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WELCOME TO THE ARROW OF LIGHT ADVENTURE TRAIL

The purpose of the Arrow of Light Adventure trail is to prepare you to join a Scouts BSA troop. As you're having fun, you'll complete a group of activities called *Adventures*. After completing each Adventure, you'll receive an Adventure pin that is worn on special ribbons called the Adventure Colors that attach to the right sleeve of your Cub Scout uniform shirt. You may complete as many Adventures as you like, but to earn the Arrow of Light badge of rank, you must complete all six required Adventures and at least two elective Adventures. When you complete the Arrow of Light and you are at least 10 years old, you can join a Scouts BSA troop and start on your Scouts BSA journey.



CUB SCOUT PARENT GUIDE

(This section is for your parent or legal guardian.)

Your child will get the most out of their Arrow of Light experience when you take an active part. The Arrow of Light is designed to prepare your child to join a Scouts BSA troop. This means you will interact with both the Cub Scouts and Scouts BSA programs. Cub Scouting is led by volunteer parents just like you. They come together to plan Cub Scout activities, meetings, and special events. For many, this is a great way to get to know the other families in the community. Chances are, you have a lot in common. Your children may attend the same school and may even have the same teachers. You may shop at the same grocery store, play at the same park, or even live within walking distance from each other.



GETTING STARTED AS A CUB SCOUT PARENT

- Find out who your contact person is for Cub
 Scouting. The contact person may have a specific
 title like den leader or Cubmaster, or they just
 may be an active parent. This is the person whom
 you can contact to ask questions as you are
 getting started.
- Confirm the details of the den meetings, pack meetings, and other activities. Add them to your personal and family calendars.
- 3. Plug into the communication channel that your pack and your den use. Each Cub Scout pack has different ways they communicate with parents; some have multiple ways. It may be as simple as a text message group, a communications app, or a social media page. Make sure that the contact information you give to the Cub Scout pack is accurate.
- 4. Download the free Scouting app from the Apple App Store® and Google Play™ store. The Scouting app gives parents an easy way to stay connected with their Cub Scout's progress and official records.
- 5. Read the remainder of this chapter, Cub Scout Parent Guide and the Essential Cub Scout Family Activities chapter.

WHAT IS THE ARROW OF LIGHT?

Cub Scouting is BSA's program for youth in kindergarten through fifth grade. BSA's mission is to prepare young people to make ethical and moral choices over their lifetimes by instilling in them the values of the Scout Oath and the Scout Law. This is accomplished through Scouting's aims — what we want to teach — and methods — how we teach.

The four aims of Scouting are: character, leadership, personal fitness, and citizenship.

The seven methods of Cub Scouting are: living the ideals, belonging to a den, advancement, family involvement, activities, serving the neighborhood, and the uniform.

Your child wanted to join and will stay in Scouting because it's fun. Scouting has been described as "a game with a purpose." The activities in Scouting serve a purpose deeper than just having fun, though. Activities are designed to meet the mission of the BSA.

As an Arrow of Light Scout, your child will be transitioning into Scouts BSA. Scouts BSA has the same aims as Cub Scouting, the same Scout Oath, and the same Scout Law. The methods, or how the program is delivered, are different.

The eight methods of Scouts BSA are: the ideals, patrols, outdoor programs, advancement, adult association, personal growth, leadership development, and the uniform.

For over 100 years, Scouts BSA has helped create generations of leaders and outstanding citizens by allowing boys and girls to explore their interests, serve their communities, and discover their talents through youth-led activities like hiking, camping, and volunteering.



PREPARING FOR SCOUTS BSA

Scouts BSA is led by the youth in the troop. Adult leaders provide supervision, guidance, and coaching. When you visit a Scouts BSA troop, you will find that it's different from Cub Scouting. Get to know the adult leaders of the Scouts BSA troop, and don't be afraid to ask questions. You will find that being a parent of a Scout in Scouts BSA is different. Just as your child is growing up and seeking greater independence at home, they are also expected to do things on their own in Scouts BSA.

