10-minute aerobic warm-up examples:

- Soccer—Jog around the field and then pass the ball with a partner.
- Cycling—Cycle at a slow pace.
- Running—Walk at a brisk pace.
- Swimming—Take several strokes in the air before getting in the pool for several slow laps.
- Tennis—Use your racquet and gently practice your strokes without using a ball.

**Five-minute stretching activity:** Using the stretches included in this merit badge pamphlet, stretch your legs, arms, and torso. By making your own routine sequence of stretches, or by having the team captain lead the stretches, this part of the warm-up can be done the same way each time—no thinking required.



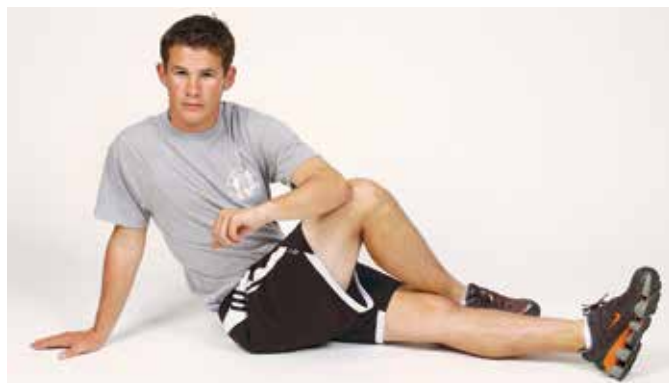
Chest stretch



**Tricep stretch**



**Quadriceps ("quad") stretch**



**Lower back stretch**

**Inner thigh stretch****Calf stretch****Hamstring stretch**

## Why Bother Cooling Down?

So you have had a great workout or practice. Now all you want is to hit the shower. But wait—you still have to cool down. Why bother?

Cooling down is an extremely important part of your workout for your muscles. Not only will cooling down help you avoid soreness, but there are other benefits:

- Reduces the chances of injury
- Allows your heart rate and breathing to return to normal
- Improves flexibility

What is a good cooldown? It's the warm-up in reverse! Begin your cooldown by doing about 10 minutes of stretching. Stretching after a workout is the most effective way to improve your flexibility. Finish your cooldown with a few minutes of mild aerobic activity, such as walking. Following this routine will help reduce any soreness you will have the day after an intense workout.

## Who Needs Weight Training?

Weight training will help you in almost any sport you pick. Don't confuse this with body builders, who weight-lift heavier and heavier weights to make their muscles look bigger. As an athlete competing in your chosen sport, you would want to lift lighter weights with more repetitions in a controlled movement to increase your strength and power in the movements required in your sport.

You may say, "Why spend time pumping iron when I could be practicing my goal kick for soccer?" Although repeating this type of kick would eventually increase your distance and speed, you could get faster results by spending some of your practice time exercising your leg muscles with weights to improve their current ability.

“If you don’t have a gym [for weight training], try lunges, push-ups, sit-ups, bench dips, body weight squats, squat jumps. Just lifting your own weight is enough sometimes.”

—Amanda Cromwell, professional soccer player



### Am I a Professional Athlete?

The answer is probably not. People who compete in sporting events are either amateurs or professionals. You are probably an amateur athlete, which is nothing to be ashamed of. An amateur athlete competes for the physical, mental, and social benefits—the joy of playing the sport. Although professional athletes also love playing their sport, they, unlike amateurs, receive money or other tangible rewards (gifts) for playing. An easy way to remember it is: for a professional athlete, playing a sport is their profession or job.

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 for participating in a sport. 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 gift, even free tickets for your parents to watch you compete, you could be deemed ineligible to participate in your school’s athletics.

The Olympic Games once featured the world’s best amateurs. But in 1986 the International Olympic Committee changed the rules to allow “all the world’s great male and female athletes to participate,” which included professionals.





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Always congratulate the opponent after the game. Humbly celebrate in front of the other team. Be encouraging to teammates and opponents during the game. Do not use trash talk or obscene gestures. Play to win, but be a polite loser.

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Colleges and universities may consider an athlete a professional, and therefore ineligible to compete, if he or she receives payment for participation 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 as an amateur.

## **Sportsmanship and You**

When participating in sports, you should practice good sportsmanship. The traits of sportsmanship include treating opponents, teammates, coaches, officials, and spectators with respect. Good sportsmanship and etiquette isn't always easy. After the game, whether you have won or lost, use good sportsmanship with your opponent by shaking hands and saying "good game."

Sometimes good sportsmanship means accepting what might be a poor decision made by an official, referee, or umpire. Remember, when you are struggling to be a good sport that you have promised to exhibit the Scout spirit. You show your Scout spirit with a cheerful smile and living by the Sco Oath, which includes helping other people at all times. It can be hard to be a good sport but you can always take pride in it. If you are having difficulty with the officials' rulings, try to put yourself in their shoes. From the official's point of view, the decision was consistent and fair.

If you truly disagree with the officiating after the game, it is acceptable to write a letter to the league commissioner or officiating coordinator expressing your concern. Also consider taking a course to qualify as an official. Not only will you learn more about the sport you love, you may actually earn a salary.

There is more to playing in a sporting event 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 leader all give amateur athletes a sense of pride. That feeling of accomplishment can outlast any winning score.

For example, even if your coach wants you to play center field and you had your heart set on pitching, play the best you can at center field. Flexibility and the ability to play several positions in a team sport makes you a valuable player, and coaches appreciate cooperation. If your coach offers advice, don't waste time trying to decide if you agree; make the adjustments as your coach suggested. The best players are not only talented but coachable—able to learn through a coach's corrections, which requires humility. Humility is an important quality of a good sport.

Some players may kick the ground, mumble bad words, and lose their temper during a game. This is not being a good sport. Maintain your cool—win or lose.



Although there will be times it is difficult, *never* argue with the referee. It is permissible to ask for clarification as long as you make it clear you are not trying to debate the call.

## Team Leaders

Leadership is not just the coach's responsibility. A strong team will have a member who also leads, a team captain. A leader influences team members to work toward a common team goal. A powerful way to lead is by example. If you think the team should play more confidently, then do it yourself. The most effective leaders not only motivate the team in their playing, but are also a friend to all teammates and practice good sportsmanship whether the team is winning or losing.



# Playing Sports

After all the training, practice, tryouts, and picking uniforms and equipment comes your big day—game day. The crowd gathers. You lace your shoes. You stretch and warm up. The referee blows the whistle. Your heart races and the game begins.

In this chapter, 13 of the sports listed in the requirements are discussed in alphabetical order, except similar sports are clustered, like baseball and softball. Your counselor may approve other sports organized by a school or local league. Several other popular high school-level sports are golf, gymnastics, swimming, track and field, and wrestling. In addition, the following sports merit badge pamphlets are available: *Archery*, *Canoeing*, *Climbing*, *Cycling*, *Golf*, *Horsemanship*, *Kayaking*, *Rowing*, *Skating*, *Swimming*, *Snow Sports*, *Water Sports*, and *Whitewater*. If you choose one of these sports to complete your requirement, be sure to read the merit badge pamphlet about it.

The complete rules for one sport would fill this book. In this chapter the basic rules for each sport are listed so you can begin playing the sport—and have fun. Remember to ask your coach, trainer, or counselor about rules specific to your league and age bracket. Also check with your counselor about making sure the sports you choose for requirement 5 are not ones that are unauthorized and restricted by the Boy Scouts of America.

## Sports Etiquette

In all sports there are unwritten rules called etiquette. The referee is not going to call a foul if you break one of these rules, but they are important nonetheless.

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**Possession** is a term used in many sports. If a player is carrying, dribbling, passing, or in any other way controlling the ball (or puck), then that player's team is in possession. In general, you must have possession in order to score, so having possession of the ball is to your team's advantage.

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Sports spectators also need to follow rules of etiquette. Clap with respect for your team but never boo the opposing team. When an injured player who was down on the field recovers or is carried off, then it is polite to clap in appreciation of the player's effort. Never throw anything at the players or try to enter the playing field during the game.



The coin toss is used to begin baseball, basketball, field hockey, football, ice hockey, lacrosse, soccer, softball, table tennis, tennis, volleyball, and water polo games. The visiting team captain will call "heads" or "tails" while the coin is in the air. The winner of the coin toss chooses either which side of the field or court to defend or whether to have possession of the ball for the kickoff or serve. In baseball and softball, the coin toss winner picks the first team up to bat.

## Baseball

Known as an American sport, baseball has its roots in the streets and fields of small-town America. Playing baseball will build quick reflexes, coordination, and a keen anticipation—being able to guess what the other team is going to do. Baseball players develop their arms, shoulders, and back for throwing and hitting. Because speed is of the essence when running the bases, baseball players strengthen their lower body also.

## Basic Baseball Rules

Nine players make up a baseball team: a pitcher, a catcher, a first baseman, a second baseman, a third baseman, and the shortstop (an additional player between second and third bases), and three outfielders. The pitcher throws the ball from the center of the infield—the pitcher’s mound. The team at bat sends batters to home plate to bat, in a set batting order. The pitcher throws the ball over the plate, and the batter tries to hit it between first and third base.



A ball is deemed hittable by the umpire if it passes through the strike zone, an area from the batter’s knees to chest over the plate. When a batter misses a hittable ball, as decided by the umpire, it is called a strike. You probably know the phrase, “three strikes and you’re out.” The batter who gets three strikes is then out and returns to the dugout.

The umpire will call “ball” on an unhittable ball. If a batter receives four unhittable balls, then the umpire has the player “walk” to first base.

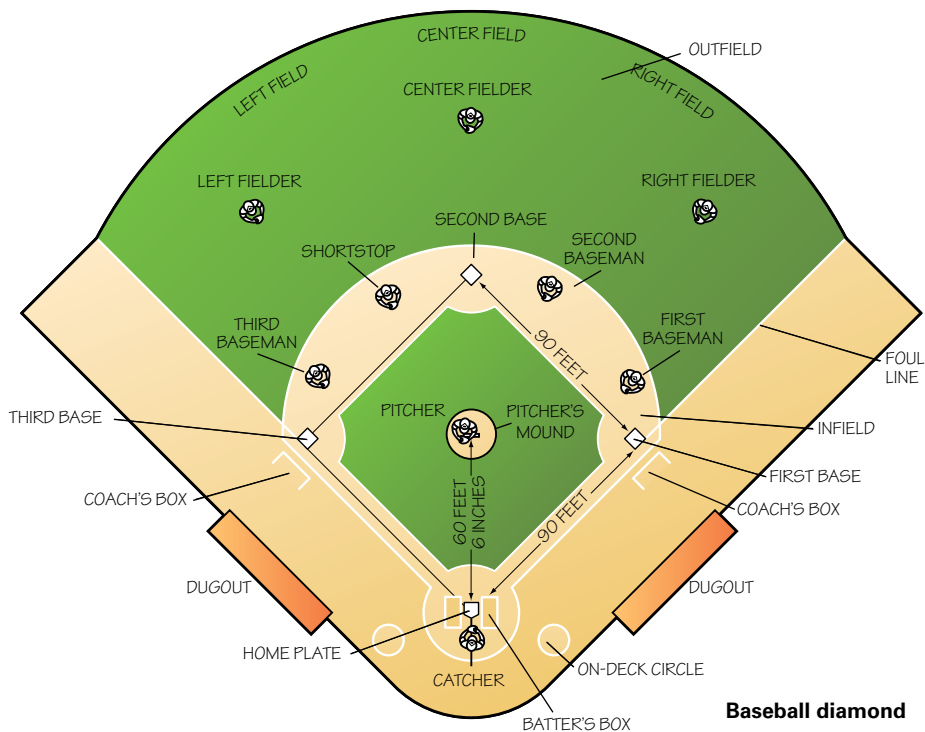
Bunt the ball to surprise the opposition by tapping instead of swinging the bat.

If the ball is hit, the batter drops the bat and runs to first base. The batter or any other base runner is “out” if touched by the team holding the ball while not safely touching a base.

As long as the team in the field is attempting to recover the ball, the batter may run to second, then third, or possibly all the way to home plate for a home run. Assuming the first batter stayed on first base, when the second batter hits the ball, the runner on first runs to second base or beyond, depending on the play.

A team scores a run, or point, when a runner safely touches all the bases and returns to home plate without being called out. In each inning, both teams have a turn at bat and in the field. A game is complete after the ninth inning if the game is not tied, which requires extra innings to break the tie.

With your parent’s permission, you can find the latest rule changes for baseball and softball on the Little League Baseball website: [www.littleleague.org](http://www.littleleague.org).



**Baseball diamond**



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In 1974, major leaguer Nolan Ryan set a world record for the fastest pitch ever at 100.9 mph. Even though pitches won't be coming at you that fast, be sure to wear a batting helmet when on deck or up to bat.

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For every position you play, you need a good pair of cleats to grip the ground. Most leagues require rubber, not metal, spiked cleats. Pick a batting helmet that fits snugly and comfortably. Shake your head and be sure it does not slip on your head. Some leagues require a face shield, too.



Try several different bats during practice to find that correct feel. Professionals cannot use aluminum bats, but your league probably allows them. Aluminum bats are lighter, they hit the ball farther, and they don't break. To give you a general idea of where to start in picking a bat, use the table below. Realize that for your individual swing style, like if you like to choke up on the bat, you may need a different length.

Player (minimum height, weight)	Bat Length
4 feet, 50 pounds	29 inches
4 feet 5 inches, 60 pounds	30 inches
5 feet, 70 pounds	31 inches
5 feet 5 inches, 80 pounds	32 inches

**Buy a glove designed for the position you play most often.**

**The catcher's mitt has a special padded palm for stopping fast pitches.**



**The first baseman, pitcher, and outfielders all need a larger glove to scoop up the ball.**



**For other infield positions, try a smaller glove so you can quickly catch and throw the ball.**



Babe Ruth never had a batting glove, but you may like them for the grip and avoiding blisters. Typically batters wear the batting glove on their lower hand, or left hand if you hit right-handed. Some even wear them on both hands.

The catcher squats behind home plate, catching sometimes more than 100 pitches a game and sometimes being hit by the ball. So a catcher needs special protective equipment not used by other players. A mask, skullcap, and throat protector slip over the catcher's head. A chest protector should fit comfortably and extend from the throat protector to the waist. Shin guards must cover the feet, shins, and knees. An athletic supporter and cup should also be worn. Last but not least, a catcher needs a special glove with extra padding to protect the glove hand from high-speed pitches—a catcher's mitt.



## Baseball and Softball Etiquette

When warming up before the game, never use the infield of the baseball diamond to do so. Instead, use only designated areas. During the game, refrain from arguing calls with the umpires. Players should never use any foreign substances (petroleum jelly, sandpaper, and so on) to alter the surface of a baseball. Also, if your team is winning the game with a comfortable lead (say 10 runs), don't embarrass the opposing team by excessively and unnecessarily widening that margin. This means you should think twice before stealing bases and bunting.

## Softball

Softball is a sport much like baseball, but with a smaller field and a bigger ball. Sometimes called mushball, the original softball was softer than today's. Although enjoyed by many amateurs, softball is played professionally by women.

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The softball field is two-thirds the size of a baseball field, with 60 feet between home plate and first base.

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### Basic Softball Rules

As in baseball, the object of the game is to bat the ball onto the fair field so that players can circle the bases and score runs. A run is scored when a batter runs the three bases and returns home without being tagged with the ball. A team is allowed three outs, then the opposing team is up to bat and the batting team covers the field. The umpire will call an out for three strikes, two strikes followed by a foul ball, and when a batted ball is caught in the field before touching the ground. Both teams take a turn at bat for each inning. The team with more runs wins!

The rules of softball may be found under baseball with the following two exceptions:

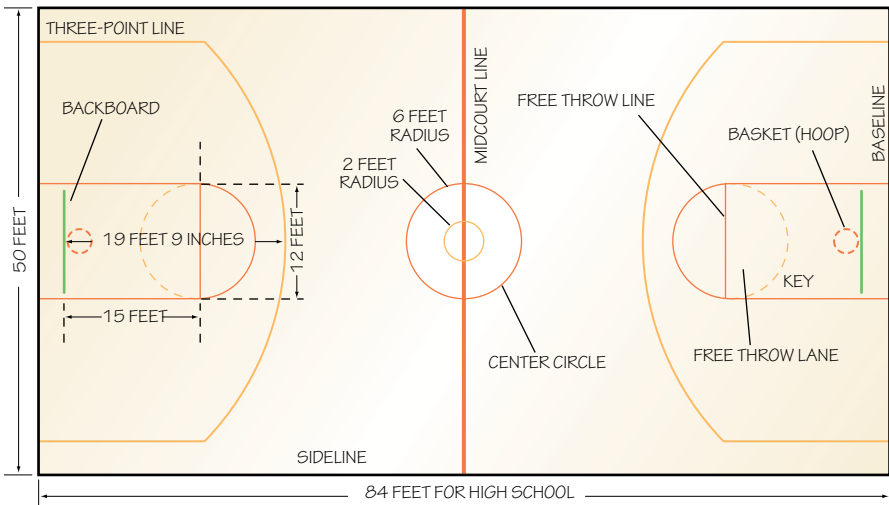
- The game consists of seven innings.
- The pitcher must throw underhanded.



**A softball with a circumference of 12 inches can be thrown and hit hard enough that players need to use their gloves. Softball gloves have a larger pocket than baseball gloves, which helps in catching the larger ball.**

## Basketball

James Naismith, a physical education instructor, had been challenged for years to come up with an indoor sport for the cold winter months in Massachusetts. Like most inventors, he tested several ideas that failed. He thought a goal with an opening that faced up versus facing the players like hockey or soccer would be fun. In December 1891, Naismith coached a game using a soccer ball thrown into two peach baskets nailed to the gym balcony—the fast-paced game of basketball was born.



**Basketball court**

### Basic Basketball Rules

The simplicity of basketball equipment with two hoops and a basketball makes it an excellent pick-up game. The five-player teams have a single objective to shoot the ball through the opponent's basket to score. Players have the advantage if they can dribble, bounce the ball with one hand, and pass while not looking at the ball but instead at the position of the other players. Once a player stops dribbling, by catching the ball in one or two hands, he or she must either attempt to pass or shoot the ball.

The goal of a dribbling player is to move closer to the basket for a shot, or to pass to a player who is in a position to take a shot. Of course at any skill level the closer to the hoop the

easier the shot. As you have probably seen in the final seconds of a game, a player may shoot from anywhere on the court. If a shot misses, maybe bounces off the hoop, it often rebounds back into play. A team must attempt to shoot a goal within a predetermined number of seconds of gaining possession on the playing court.

- Most basketball teams have 10 players on their roster at a time; the NBA allows 12.
- Most high school games consist of four quarters of 8-minute periods. If the game is tied, then overtimes, ranging from two to five minutes, are added until the tie is broken.
- A goal is made when a live ball enters the basket from above. Goal scores are one point for a free throw, two points from inside the three-point line, and three points from outside the three-point line.
- The ball is played only with hands. It is a violation to kick the ball. A player in possession of the ball may take one step and pivot on the other foot. If moving when the ball is caught, the player may take two steps before dribbling or passing.
- Dribbling is with one hand only. When a dribbling player places two hands on the ball, the dribbling is done; that player cannot dribble again until after another player has handled the ball.
- Depending on the league, a team with possession of the ball has a set amount of time in which they must take a shot. For the NBA the time is 24 seconds.
- Free throws are taken from the free throw line with no other players allowed in the key while the shot is taken. If an opponent fouls you while you are shooting, then the referee can give you as many as three free throws from the free throw line.
- Jump ball is used to begin the game, called a tip-off. A jump ball also can be used when two players catch the ball at the same time and it is difficult to see which team should have possession. A player from each team stands facing each other on either side of the ball the referee holds. The referee throws the ball straight up in the air and it is back in play. Both players jump to gain possession of the ball. Instead of a jump ball, many leagues use an alternating possession system, which allows teams to control possession equally.



- **Ten-second rule:** Once a team has possession of the ball, it has 10 seconds to move the ball to its front court.
- **Three-second rule:** When a player's team has possession of the ball, that player cannot be in the free throw lane for more than three seconds at a time.
- The referee may call a foul on a player for intentional contact with an opponent.
- After an opponent scores a basket, possession changes to the other team, whose designated player steps out of bounds and passes the ball to a teammate on the court. Then both players race to the other end of the court while dribbling or passing the ball, and play resumes.

### **Basketball Etiquette**

In all sports, and especially basketball, it is important to be encouraging toward your teammates and opponents. It is an unwritten rule, but important in the close-contact game of basketball, to hold back any negative comments and instead give encouragement like "good shot."

Your goal should be for your team to excel, not to set a new record for the number of baskets made by an individual. If you can safely pass the ball to another player who is in a better position, don't be a ball hog—pass the ball.

### **Equipment**

Truly all you need to play basketball are two hoops, a basketball, and a flat surface for dribbling the ball. A regulation basket is 10 feet above the ground, and the inside diameter of the hoops is 18 inches.

**Basketballs in the approved shade of orange are made of leather, rubber, or synthetic material. To meet regulations, your basketball when dropped from a height of 6 feet should bounce back at least 4 feet high. Basketballs come in different sizes. For players 9 to 11 years of age, a junior or youth basketball (size 5) should be about right. For players ages 11 to 14 try a size 6 ball. You can play basketball in any sneaker, but when buying basketball shoes, look for high-tops with ankle support and good grip.**



## Bowling

The object of bowling is to roll a bowling ball down the lane and knock over as many of the 10 pins as possible. Sounds easy, but this sport requires practice and skill to master. Bowling is enjoyed by many because it can be played by people young and old, tall and short, and male and female.



What is the maximum score? Knocking down all 10 pins is called a strike. If you have a perfect game, with all strikes, it would be 100, right? No, a perfect score is 300! Read on to learn the tricks of counting your bowling score.

On a bowling scorecard there are 10 boxes called frames. In the top left of each frame you write the number of pins knocked down on your first rolled ball. In the box in the top right corner of each frame record the number of pins that fall with the second ball. The total score is written in the bottom of the box. For each frame you get two chances to knock down all the pins, with a bonus ball in the tenth frame if you make a spare with the first two balls, or two bonus balls if you make a strike on the first ball. A spare, marked with a slash (/), is when all 10 pins are knocked down with the second delivery in one frame. A strike is marked with an "X" in the small square and is worth 10 points plus the number of pins in the next two deliveries.

## Basic Bowling Rules

A player, either as a team or as an individual, rolls a bowling ball aiming to knock down as many of the 10 pins as possible at the end of the 60 foot lane. Cheers go up for a spare, when all 10 pins are knocked down with the second bowl. And even louder cheers are given for a strike, when all 10 pins are knocked down with the first bowl. An automatic machine called a pin-spotter resets the pins after a player's second bowl or strike. Players or teams alternate turns bowling until all 10 frames on the scorecard are filled. The rare and perfect game is all strikes.

- Bowling is played either as an individual or as teams with up to five players on a team. On teams the players take turns bowling one frame at a time. Players must bowl in the order they have chosen each time. Teams or individuals alternate between two lanes with every frame. For example, team one would have all five players bowl frame one, while team two bowls their frame one on an adjacent lane. Then the teams would switch lanes before beginning frame two and bowl in the same order.
- Bowling 10 frames is a complete game. Bowl only two balls per frame, except bowl only one ball in a frame when a strike is scored, and three in the tenth frame after either a strike or a spare.

A spare is when all the pins are knocked down with two consecutive bowled balls.

A strike is when all the pins are knocked down with the first bowled ball of a frame.



### Sample bowling scorecard

1	2	3	4	5	6	7	8	9	10
7 -	8 1	9 /	7 2	X	8 /	X	9 -	X	X 8 /
7	16	33	42	62	82	101	110	138	158





- You are not allowed to step on or pass over the foul line when bowling. If you do, it is counted as a foul, with an “F” on the score. If it is your first delivery, you are allowed your second delivery after all the knocked down pins are respotted, or set up.
- Pinfalls count when they are knocked down by the ball or other pins but not when knocked down by a ball rebounding from the rear cushion, mechanical pinsetting equipment, or a bowler who fouls.

The ball is considered “dead” when:

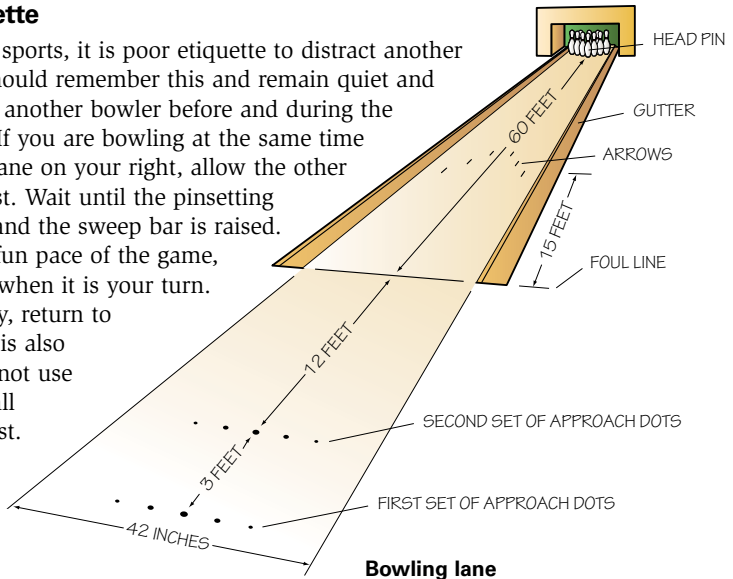
- A player bowls out of turn.
- A player is interfered with during delivery.
- A pin falls after delivery but before the ball rolls to the pins.
- If after delivery it is noted that one or more pins is missing in the setup.