At first it may be hard to watch your child struggle when they are trying to figure things out. Adult leaders in Scouts BSA are trained in specific methods that are safe and allow for your child to become resilient, to develop their character, and to problemsolve. They cannot solve problems if they are always presented with the solutions.

HOW SCOUTING IS ORGANIZED

Later in this book, we describe how Cub Scouting is organized in a way your Arrow of Light Scout can best understand. As an adult, we want you to have a deeper understanding of the BSA.

Think of the BSA as an upside-down pyramid. At the base of the pyramid — the smallest part — is the national organization of



the BSA. It is designed to support the sections above it. The **National Council** of the BSA is led by a volunteer group called the National Executive Committee along with the

chief executive officer, or the **Chief Scout Executive**. Additional volunteers and staff members make up the National Council, which includes departments such as Scout shops, program development, information technology, and safety.

The next part of the pyramid is your local council, a geographic territory that the National Council has granted permission to deliver Scouting programs within that area. The local council is also led by a volunteer group and a council executive committee, along with a chief executive officer called the **Scout executive**.

On the left sleeve of the Cub Scout uniform is a patch that identifies your local council.

Some councils create geographic areas called **districts**. Districts are designed to provide service

and support to local Scouting programs in the designated area. A district committee made up of volunteers does this work and is often supported by a staff member called a **district executive**.

At the top of the pyramid — the largest part — are the local Scouting programs. Local councils partner with community organizations, called chartered organizations, to deliver Scouting

programs. Chartered organizations have an annual agreement with the local council to sponsor one or more Scouting programs.

If a chartered organization wants to have a Cub Scout program, it organizes what is called a Cub Scout **pack**. Packs are organized to best serve the families to whom the chartered organization is looking to deliver the program. Often, this is a school, neighborhood, or community. Your Cub Scout pack is identified with a number. On the Cub Scout uniform, there is a place to put your pack number on the left sleeve under the council patch.

The **chartered organization representative** is just that, the person designated to represent the organization that has an agreement with the local council to deliver the Scouting program. The chartered organization approves all those who volunteer to be leaders in the pack, usually parents of Cub Scouts. Each pack has a pack committee made up of leaders and parents led by the **pack committee chair**. This volunteer, usually a parent, organizes the adults to plan and deliver the Cub Scouting program.

The **Cubmaster** is a volunteer, usually a parent, who coordinates the delivery of the program to the youth of all ages at the pack level, with the help of **assistant Cubmaster(s)** and other parents. In a Scouts BSA troop, the **Scoutmaster** is a volunteer, usually a parent, who works with the troop's youth leadership to deliver the program.

A Cub Scout pack is made up of small groups called **dens** though Arrow of Light Scouts form small groups called **Arrow of Light patrols** to prepare them for Scouts BSA. How dens are formed is up to the pack. Packs ultimately form dens and patrols in a way that best serves the families in the pack. While dens may be co-ed, Arrow of Light patrols are single-gender to prepare

Arrow of Light Scouts to join the single-gender programs of Scouts BSA.

Dens and Arrow of Light patrols are led by a volunteer **den**leader and assistant den leader, usually a parent. The den leader coordinates meetings and activities centered around Cub Scout Adventures. Adventures are made up of a group of activities. When the required activities for each Adventure are completed, the Cub Scout receives an Adventure pin that attaches to a group of ribbons called the Adventure Colors, worn on the uniform.

A Scouts BSA troop creates small groups called **patrols**. How patrols are formed is up to the youth in the troop. A troop may form a patrol of all new Scouts, or they may place new Scouts into existing patrols. Patrols are led by a youth who is elected by the other members of the patrol; this position is called the **patrol leader**. How patrol leaders are elected and how often elections are conducted is determined by the youth in the troop.

Advancement refers to the progress your Cub Scout is making toward their badge of rank. Cub Scouts work only on the badge of rank associated with their grade level. For fifth grade, this is the **Arrow of Light** badge of rank. Your Scout earns their Arrow of Light badge of rank by completing the six required Adventures and two elective Adventures. Scouts may not work on a badge of rank for an earlier grade level.