When a dead ball is called, the delivery does not count, any knocked down pins are respotted, and the player is allowed to redeliver the ball.

## Bowling Etiquette

As in many other sports, it is poor etiquette to distract another player. Bowlers should remember this and remain quiet and still when around another bowler before and during the player's delivery. If you are bowling at the same time as someone in a lane on your right, allow the other player to bowl first. Wait until the pinsetting machine is done and the sweep bar is raised. To help keep the fun pace of the game, be ready to bowl when it is your turn.

After your delivery, return to the settee area. It is also good etiquette to not use someone else's ball without asking first.



Bowlers wear special bowling shoes with leather slide padded soles. All bowling balls are the same size—27 inches in

circumference. The ball weighs between 6 and 16 pounds and typically is made of plastic. It has three holes for finger grips. When picking a ball, make sure your thumb will insert all the way in the finger hole. A male teen might want to start with a 10-pound ball. To test the ball to make sure it is not too heavy for you, hold it out in front of you with one hand and count for five seconds. If you can easily hold the ball up, it should be fine.



## Cross-Country

If you like running but find running around the same track too boring, cross-country may be for you. Cross-country races are run over difficult and sometimes hilly ground that often vary in distance from 3 to 12 kilometers (less than 2 miles to more than 7 miles). Most high school courses are about 5 kilometers long.

Every course is different, but usually the course is shaped in a loop so that the start and finish lines are the same place. Today some cross-country organizations are leaving the obstacles of the countryside for stadiums. Yet for many the fun of cross-country running is the experience of the beautiful countryside scenery and challenge of uneven running surface.

### Cross-Country Etiquette

When running in an event or for team practice, exercise good etiquette by always passing on the left. Announcing “On your left” will alert another runner before you pass. Part of the experience of running cross-country is enjoying the beauty of the outdoors, so remember never to litter.

For more information on cross-country events, get your parent’s permission and visit the USA Track and Field website: [www.usatf.org](http://www.usatf.org).

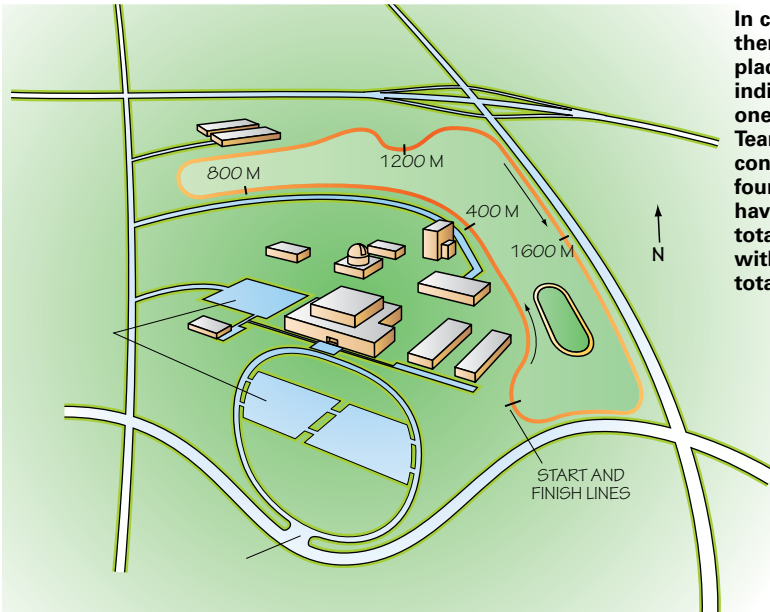
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How many miles is a 3-kilometer cross-country event? To convert kilometers to miles, simply multiply the kilometers by 0.62. So a 3-kilometer run is  $3 \times 0.62 = 1.86$  miles.

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Cross-country cleats have a maximum of 11 cleats.



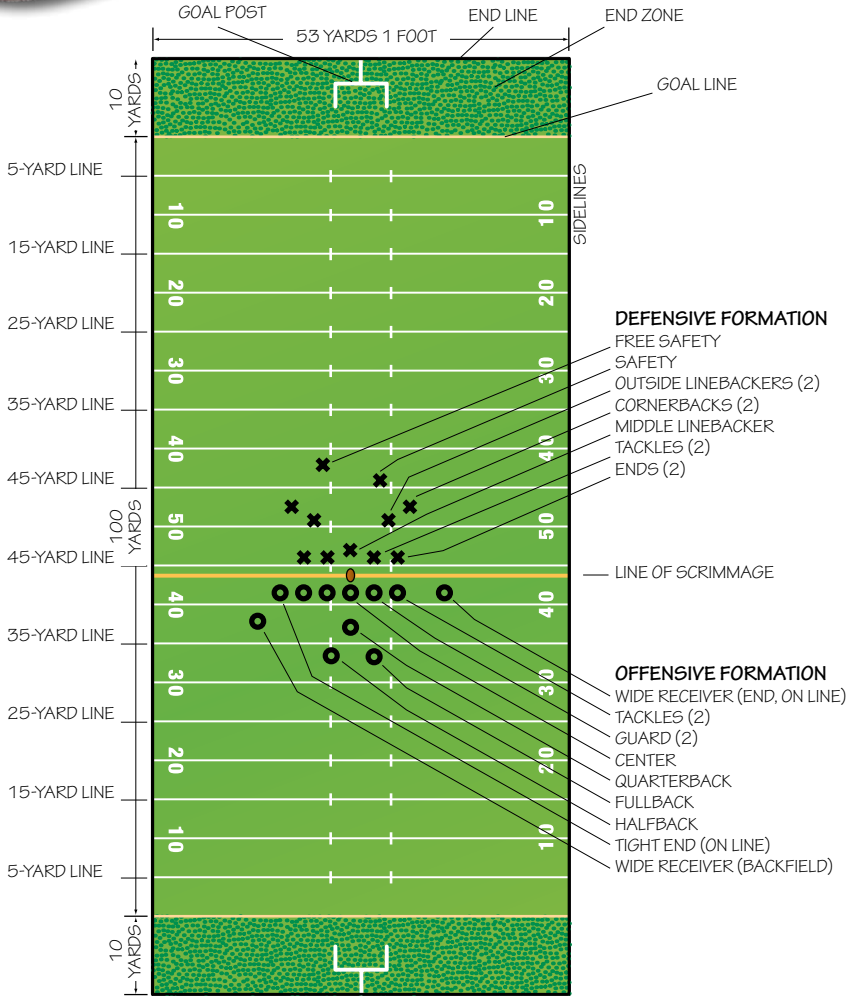
In cross-country there are two placings, one for individual and one for teams. Teams, usually consisting of four runners, have their times totaled. The team with the lowest total time wins.

**Cross-country course**



## Football

Football is an extremely popular high school, college, and professional game in the United States. The mix of hard-hitting physical contact and complex tactics and formations, sometimes compared to chess, appeals to the masses. The highlight of the professional National Football League season is battled out in the Super Bowl each year.



Football field

## Basic Football Rules

Football is played between two teams on a 100-yard field with goal posts at either end. The object of the game is to move the ball by passing and/or running the ball over the opponent's goal line—touchdown! Sometimes a touchdown happens after one play, but usually it requires several plays. A touchdown is worth six points. After the touchdown the ball is placed close to the goal line. The scoring team has two choices for a point after touchdown (PAT). They can score one point by kicking the ball between the uprights—the extra point. Or they can score two points if they advance the ball across the goal line—known as a two-point conversion.

- A football team usually plays 11 on the field at a time, but the complete team sometimes consists of 45 players.
- Football is played in four quarters, at varying time lengths depending on the level. The professional National Football League and colleges play 15-minute quarters; high schools play 12 minutes; and lower levels play less than that. A game often lasts three hours because the clock stops after an incomplete pass, for a change of possession, or if a player with the ball goes out of bounds. Teams change ends with each quarter. A kickoff begins each half.
- Other than kickoffs and free kicks, each play begins with both teams facing each other along the line of scrimmage, which runs through the ball and straight to each sideline.
- Players can run with the ball or pass it. Offensive players may forward only one pass per play from behind the line of scrimmage.
- Offensive players may use their arms and hands to block opponents, but they cannot hold on to them. For offensive holding the referee can give a 10-yard penalty—move the ball back 10 yards.

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Because of the potential for injury, the Boy Scouts of America does not authorize football as an activity to be played during Scouting activities. However, football can be used as one of the sports for this merit badge if participation is as part of an organized school activity or municipal parks-and-recreation program.

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Flag football is for those who love the game but prefer to reduce the risk of injury. In flag football a player wears two flags made of narrow strips of nylon hanging from a belt. A ball carrier is “tackled” when a defender simply pulls off the flag. A player’s speed and tactics outweigh the importance of the player’s size in flag football.

- If a defender unfairly attempts to stop an opponent from catching the ball, the defender is given a first down at the spot of violation. If an offender unfairly interferes with a defender attempting to intercept a pass, the offender will lose yardage.
- In some leagues, a tied game at the end of the fourth quarter goes into overtime with another 15-minute quarter that ends in “sudden death” when either team scores. If neither team scores in overtime, the game is declared a tie.

### Football Etiquette

Football might be a contact sport, but pushing, shoving, and other acts of aggression are strictly forbidden when the play is over. Help teammates and opponents up from the ground whenever possible, and never jump or “pile on” another player once the whistle has blown. At the end of the game, remember to shake hands with opponents.



A football’s pebble-grained leather cover and laces make it easier to grip. Its bounce comes from the inflated rubber bladder inside. Football players are some of the most heavily padded athletes with pads protecting shoulders, hips, thighs, and knees. While no helmet can prevent all head injuries, today’s helmets, with a polypropylene plastic padded shell and face mask, do protect better than the previous generations of plastic helmets and leather helmets.

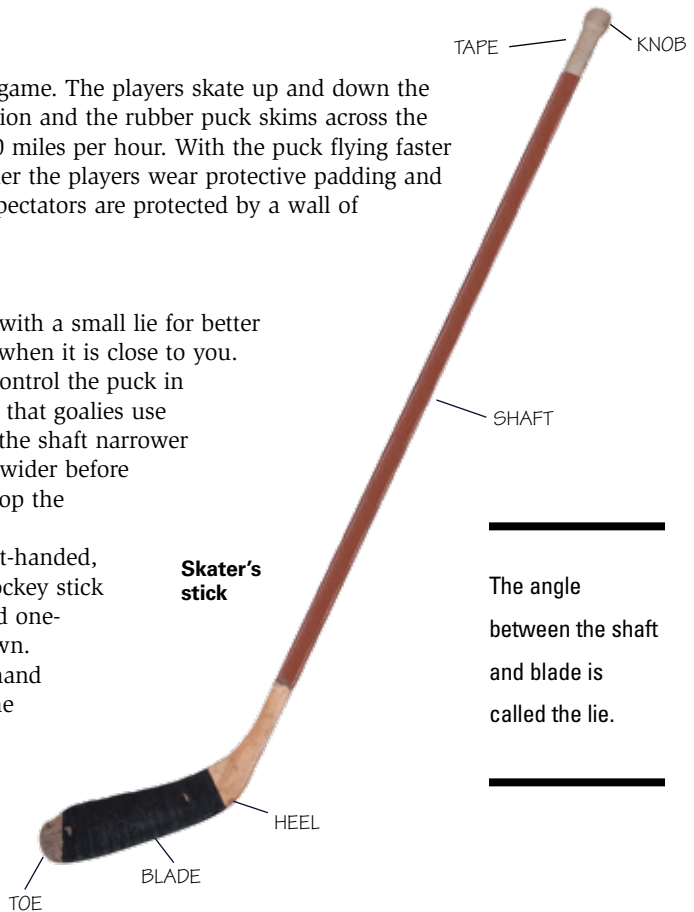
## Ice Hockey

Ice hockey is a fast game. The players skate up and down the rink in nonstop motion and the rubber puck skims across the ice at more than 100 miles per hour. With the puck flying faster than a car, no wonder the players wear protective padding and helmets. Even the spectators are protected by a wall of shatterproof glass.

### Equipment

Pick a hockey stick with a small lie for better control of the puck when it is close to you. Pick a larger lie to control the puck in a larger area. Notice that goalies use a special stick with the shaft narrower at the top and then wider before the blade, to help stop the flying puck.

If you play right-handed, you will grab the hockey stick with your right hand one-third of the way down. Then use your left hand to hold the top of the shaft. Left-handed players do the opposite with a left-handed stick.




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The angle between the shaft and blade is called the lie.

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## Hat Trick

The term hat trick started with the game of cricket when a player made three consecutive wickets. Today the term means three goals by one player in one game in several sports, including ice hockey, field hockey, soccer, and lacrosse. In baseball it is jokingly called a hat trick when a batter strikes out three times in a single game. Hat tricks can also mean three significant accomplishments, like three championships in basketball. Have you ever had a hat trick?

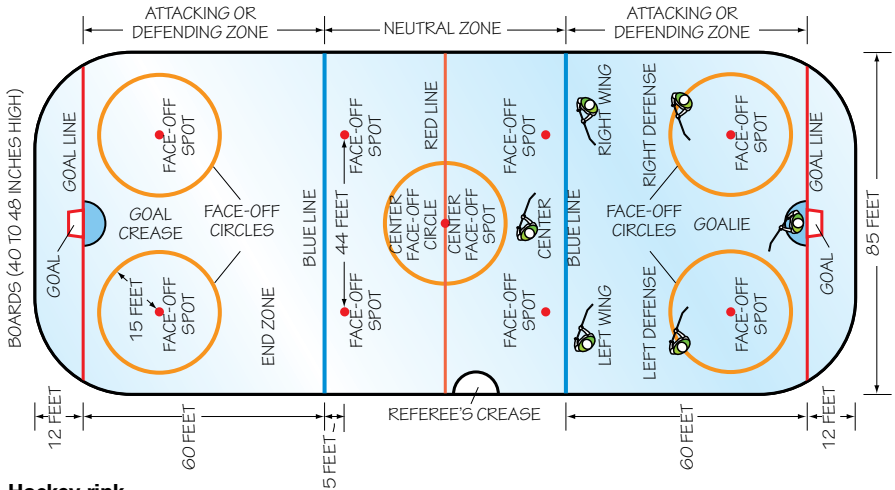




**Goalies wear special gloves and additional padding to protect them from a speeding puck.**

## Did You Know?

- The hard rubber puck used in a professional hockey game measures 1 inch thick and 3 inches in diameter.
- To reduce friction, players sharpen the  $\frac{1}{8}$ -inch-thick blades on their skates.
- Ice hockey has been an Olympic event since 1920.
- A hockey puck can race through the air at 100 mph.
- Ice hockey jerseys are traditionally called sweaters.



Hockey rink

## Ice Hockey Etiquette

Maybe you have heard the funny saying, “I was at a fight and a hockey game broke out.” Unfortunately this sometimes seems true. Don’t let it happen to your game. Show good sportsmanship by not getting in a fight and by discouraging your teammates from doing so.

Spectator etiquette for any sport is only to cheer for your team. It is poor spectator etiquette to throw anything onto the ice—not to mention dangerous for the skaters.

Ice hockey originally was played outdoors on frozen lakes or ponds, but today it is more often played indoors on artificial ice.

## Basic Ice Hockey Rules

The fast game of ice hockey is played by two teams skating on mechanically frozen or natural ice, and hitting a rubber puck with sticks. The object is to defend your goal from the opponent’s attack and to score by hitting the puck in the opponent’s goal. Teams battle over the puck with six players: three forwards, two defenders, and a goalie. The puck stays in play even when it hits a barrier board that encircles the rink to protect spectators. The action halts only when the puck sails over the barrier, when an official calls an infringement, or after a goal.

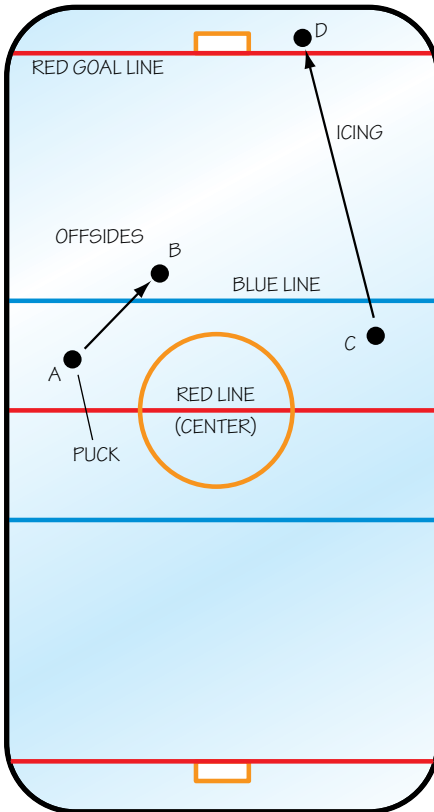
—————  
A shutout—every  
goalie’s dream—is  
when no goals are  
scored on a team  
the entire game.  
What sports other  
than ice hockey  
have shutouts?  
—————

To restart play, the official drops the puck in a face-off. For a goal to count, the puck must be played fairly off a stick. It cannot be thrown or kicked into the goal.

- A game consists of three periods, each about 20 minutes long.
- Each team sends six players on the ice at a time.
- Skaters advance the puck by skating with it or passing it. Players must keep the puck in motion and advance toward their opponent’s goal with the puck. The only exception is players may take the puck behind their own goal one time.
- Penalties include offsides and icing. An offsides is called when a player passes the puck forward to a teammate in the attacking zone, over the blue line. Icing is when a player shoots the puck from his or her side of the red (center) line all the way across the red goal line on the attacking side, but not into the goal, and the puck is first touched by a member of the attacking team.
- Each period begins with a face-off. Teams line up on their side of the red (center) line with the centers from each team in the center face-off circle.

Players who commit a penalty are sent to the penalty box. After a minor penalty, a player spends two minutes, or until the other team scores, in the penalty box. After a major penalty, a player spends a full five minutes in the penalty box regardless of whether the other team scores. The team with a player in the penalty box has to play shorthanded, with fewer than six players on the ice. The opposing team with a player advantage has a “power play” and a significant opportunity to score. Violations other than offsides and icing include hooking, slashing, high-sticking, spearing, tripping, checking from behind, and fighting.

Ice hockey, field hockey, and lacrosse all use the face-off. In ice hockey, the official blows the whistle and drops the puck between the sticks of the two players, who immediately try to gain possession of the puck. Face-offs are used to begin a game and to restart play (after a goal; when a puck is hit out of the rink; or after offsides, icing, or other violations).



**Offsides  
and icing**

## Game Strategy

Imagine there are five minutes left on the clock and your team is down 1-0. If you could tie, your team has a chance to advance; if you lose, your team is out of the run for the championship. What would you do if you were coach? You might pull your goalie out of the game and send in another forward. With more attackers, your odds of scoring increase. If the opposing team makes another goal first, your team is no worse off, since they were already losing. This strategy is used in many other sports, including soccer.

### **Delayed Penalty**

Sometimes a team commits a penalty and the opposing team immediately gains possession of the puck. In this case, in order not to penalize the nonoffending team by stopping play, the official will raise an arm to signal a penalty but will not blow the whistle. Depending on the outcome of the play, the official may waive the penalty or simply delay it.

## Field Hockey

Games with balls and sticks date back to ancient Egyptian, Greek, and Roman civilizations. In time, field hockey branched into two other games, on horseback as polo and on ice as ice hockey. The International Hockey Federation (FIH) approved the first World Cup Hockey Tournament to be held in 1971. With your parent's permission, look for upcoming field hockey events at the FIH website: [www.fih.ch/?redirect=internal](http://www.fih.ch/?redirect=internal).



### Basic Field Hockey Rules

Field hockey is played usually on grassy fields with two teams hitting a ball with hockey sticks. The object of the game is to score by hitting the hockey ball from within the shooting circle into the opponent's goal. The team scoring the most goals wins. Unique to field hockey, players other than the goalie are not allowed to play the ball off any part of their body. Players hit, push, flick, and scoop the ball with the flat face on the curved

end of the stick. Players attack the goal by dribbling—moving the ball down the field with their stick—or by passing the ball to a teammate. To add to the challenge of passing and dribbling, the opponent tries to intercept the ball or tackle the player with the ball.

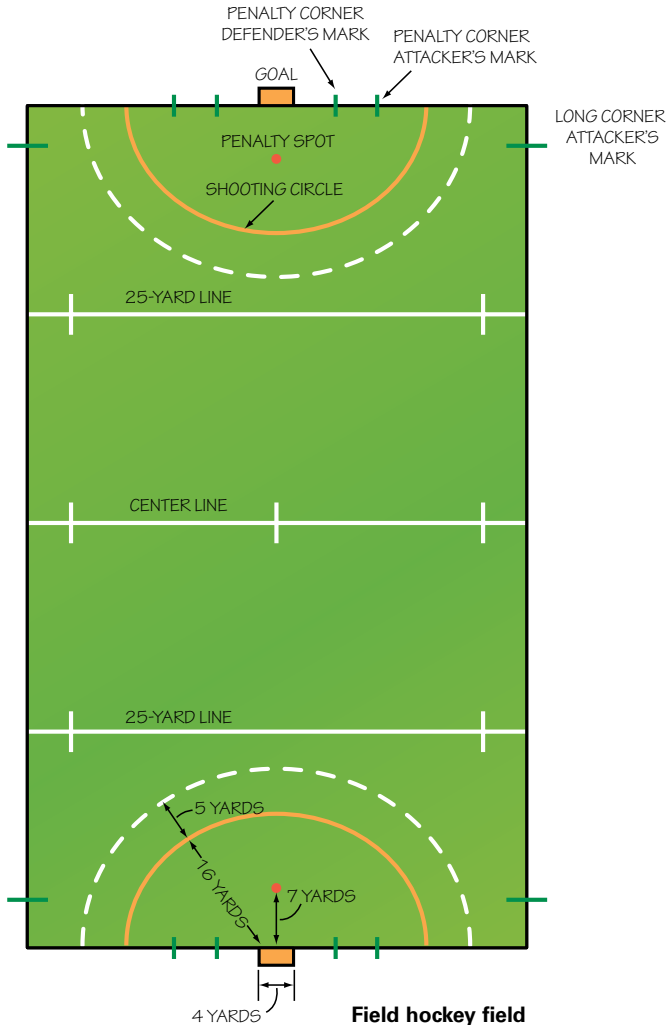
- Each team fields 11 players.
- A game is two halves of 35 minutes each.
- An attacking player hits the ball completely across the goal line to score a goal. Goals count only when the shot is taken from inside the shooting circle.
- For the safety of both teammates and opponents, players may not play the ball with their sticks above shoulder height. Players also are not allowed to charge, kick, or hold an opponent.
- If a player is called on a penalty, the umpire awards a free hit, a penalty stroke, or a penalty corner to the opposing team. In extreme cases, an umpire may make a violating player sit out for at least five minutes. During this time, the team must play shorthanded, with fewer than 11 players on the field.
- If both teams break the rules at the same time or if the game is stopped for an injury, the umpire will call a face-off to resume play. A player from each team will face each other with the ball on the ground between their sticks. Then they tap their sticks on the ground and hit their sticks together three times. Next they both quickly try to gain possession of the ball.

### **Field Hockey Etiquette**

If an opponent hits you, remember that “flopping”—pretending to get hit harder than you actually are—is not allowed and could result in a penalty. Use only the flat side of your stick, and never obstruct the ball from your opponent using your stick or body. All players should have an equal chance to play the ball and gain control of the ball.

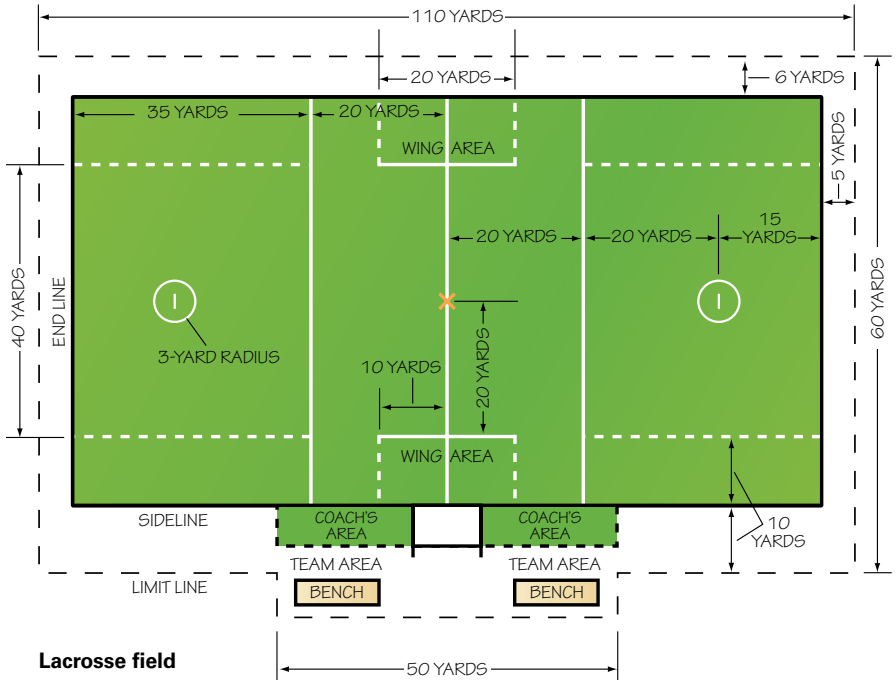


Players make contact with the ball with the flat side of the curved end of the wooden field hockey stick. Forwards tend to choose lighter sticks (18 to 19 ounces) for quick ball control. Defenders often prefer heavier sticks (22 to 25.9 ounces) for hard hits. Play with a stick length you are comfortable with, but in general if you are shorter than 5 feet tall, use a 32- or 34-inch stick, and if you are taller than 5 feet, try a 35-, 36-, or 37-inch stick. A goal-keeper wears a different colored jersey and protection from the hard plastic ball, including a helmet with face guard, body protector, padded gloves, and shin guards.