In Scouts BSA, advancement no longer progresses by grade. Instead, each Scout works at their own pace with support from youth leaders and adult volunteers. Advancement in Scouts BSA is progressive, meaning your Scout must earn ranks in the proper order, each building on what was learned before. In Scouts BSA, parents may not sign off or approve requirements.

Your Arrow of Light Scout may not work on any requirements for Scouts BSA, the Scout badge of rank, or merit badges until they have joined a Scouts BSA troop.

The **crossover ceremony** is a special ceremony the Cub Scout pack plans with the Scouts BSA troops that the Arrow of Light Scouts are joining. The program is designed for this to happen in January, February, or March. This time period allows for you and your child to become familiar with the leadership and membership of the Scouts BSA troop and to fully participate in preparing for Scouts BSA summer camp.

Scouts BSA summer camp is a weeklong camping experience conducted by a local BSA council. Scouts BSA troops often plan what summer camp they are attending a year in advance. The camp your Scouts BSA troop decides to attend may be local or in another state. Payments are often required for each Scout to attend. Troops may provide fundraising opportunities for Scouts. As soon as possible, ask about your Scouts BSA troop's plan for summer camp and what you can do to prepare physically and financially.

For an adult to attend a **Scouts BSA camping** activity, they are required to register in a fully-paid position as a volunteer with the Scouts BSA troop and complete Youth Protection training. The purpose of Scouts BSA camping is different from Cub Scout camping. Scouts BSA camping is focused on youth developing their skills and leadership. This is done using the **patrol method**. In addition to completing Youth Protection training, adults on Scouts BSA campouts need to be familiar with the patrol method and understand their role during the campout. While registered volunteers are often parents, their role in Scouts BSA is to provide supervision and guidance to the entire troop's youth. Adults sleep in separate tents than the youth, who set up their campsites by patrols.

ESSENTIAL CUB SCOUT FAMILY ACTIVITIES

The Cub Scout program is designed for you to share adventures together. Be active, have fun, and enjoy the moments you have together. As an adult, you will also make new friends and have opportunities to try new things.

Cub Scouting is a holistic program; the positive impact works best when incorporated into your home. One way to do this is to be familiar with the Scout Oath and the Scout Law and look for ways to recognize your Cub Scout when they are following these values.



ADVENTURE REQUIREMENTS TO DO AT HOME

Most Adventure requirements will be completed with your Arrow of Light patrol or pack, but the following requirements are designed to be done at home. Let your den leader know when you have completed them with your Scout.

BOBCAT

Requirement 7 — At home, with your parent or legal guardian, do the activities in the booklet "How to Protect Your Children from Child Abuse: A Parent's Guide."

PERSONAL FITNESS

Requirement 4 — Review your BSA Annual Health and Medical Record with your parent or legal guardian. Discuss your ability to participate in pack and patrol activities.

DUTY TO GOD

Your den leader may ask that you complete all requirements for this Adventure at home. See the requirements on page 133.

THE ARROW OF LIGHT

The Arrow of Light is a symbol that shows a Cub Scout's willingness and preparedness to join a Scouts BSA troop and a commitment to live by the Scout Oath and the Scout Law. The arrow on the Arrow of Light badge of rank represents being true, an arrow that is straight and flies where it is aimed. A Scout aims to live by the Scout Oath and the Scout Law and stays true to



them. The seven rays from the arrow represent the seven days of the week and are a reminder that a Scout lives by the Scout Oath and the Scout Law all the time, not just during Scout meetings. When a Scout is true and lives by the Scout Oath and the Scout Law, they are a light of hope and inspiration to others.



When you join a Scouts BSA troop, you'll continue to wear the Arrow of Light as a symbol of your commitment to living by the Scout Oath and the Scout Law every day. If you continue as an adult leader in Scouting, you may wear the Arrow of Light as a square knot with a yellow border with one red string and one green string to form the knot.

YOUR CUB SCOUT PACK

You and your family are part of a Cub Scout pack. A pack is made up of several families that are part of Cub Scouting in your community. A pack includes Cub Scouts who are in kindergarten through fifth grade. Packs will get together for activities, meetings, and outings. The adult leader of the pack is called the **Cubmaster**. To make Cub Scouting more fun, packs form small groups called dens.