## Lacrosse

American Indians, like the Sioux, Cherokee, and Choctaw, played a game that was the inspiration of today's lacrosse. Although the sticks' shape would remind you of today's sticks, there were many differences in the game. Games often covered miles and lasted for several days. The games served many religious and ritual purposes, and they helped prepare the tribes for war.





### Basic Lacrosse Rules

The almost acrobatic game of lacrosse is played by batting, carrying, or throwing the ball, not with the player's hands but with the lacrosse stick. Only the goalie can use hands in touching the ball. To begin play, two players face-off in the center spot. Once a player has possession of the ball, the rest of the team enters the game. Attempting to gain possession of the ball, players intercept the ball during a pass, charge the ball in ground scuttles, and within the rules, check their opponent's lacrosse stick.

- A lacrosse game is four quarters, each 15 minutes long with two teams of 10 players each. The team positions are three attackers, three midfielders, three defenders, and a goalkeeper.
- To begin the game, the referee places the ball between the sticks of the two center attackers, who at the sound of the referee's whistle try to gain possession of the ball.
- The ball is either carried in the stick, passed with a wrist-flipping motion or kicked to the goal. Opposing players attempt to block or intercept the ball.
- After each goal, the team scored upon returns to midfield and has possession of the ball at the whistle.
- Only goalies can use their hands to block or catch the ball.
- For a personal foul, a referee can award a one-minute suspension or go as far as removing the offending player for the remainder of the game. A personal foul includes checking (hitting) an opponent with the part of the stick between the hands or from behind, above the shoulders, or below the knees when the person is not in possession of the ball.
- Technical fouls include a player interfering with the free movement of an opponent (interference), except when the opponent has possession of the ball or each is within 5 yards of a loose ball; or when a team does not have at least four players on its defensive side of the midfield line; or at least three players on its offensive side (offsides).





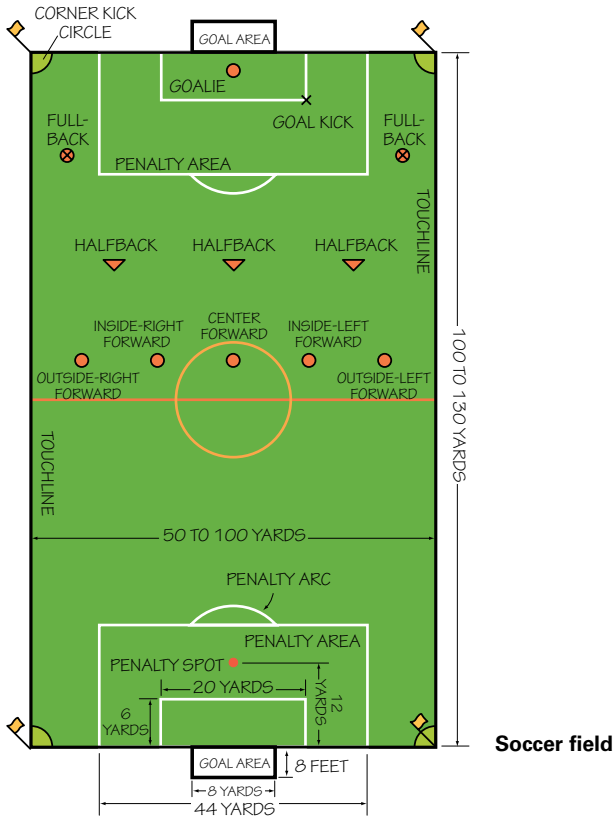
**Modern lacrosse sticks are crafted of molded plastic heads, nylon nets, and aluminum shafts. The rubber ball is just smaller than a baseball. Players prefer cleated shoes to grip the ground on grass fields. Don't forget your safety equipment for this aggressive sport, including a mouthpiece, face mask, helmet, and padded gloves.**

### **Lacrosse Etiquette**

Because teamwork is so critical to lacrosse, it is considered good etiquette to pass to an open player, not hog the ball, and not show favoritism in your passing. It is also considered good etiquette to shoot at the goal only when it is an open or clear shot. Shooting to increase your personal chance of more goals, when you do not have an open shot, shows poor etiquette and usually results in giving possession of the ball to the other team. Team players make decisions based on what is best for their teams, not for themselves.

## Soccer

Soccer scores as the world's most popular game to play and watch. Only in the last 20 years has the United States joined the European obsession with soccer. Today soccer is the number one youth participation sport in America with more than 19 million youth between the ages of 5 and 19 participating.



### Basic Soccer Rules

Soccer is played with two teams on an open grass field with goal posts at each end. The object of the game is to move the soccer ball down the field by kicking, passing, or heading. To score a point, a player must put the ball into the opponent's guarded goal. With only two exceptions, players are not allowed to use their arms. Goalies, inside their goalie boxes, may use

their arms to block, grab, and throw the ball. If the ball passes over the sidelines, then the opponent to the last team that touched the ball throws the ball back into play. After each goal, the team that was scored on kicks off the ball from the center of the field. Soccer, known as football in European countries, has a growing number of fans who love the nonstop action.

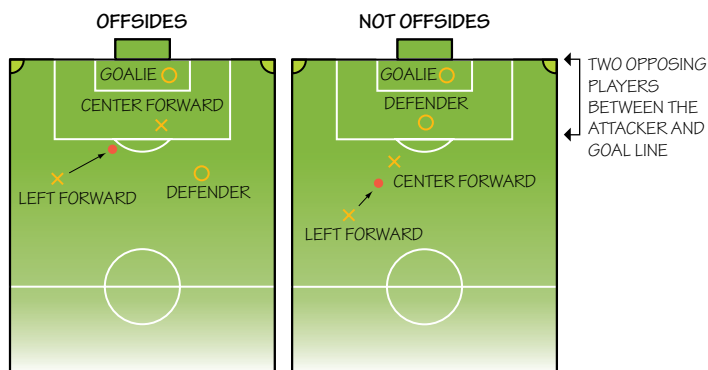
- A team has 11 players on the field, including the goalkeeper.
- A game is two equal halves of 45 minutes. After the referee gives the signal, the game begins with a kickoff.
- A goal is scored when the whole ball crosses over the goal line between the goal posts and under the cross-bar—when the ball goes in the goal.
- After a goal, the team scored on takes the kickoff. After halftime, the teams change ends and the team that did not take the starting kickoff takes the kickoff for the second half.
- The ball is in play except if it completely crosses the goal line or sideline or if the referee stops the game.
- A player committing an offside is penalized by awarding the opposing team with an indirect kick. An indirect kick must be kicked by two players before scoring a goal. A referee can also call a foul and award an indirect kick to penalize the opposing team for playing dangerously, tackling when not playing the ball, or charging the goalie out of play.
- A foul is called and a kick awarded for a “hand ball,” which occurs when a player deliberately touches the ball with a hand or arm. Of course, the goalie is an exception in being allowed to use hands and arms inside the penalty box.





The required technique for a throw-in is two hands on the ball, thrown from over the head with two feet on the ground at the time the ball is released.

- If a player fouls for misconduct or argues with a referee, he can receive a yellow card, or warning. For more serious offenses like violent behavior or foul language, a referee can raise a red card, sending the player off the field for the remainder of the game.
- The team committing the foul for dangerous play is penalized by the award of a direct kick to the opposing team. The direct free kick is taken from the point where the foul occurred. The advantage of a direct kick is that it can be kicked directly into the goal to score.



**A player is offside when receiving the ball and being nearer to the opponent's goal line than the ball, unless two opponents are nearer the goal line.**

A throw-in is taken when the whole ball crosses the side-line. The player on the opposing team who last touched the ball takes the throw-in. If the whole ball passes over the goal line, other than between the goal posts, then it is a goal kick or a corner kick. If the last player to touch the ball was on the attacking team, it is a goal kick. If the last player to touch the ball is on the defending team, it is a corner kick.

With your parent's permission, you may find the complete official soccer rules used in Major League Soccer at [www.mlssoccer.com/league/official-rules/competition-rules-and-regulations](http://www.mlssoccer.com/league/official-rules/competition-rules-and-regulations).



The traditional soccer ball has white hexagons and black pentagons sewn together over an inflatable bladder.



## Soccer Etiquette

If a player is down because of an injury, a courteous player will knock the ball out of play over a sideline to stop play so that the injured player may be given first-aid attention. In return, the team given the opportunity to take the throw-in, as a returned favor, should give it to the team who kicked the ball out.

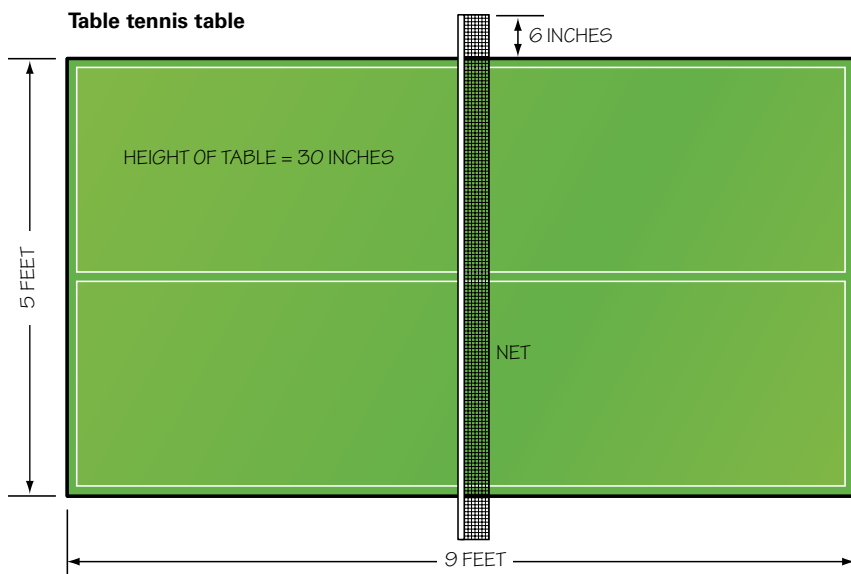
Another rule of soccer etiquette is for an attacking player to jump over a goalie sliding for the ball. Don't charge the goalie if they have won the race for the ball. This also is a safety measure for both players.

When purchasing soccer cleats, remember to wear your soccer socks and shin guards.



## Table Tennis

Table tennis, which is often called ping-pong, is believed to have begun when people wanted to miniaturize tennis as an indoor game. Regardless of its history, table tennis is a fun, fast-paced game using two or four players that helps develop quick reflexes, agility, timing, and tactics.



### Basic Table Tennis Rules

For those who prefer indoor sports, table tennis is played on a table by two for singles, or four for doubles. The players face each other on opposite sides of the table and hit the ball back and forth over the net to bounce once before being returned. There are many similar rules between table tennis and the parent sport, tennis.

- To serve, the ball must be thrown from the palm of the free hand at least 6 inches in the air before it is hit with the racket. A strike is when the racket hits a ball that is in play.
- The server must hit the ball so it bounces once in the server's court before passing over the net and touching the opponent's court. A player or pair serves until two points

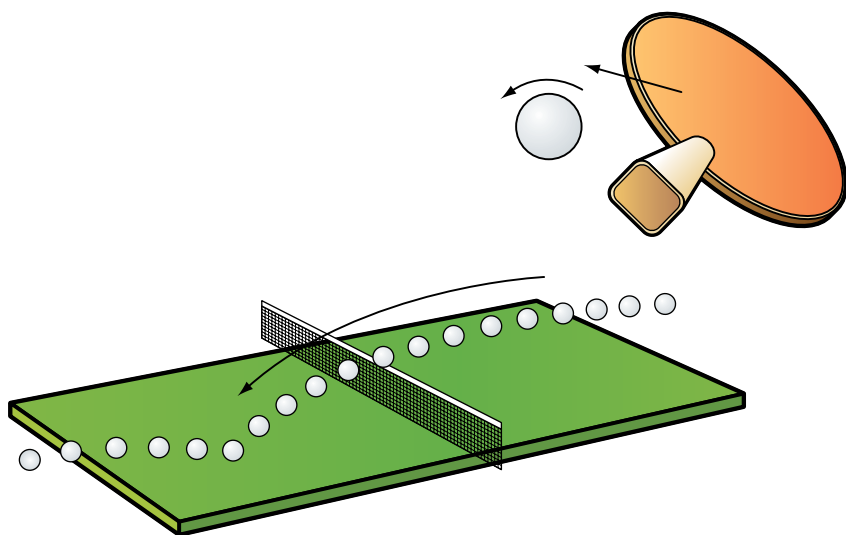
have been scored, and then the opponent becomes the serving player. Serving continues to alternate throughout the game unless both sides score 10 points, at which time the sequencing continues but alternates on one point scored.

- In singles, the two players take turns hitting the ball after it has bounced one time on their side. Failure of a player to strike the ball and return it, or striking the ball twice or bouncing twice before the strike, results in a point for the opponent.
- In doubles, the four players have a set striking order. The ball travels from the server to the first receiver, then to the server's partner, and then to the first receiver's partner.
- The first player to score 11 points wins the game, unless both players tie at 10 points, then the first player with a two-point lead wins. A match is the best of any odd number of games, but usually is the best of three or five.
- The player or pair trade sides of the table with each game and in the last game of a match, the players or pairs trade ends when one side scores five points.

A table tennis racket, often called a ping-pong paddle, has an elliptical wooden surface, often covered with pimples rubber. The hollow plastic balls come in one-, two-, and three-star types, with three being the highest quality.







**Put a backspin on the ball by hitting downward with the racket angled up. Put topspin on the ball by hitting in a downward motion with the racket angled down.**

### **Table Tennis Etiquette**

Treat the other player with respect by shaking hands before and after the match. Never use verbal or physical confrontation. If your opponent is not treating you with respect, discuss it with your coach. Regardless of how frustrated you may feel, never throw your racket or hit it against the table. If a point is decided by the ball hitting a corner of the table or is difficult to return after hitting the net either raise an index finger or say “sorry.” When watching a table tennis match, never do anything that would distract the players. That includes never walking around the table during the match. Do have a good time and clap after a point is made.

For more information, with your parent’s permission, check the International Table Tennis Federation website, [www.ittf.com](http://www.ittf.com), or the USA Table Tennis website, [www.usatt.org](http://www.usatt.org).

## Tennis

Tennis is worldwide popular sport that builds quick reflexes, agility, timing, and stamina. You can enjoy this sport with just a solid wall to bounce off of, a tennis racket, and a tennis ball.

### Basic Tennis Rules

Tennis players, either two for singles or four for doubles, hit the ball with a long-handled racket over a net so it will bounce within the boundaries of an opponent's side of the court. Points are won by returning balls over the net so that your opponent cannot hit them back to your side of the court. To begin a game, a player serves, the ball bounces once in the opponent's court-side, and the opponent returns the ball. The rally continues until a player misses the ball, or hits it into the net or out of bounds. One player serves for the entire game. A player with a powerful, accurate serve can dominate the game.

- The server stands behind the baseline on the right-hand side of the center mark. The serve must clear the net and land in the receiver's right-hand service court to be considered "in" or "good." If the serve is not good, the server has one more chance to make a good serve, a second service, before the point is lost and the opponent is allowed to serve.
- The ball may bounce only one time in the player's court before it is hit or returned. It must bounce one time after being served, but for the remainder of the rally it does not have to bounce before being returned. If the ball does bounce, it must bounce inside the opponent's court boundaries.
- If the ball hits the net before landing in the receiver's court it is called a let. A let is a rally in which the players agree that no one scores, usually because it was difficult to agree on which player earned the point.
- The server's score is always announced first. The score for tennis is as follows:

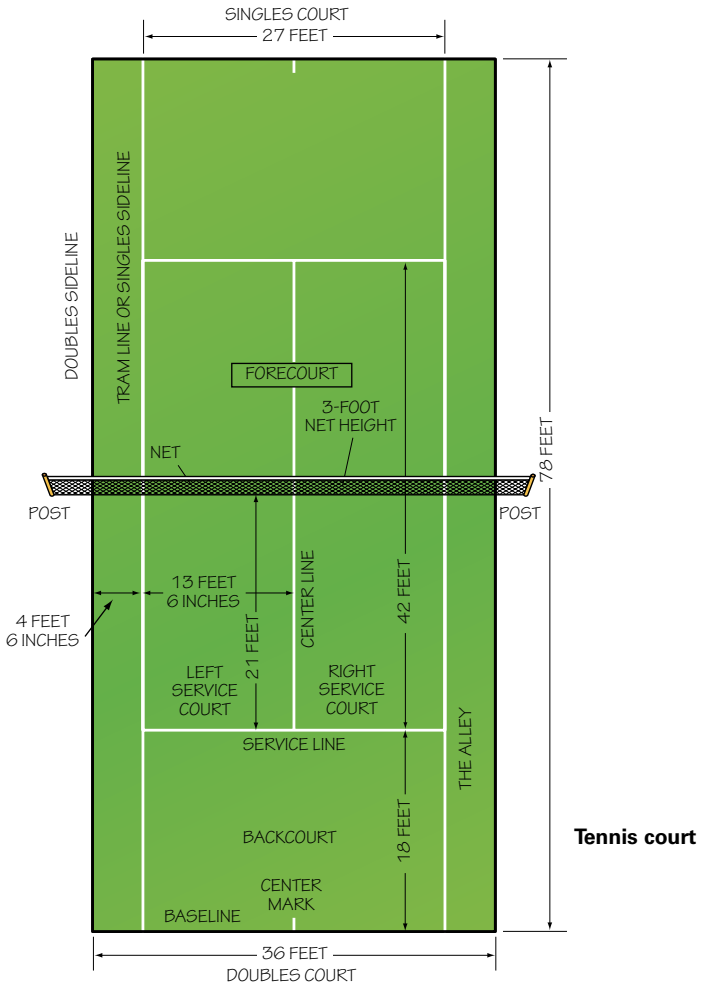
No points	Love
First point	15
Second point	30
Third point	40
Fourth point	Game

A rally is a time when the ball is in play. In tennis it would last from the time of a serve until the time a ball goes out of play, for instance bouncing out of bounds. Rallies happen in volleyball and racket sports like tennis, table tennis, badminton, and squash.

- If tied at 40 it is called “40 all” or deuce. A player must then score two successive points to win. The first player to win six games wins a set. A match is no more than five sets for men and three sets for women. How many games could be in a match?

Play is nonstop. Players trade off both on who is the first to serve and on which ends of the court they play on the odd numbered games, like the first, third, and fifth games of set.

If both players have won six games, “six-all”, then a tie-break game is played to find the winner of the set.



## Tennis Etiquette

Few sports enjoy the etiquette of tennis. Even the crowds show their respect to the players' concentration by clapping and cheering only at the correct time. Follow these basic rules of etiquette:

- If you are close to the players, speak softly and don't walk behind the court.
- Retrieve balls for your partner, opponent, and neighboring court. When returning balls to neighboring courts, they must be rolled at a time when play is not in progress.
- Wear sneakers and a tucked-in collared shirt.
- Call your own lines and respect your opponent's line calls.

To meet regulation, a tennis ball must bounce 53 to 58 inches when dropped from 100 inches. Now you can check to see if your tennis ball is "flat." Their bounce comes from a hollow rubber core wrapped in a flannel nylon shell. This nylon shell is traditionally yellow but now comes in a variety of colors.



The tennis racket's frame holds the tightly woven strings in place. The correct string tightness allows the racket to return the energy to the ball at impact, resulting in better ball speed. A tennis racket frame cannot exceed 29 inches in length or 12½ inches in width. New lightweight aluminum and graphite frames have replaced the traditional wooden frames. With these high-tech metal tennis rackets, some professionals can send a serve at over 130 mph. Wow, that's fast!



## Volleyball

It is no surprise that a sport that can be played inside a gym, on an outside court, or on the beach by anyone, young and old—even coed teams—has become so popular. From the pick-up game on the beach to the highly competitive Olympics, volleyball builds teamwork, upper-body strength, and quick reflexes.

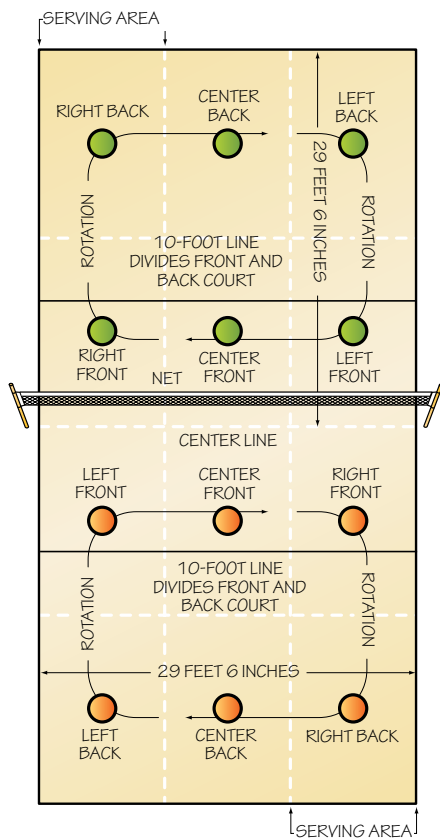
### Basic Volleyball Rules

Volleyball is a sport in which two teams pass a ball (volley) across a tall net stretched midway across the court. The object is to make the ball touch inside the boundaries of the court on the opposing team's side. The volley starts with one team member serving the ball from behind the far end of the court, and after that, each team has up to three hits to return the ball to the other side. If a team fails to return the ball or makes an error, the other side scores a point.

- The server stands behind the end line and hits the ball with one hand or arm. Before and during the serve, the players must be in two rows of three. After the serve the players are free to move about.
- A team has a maximum of three hits to get the ball back over the net. The team that wins a point serves for the next point. If this team served the previous point, then the same player serves again. If this team did not serve the previous point, then the players rotate clockwise on the court, and the next player serves.
- The ball may be hit with any part of the player's body, but it must be a clean hit, not carried in the follow-through as judged by the referee. No player can hit the ball two times in a row, even if one touch is unintentional. The exceptions are when making the first of the team's three hits or when blocking at the net.
- The teams alternate court ends and serving, after each set and after a team has eight points in the fifth set.
- A set is 25 points (using the rally point system). A match is the best of three or five sets. If a fifth set is necessary, it is usually played to only 15 points.

- The serving team scores a point if the opponent hits the ball out of bounds or if the ball touches the opponent's court. If the ball touches the court on the serving team's side, then the rally is over, but no points are scored.
- A player may not penetrate into the opposing team's side of the court.
- If back-row players move into the front-row area, then they cannot jump and can hit the ball over the net only when the ball is below the level of the net. If a back-row player hits a ball above the height of the net, then he must jump from behind the 10-foot line, the line that divides the front and back row.

With your parent's permission, learn more about volleyball at [www.teamusa.org/USA-Volleyball](http://www.teamusa.org/USA-Volleyball).



Volleyball court




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The person who is right-back after a rotation is the server. When facing the net, rotation is clockwise.

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Beach volleyball has become an Olympic sport. It is played on the same size court as volleyball only the court is made of sand.

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## Volleyball Etiquette

Accidents can happen in volleyball, but it is basic etiquette to never aim the ball at another player's face. When a rally ends with your team scoring because of your team's good shot, then you may clap, but when your team scores because of the opposing team's error, then you should not applaud. It shows good etiquette to slap hands with the opposing team when passing under the net to change sides. Also, players must never touch the net or poles.

**The dig is used to field a spike or a fast-moving hit. The ball, made of real or synthetic leather, contains an inflated rubber bladder.**



## Class Act

These rules of etiquette apply to all sports.

- When the national anthem plays before the game, show your respect by standing, removing your hat, and placing your hand over your heart. If you are walking when the anthem begins, face the flag and stand still until the completion of the anthem.
- Spectators should refrain from talking and using mobile phones while in the stands. If you must keep your phone turned on, put it in the "vibrate" mode so you won't disturb others.
- Treat the opposing team and fans of the opposing team with respect; refrain from jeering and from throwing objects in the stands.
- After the game, players should exchange a friendly handshake.

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## Water Polo

During the 1800s a new game started in rivers and lakes. Like polo on horses, players rode astride floating barrels pushing a ball toward a goal with paddles. Today, water polo is more like soccer with players dribbling and passing the ball with one small difference—water polo is played while swimming or treading water.

### Basic Water Polo Rules

Two teams move a ball across the pool while treading water or swimming. The object of the game is to score by throwing the water polo ball into your opponent's goal. Players move the ball across the water with a crawl swim stroke, yet keeping their heads above water to watch other players' positions. Players also move the ball by throwing it to their teammates.

- A team consists of seven players. Players other than the goalkeeper must stay in the water without touching the bottom or supporting themselves by touching the sides. Players either swim or tread water to stay afloat. Junior Olympic competitions (18 years old and under) consist of four quarters of five minutes each.
- To begin the game, the referee blows the whistle and tosses the ball in the water at the middle of the pool.
- To score, a player must make the ball pass completely over the goal line and into the goal.
- After a goal, the team that was scored on puts the ball back in play.
- Only goalkeepers may hold the ball with two hands and hit it with their fists.
- Once a team takes possession of the ball, it has 35 seconds to throw it at the opposing goal.
- If a player commits an ordinary foul, like pushing off from the pool side or holding the ball under water while being tackled, then the referee may award a free throw to the opposing team. A free throw is taken from the place where the foul occurred.

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Men's water polo holds the title as the longest standing team sport in Olympic history.

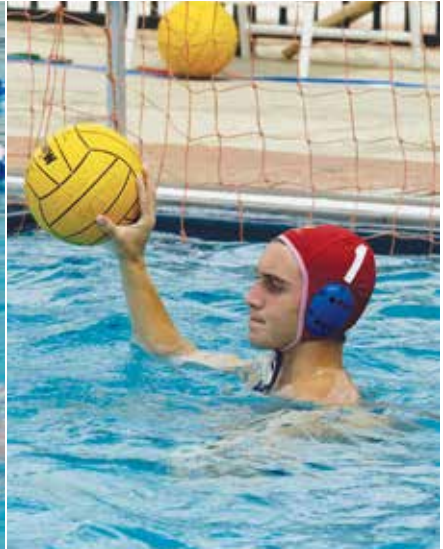
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- If a player commits a penalty foul, like unsportsmanlike conduct or physical action against another player, then depending on the foul the referee may award a penalty, free, goal, corner, or neutral throw. If a player commits three fouls, the referee removes that player for the rest of the game.



**Dribbling in water polo, like soccer, moves the ball toward the goal while keeping it close to the player protecting it from the opposing team. To dribble in the water, players swim the crawl stroke with raised heads, pushing the ball forward between their arms and in front of their faces.**



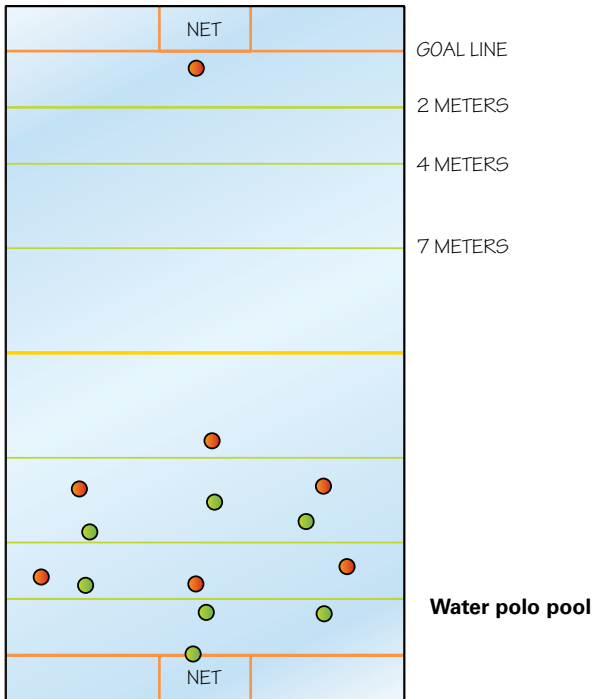
**Since water polo players don't wear jerseys with numbers, they use caps numbered 1 to 13 with soft ear protectors. Both goalkeepers wear red caps with the number 1. The rest of the team wear matching caps that contrast the color of the other team.**

## Water Safety

Whenever you enter a pool, remember what you know as a Scout about water safety. Verify that the swimming will be supervised by a responsible adult, coach, or lifeguard. Before entering a pool, look at the varying depths. If possible, use the buddy system, where each swimmer is responsible for the safety of their buddy.

Training for water polo has three main parts: muscle warm-up and strength training outside the pool, swimming laps, and practicing passing and receiving the ball. Want to swim like a water polo swimmer? Swim the crawl, used in the freestyle event, with your back arched, your head held out of the water, and short rapid arm strokes.

TEAM BENCH



TEAM BENCH

## Water Polo Etiquette

In water polo it is a policy not to beat the opposing team by more than 10 points. Players must change clothes only in the locker room, and should not enter the deck area to warm up until the previous game is finished, unless a warm-up area is provided.



# Personal Training

Now you have chosen a sport in which to compete for a season or at least four months. Where do you go from here? With your counselor, and maybe also your coach, work out a personal training program. Every athlete is an individual starting at a different level, with a different schedule and different gifts. Set goals for yourself in your development and realize that even the professionals practice and train for years to get where they are.

## Track Your Progress

By writing down your training, practice, and development, you will have the reward of looking back on how far you have come and be able to set new goals to work toward. It is hard to get somewhere in life without a written plan of where you are going and how you are going to get there. Mastering a sport is no different. Fill in these charts or make your own charts by hand or using spreadsheet software.





You may find that the season you lost the most games is the season you progressed most in your sport. Track your season. In every sporting event you will have a highlight, something that went right, something you have not done before, or some way you even surprised yourself—take pride and write it down. Also don't forget to note the lessons, as they say, you learned the hard way.

## Win/Loss/Tie Record for Season

Name \_\_\_\_\_ Team name \_\_\_\_\_ Season \_\_\_\_\_

Win \_\_\_\_\_ Loss \_\_\_\_\_ Tie \_\_\_\_\_

Date	Opponent	My Highlight	Score	What I Learned



The American College of Sports Medicine recommends eight to 12 reps for muscular strength and 10 to 15 reps for muscular endurance.

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You know muscles have to be worked to be strengthened. They need to work against some kind of weight—even if it is your own body weight. Weight training actually breaks down the muscle fibers and then, in your day of rest, they build back up stronger than before. This is why it is critical to take at least one day of rest between workouts with weights.

Tracking your progress to heavier weights is rewarding. In weight training there are two buzz words you will want to know:

- **Repetitions**—the number of times a single exercise is done. Often the number of repetitions is an even dozen. If you are doing pushups, it would be the number of pushups.
- **Sets**—A group of repetitions of each exercise. Then to do a second set you repeat all the exercises. When you exercise in sets, one muscle group is allowed to rest while the other muscle groups are exercised. Although the following guidelines may seem simple, they are only a suggestion, and even with this information it is very important to work with a knowledgeable trainer whenever you participate in weight training.

Two sets will increase your strength gradually with a low risk of injury. Remember, you should not feel a strain until the end of the set. On a day that you increase your weight, you may not be able to complete a set. That is OK. Try not to increase your weight in all areas at once—that makes it hard to even walk the next day. Limit yourself to two or three repetitions when you feel the strain. Strength training will help you in agility, reflexes, and strength in sports; this is not bodybuilding that builds bulky muscles that may look impressive but would not help you perform your chosen sport.

Try to always give yourself one or two days' rest between weight training workouts to allow your muscles time to recover.







**Track your development.** With your counselor’s help, find five ways to test your level of ability for your chosen sport. If your speed is timed at meets as in track or swimming, then the results of these events will be a good gauge of your progress. If you have also used a weight program, use one of your repetitions as an indicator of your strength. Don’t forget technique. Work with your counselor to find a particular technique you want to improve and a way to monitor your progress in that area.



# Your Development

Name \_\_\_\_\_

	<b>Beginning</b>	<b>Date:</b>	<b>Midseason</b>	<b>Date:</b>	<b>End of Season</b>	<b>Date:</b>
<b>Measure 1</b>						
<b>Measure 2</b>						
<b>Measure 3</b>						
<b>Measure 4</b>						
<b>Measure 5</b>						

## Technique

Mastering a sport is not all brute strength—proper technique can turn a loss into a win. Technique is not something you concentrate on in one training session but for a lifetime in your chosen sport. Do you know the best grip for your racket, bat, or stick? Do you change the grip for serves or scoops? What about your stance in batting, a face-off, or throw-in? Try teaching your technique to another player or Scout to further cement your understanding and knowledge before presenting it to your merit badge counselor.

## Bonus to Sports: Mentally and Physically

Those who participate in sports develop a better self-image and ability to work with others, in addition to the ability to work hard and have fun at the same time.

Review your completed “Your Development” chart with your counselor. What other benefits have you gotten from playing a sport that would be hard to quantify? There are lots of mental benefits from sports. Read these ideas below to see if they apply to you.

- Learn how to work with a team and how to think of the team’s needs before your own. Also learn how to take turns and share.
- Learn how to respect others, the coach, the referee, your teammates, and the other team.
- Learn how to win gracefully and lose undaunted. Learn to limit your cheering after a win in front of the losing team. Learn to keep your chin up after a loss by thinking about the good plays and positive teamwork.
- Develop a positive self-image. You have monitored your progress and cannot help but feel proud of what you have accomplished.

Now that you have worked so hard to develop your physical fitness you have a new appreciation for the work your sport requires and the rewards it brings.





# Avoiding and Treating Sports Injuries

You probably know from playing sports that it is worth your time and effort to avoid and treat injuries to keep you on the field and off the sidelines. Proper training, conditioning, warm-up, cool-down, stretching, and protective equipment can go a long way to keep you safe from injury and enjoying sports.

## Common Sports Injuries

If you are injured, you should *not* try to play through the pain. Ignoring an injury could make it worse. Treat injuries until they are healed before you return to training or games. Teens should be especially careful with injuries because their bodies are growing. A neglected or mistreated injury could become a lifetime problem and limit your sports participation.

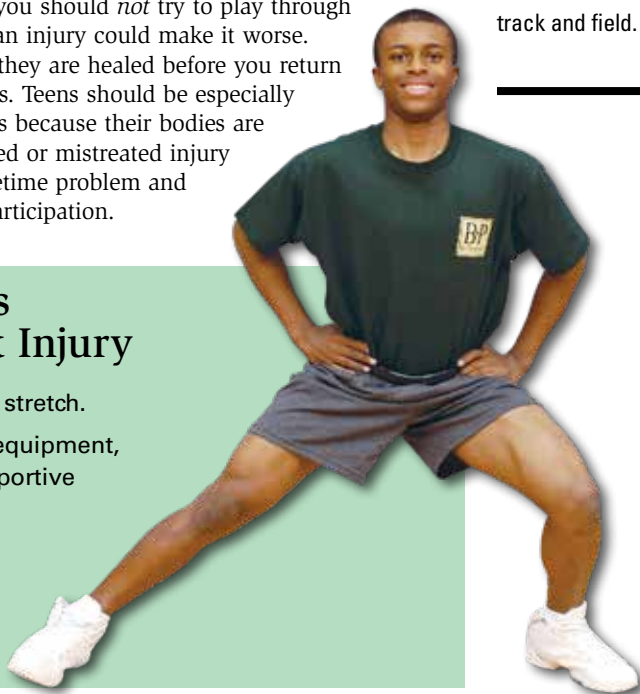
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Noncontact sports have a lower risk of injury. Among these are bowling, cross-country running, golf, swimming, table tennis, tennis, and track and field.

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## Four Steps to Prevent Injury

1. Warm up and stretch.
2. Wear proper equipment, including supportive shoes.
3. Drink water.
4. Cool down and stretch.





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

A **sprain** is caused by a twisting, wrenching, or lifting movement that tears or stretches tissues surrounding a joint. Just like a strain, the injury is to tissue, but a sprain—which is more serious—injures ligament tissue. Ligaments hold bones together at the joints. A sprain can happen when you are walking, running, or jumping, especially on an uneven surface. You may know someone who twisted and sprained their ankle slipping off a curb. If you have a sprain 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.

## RICE

For sprains and strains remember RICE:

R = Rest

I = Ice

C = Compression

E = Elevation



Reduce the pain and swelling of both sprains and strains by applying an ice pack to the injured area (try a bag of frozen peas for 20 minutes). To limit mobility, minimize swelling, and protect the spot, wrap the area firmly with an elastic bandage (but not so tightly that circulation is restricted). Rest and elevate the injured area. 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**, which you probably call bruises, are caused by an impact that starts internal bleeding but doesn't break the skin. A bruise discolors the skin with black-and-blue marks. 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 treated easily. 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.

Players may become frightened or anxious after an accident. Some do not handle the sight of blood easily. They might breathe too heavily or too shallow, which can result in hyperventilation. Stay calm yourself, and encourage the player to relax and breathe slowly.



You can get tetanus bacteria from something as minor as a scratch or pinprick on a dirty nail or knife. The tetanus bacteria affects the nervous system and can eventually lead to muscle spasms where the person is unable to open the mouth, hence it is often called "lockjaw." Tetanus immunization requires a booster shot every 10 years. Are you up-to-date? Ask your physician.



**Abrasions**, or scrapes, are caused when skin is rubbed or scraped off. A skinned knee is an abrasion. 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 is possible infection.

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

**Fractures**, or broken bones, are often caused by a blow or fall. A stress fracture can be a small crack in the bone. In a displaced fracture, the bone separates along the crack. With a fracture, you may hear the bone snap or see a deformity, swelling, or discoloration, and most often it is very painful. If you are unsure if it is broken, treat it as if it is, and contact medical help immediately. Ice packs will reduce the swelling and pain until medical assistance is available.

**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 by applying an adhesive bandage or moleskin.

If a blister must be drained, first wash the blister with mild soap and water. Dry it 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 it with an adhesive bandage or other sterile dressing. If a blister has already broken, treat it like an abrasion.

**Muscle cramps** are believed to be caused mainly by inadequate stretching or overuse, resulting in uncontrolled muscle contractions. When you have a muscle cramp, stop your activity, gently stretch the cramping muscle, then massage it. Applying heat will ease tight muscles. To avoid future cramps, spend extra time stretching the cramping muscle before and after your workout.

**Dehydration** is caused by a lack of water in the body. It can occur in cold weather as well as hot. The first signs will usually be dark-colored urine, thirst, dry lips, and a slightly dry mouth. As dehydration advances to the moderate level, you may have 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 shallow breathing, cold hands and feet, and confusion. Left untreated, severe dehydration can lead to shock and even death.

If you are mildly dehydrated, drink plenty of water. Seek medical help if you are moderately dehydrated. Severe dehydration requires hospitalization for intravenous fluids.

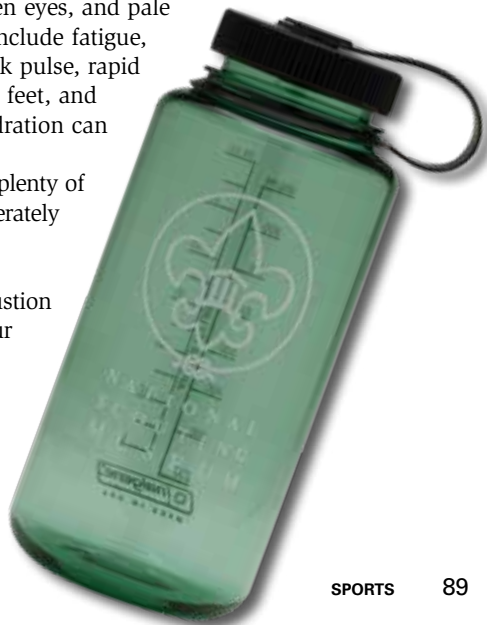
**Heat reactions** include heat exhaustion and heatstroke—problems that can occur when the body becomes overheated because it no longer is able to maintain a normal temperature. Heat exhaustion is quite common and less serious than heatstroke. However, it is still a serious condition.

**16 ounces of water = two water breaks**

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Don't wait until you feel thirsty in hot or cold weather to drink. Being thirsty is a sign you are already mildly dehydrated! Always drink at least eight ounces of water every 20 minutes during exercise. Call "Water break!"

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**Heat exhaustion** occurs when the body becomes overheated and cannot sufficiently cool itself. The person will have a body temperature between 98.6 and 102 degrees. They may also have pale clammy skin, heavy sweating, dizziness and fainting, pronounced weakness, nausea, headache, or muscle cramps.

Help lower the person’s body temperature by having them lie down in a shady, cool spot with feet raised. Loosen clothing and apply cool, wet cloths or use a fan. Have the person sip water. Recovery should be rapid, but if symptoms persist, seek medical attention.

**Heatstroke**, sometimes called sunstroke, is much more serious than heat exhaustion. If heat exhaustion is left untreated it can develop into heatstroke. 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 above 102 degrees; red, hot, and dry skin; and an extremely rapid pulse. Other signs include confusion, fainting or unconsciousness, and convulsions.

If you suspect heatstroke, call 911. Move the person to a shaded spot, face up with head and shoulders elevated. Follow the treatment methods for heat exhaustion to help cool the victim. If possible, help the victim to a tub of cool (not ice-cold) water. Once the body temperature drops below 101 degrees, dry the skin and encourage them to drink water.



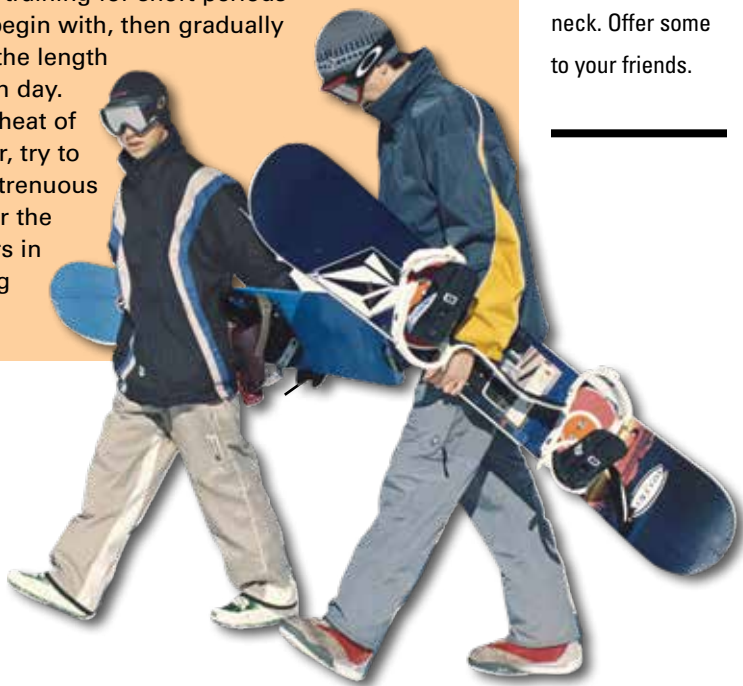
**Body Temperature**

Normal	98.6 degrees
Heat Exhaustion	98.6 to 102 degrees
Heatstroke	102 degrees and above

**Cold reactions** occur when a body is not able to maintain a warm enough temperature. The signs include uncontrollable shivering, poor muscle coordination, shallow breathing, metal confusion, drowsiness, numbness, and even unconscious. Call for medical help and then warm the person. Take the victim to shelter, remove any wet clothing, and wrap in warm blankets or coats. Offer the victim a warm drink. Remember, your own body heat is another resource. Frostbite is an advanced cold reaction where the numb skin turns white or grayish-yellow and feels extremely cold. Frostbite is more common on fingers, toes, cheeks, ears, and the nose. Call 911 for frostbite, and then soak affected area in water that is from 100 to 104 degrees.

## Clothing

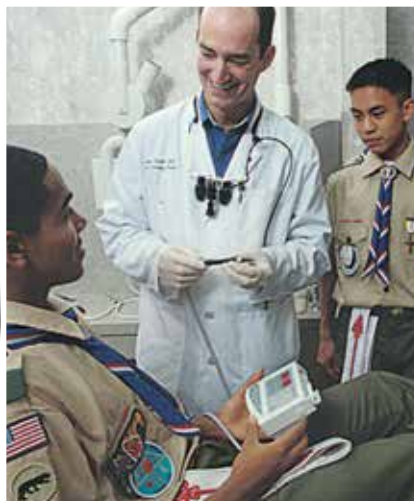
To guard against the effects of heat and cold, remember clothing and water. Athletes should wear appropriate clothing to help keep them cool or warm when training and competing. Acclimate yourself to the weather by training for short periods of time to begin with, then gradually increasing the length of time each day. During the heat of the summer, try to plan your strenuous activities for the cooler hours in the morning or evening.




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One of the most important pieces of equipment for any outdoor sport is too often forgotten—sunscreen. Use a sunscreen with a sun protection factor (SPF) of at least 15. Don't forget your nose, ears, and neck. Offer some to your friends.

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**Injured teeth** are often caused by an impact with another player or sport equipment. An injured tooth can be chipped, loosened, cracked, or even knocked out. In all cases, except a chipped tooth, contact a dentist immediately.

Realign a loose tooth in its original position. For a knocked out tooth, hold it by the crown, not the roots. If it is dirty, rinse it off. Next, carefully replace the tooth in its socket and hold it there. If that isn't possible, put the tooth in a cup of milk or under your tongue. Do not let the tooth dry, or it will die. See a dentist immediately.

**Nausea**, or the sensation before vomiting, is often caused by exercising too soon after eating. Nausea is worse if the exercise is more intense or closely follows a meal. Try to eat your meal one to three hours before you start your exercise. Since your stomach digests liquids faster than solids, you can have a liquid meal closer to an event.

**Head, neck, and back injuries** are caused by an impact to the area. With a severe injury, the player may become dizzy and suffer from headache, bleeding, nausea, or vomiting. The player may even lose consciousness. **If the person is unconscious, do not move them.** Call 911. In a nonemergency case, the player may have slight weakness, stinging, numbness, or tingling. Apply RICE and seek medical attention.

## Concussions

Concussions are increasingly recognized as being serious injuries. The signs and symptoms typically show up soon after the injury, but some may not appear for hours or days. Sometimes, people say they “don’t feel right” or “feel down” after a hit or a fall. The Centers for Disease Control and Prevention suggests checking to see if the victim:

- Can’t recall events that happened prior to or after the incident
- Seems to be stunned or dazed
- Seems confused, can’t concentrate, or forgets details of the game, score, etc.
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows changes in mood, behavior, or personality
- Complains of a headache or “pressure” in the head
- Feels nauseous or is vomiting
- Feels dizzy, can’t stay balanced, or complains of double or blurry vision
- Seems bothered by lights or noises
- Feels sluggish, weak, or unsteady on foot

If these signs and symptoms appear—or if you suspect a concussion for other reasons—the victim should be taken immediately to the nearest hospital emergency room.



# Sports Resources

## Scouting Literature

*Scouts BSA Handbook for Boys and Scouts BSA Handbook for Girls*; *Emergency First Aid* pocket guide; *Be Prepared First Aid Book*; *Archery, Athletics, Canoeing, Climbing, Cycling, First Aid, Golf, Horsemanship, Kayaking, Personal Fitness, Rowing, Safety, Scuba Diving, Skating, Small-Boat Sailing, Snow Sports, Swimming*, and *Water Sports* merit badge pamphlets

With your parent's permission, visit the Boy Scouts of America's official retail website, [www.scoutshop.org](http://www.scoutshop.org), for a complete listing of all merit badge pamphlets and other helpful Scouting materials and supplies.

## Books

- Bauer, Gerhard. *New Soccer Techniques, Tactics & Teamwork*. Sterling Publishing, 2002.
- Dearing, Joel. *Volleyball Fundamentals*, 2nd ed. Human Kinetics, 2003.
- Dintiman, George Blough. *Speed Improvement for Young Athletes: How to Sprint Faster in Your Sport in 30 Workouts*. National Association of Speed and Explosion, 2006.
- Driver, Bruce. *The Baffled Parent's Guide to Coaching Youth Hockey*. International Marine/Ragged Mountain Press, 2004.
- Faigenbaum, Avery D., and Wayne L. Westcott. *Youth Strength Training: Programs for Health, Fitness and Sport*. Human Kinetics, 2009.
- FB Plays. *Unbeatable Flag Football Plays*. Kindle Edition, 2011.
- Fortin, Francois. *Sports: The Complete Visual Reference*. Firefly Books, 2003.
- Greene, Larry, and Russ Pate. *Training Young Distance Runners*, 3rd ed. Human Kinetics, 2004.
- Hammond, Tim. *Sports*. Dorling Kindersley Eyewitness Books, 2005.
- Heitzmann, Ray. *Careers for Sports Nuts & Other Athletic Types*, 3rd ed. McGraw-Hill, 2004.
- Lancaster, Scott, and Radu Teodorescu. *Athletic Fitness for Kids*. Human Kinetics, 2008.
- McIntosh, Ned. *Managing Little League*, 3rd ed. McGraw-Hill, 2008.
- Micheli, Lyle, and Mark Jenkins. *The Sports Medicine Bible for Young Athletes*. Source Books Inc., 2001.

Paye, Burrall, and Patrick Paye.  
*Youth Basketball Drills*, 2nd ed.  
 Human Kinetics, 2000.

Werner, Doug. *Bowler's Start-up: A  
 Beginner's Guide to Bowling*. Tracks  
 Publishing, 1995.

## Organizations and Websites

### American College of Sports Medicine

Telephone: 317-637-9200

[www.acsm.org](http://www.acsm.org)

### American Council on Exercise

Toll-free telephone: 888-825-3636

[www.acefitness.org](http://www.acefitness.org)

### Human Kinetics Coach Education

Telephone: 217-351-5076

[www.asep.com](http://www.asep.com)

### Heads Up

Information on brain injuries from  
 the Centers for Disease Control  
 and Prevention

[www.cdc.gov/HeadsUp](http://www.cdc.gov/HeadsUp)

### Institute for International Sport— National Sportsmanship Day

[www.internationalsport.org/](http://www.internationalsport.org/)

[national-sportsmanship-day](http://national-sportsmanship-day)

### National Federation of State High School Associations

Telephone: 317-972-6900

[www.nfhs.org](http://www.nfhs.org)

### National Youth Sports Health & Safety Institute

Telephone: 317-637-9200, ext. 130

[www.nyshsi.org](http://www.nyshsi.org)

### United States Olympic & Paralympic Committee

Telephone: 719-632-5551

[www.teamusa.org](http://www.teamusa.org)

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