YOUR ARROW OF LIGHT PATROL

To prepare you for Scouts BSA, instead of forming a den like the other Cub Scouts in your pack, you'll form a patrol. Your patrol must be a single-gender group to prepare you for joining a Scouts BSA troop.



Your patrol is your group where you make new friends and earn Adventures as you work toward earning your Arrow of Light badge of rank. Each Arrow of Light patrol is a little different. In the Bobcat Adventure you will learn more about patrols. Most of your activities will be with your patrol, and you'll also start to know a local Scouts BSA troop. The adult leader of the Arrow of Light patrol is called the **den leader**.

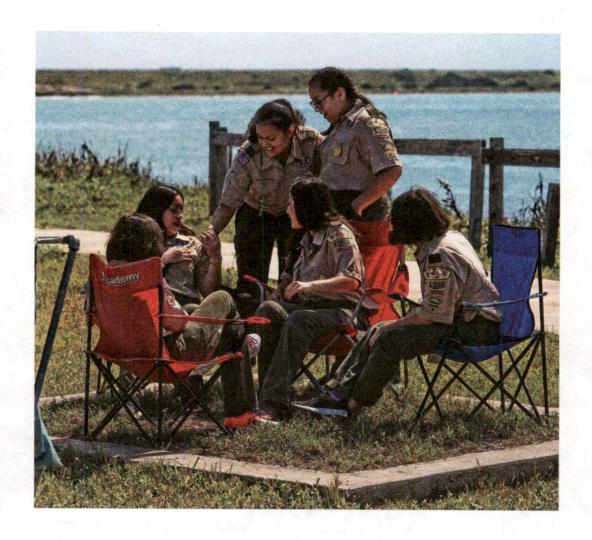
YOUR SCOUTS BSA TROOP

When you join Scouts BSA, you will become part of a Scouts BSA troop. A troop is made up of Scouts in your community who are as young as 10 and under 18 years old. The troop will plan and conduct campouts, activities, and meetings. Patrols are formed to give youth leadership opportunities and experience. The lead adult volunteer, selected to guide and advise the troop's youth leadership, is called the **Scoutmaster** and is assisted by other adult volunteers called **assistant Scoutmasters**. The youth leader of a troop is called the **senior patrol leader**. A troop forms small groups called patrols to make planning and conducting Scouting activities easier and to give you opportunities to practice leadership.



YOUR SCOUTS BSA PATROL

A patrol is a small team of normally six to eight Scouts who learn skills together, share responsibilities, and take on leadership roles. A Scouts BSA troop is made up of several patrols. Each patrol elects a member to serve as their patrol leader. The patrol leader represents the patrol at the patrol leader's council, where they and the senior patrol leader meet regularly to plan campouts, meetings, and other activities with the guidance of the adult Scoutmaster and assistant Scoutmasters.



YOUR ARROW OF LIGHT AND SCOUTS BSA SCOUTING ADULT LEADERS

You will see adults in Cub Scouting and Scouts BSA; some you'll be able to recognize right away because they are wearing a uniform. Other adults may be part of the Cub Scout pack or Scouts BSA troop but do not wear a uniform. As a Scout, always be respectful to adults in your Cub Scout pack and Scouts BSA troop.

At no time is any adult, other than your parent or legal guardian, to be alone with you.



YOUR ARROW OF LIGHT AND SCOUTS BSA UNIFORM

Wearing your uniform shows everyone that you're a Scout. Think of it as being part of one of the largest

teams in America. Wear your uniform to pack meetings, patrol meetings, and special activities when you're with other Scouts. There are times when you're going to get dirty in Scouts; for those times, it's OK to wear a Scout T-shirt.

To prepare you for Scouts
BSA, the Arrow of Light uniform
includes the tan Scouts BSA shirt,
green Scout bottoms (shorts,
pants, or skort), a green Scout
belt, and green Scout socks.
There is no Arrow of Light hat

or neckerchief; instead, your Arrow of Light patrol will decide if you

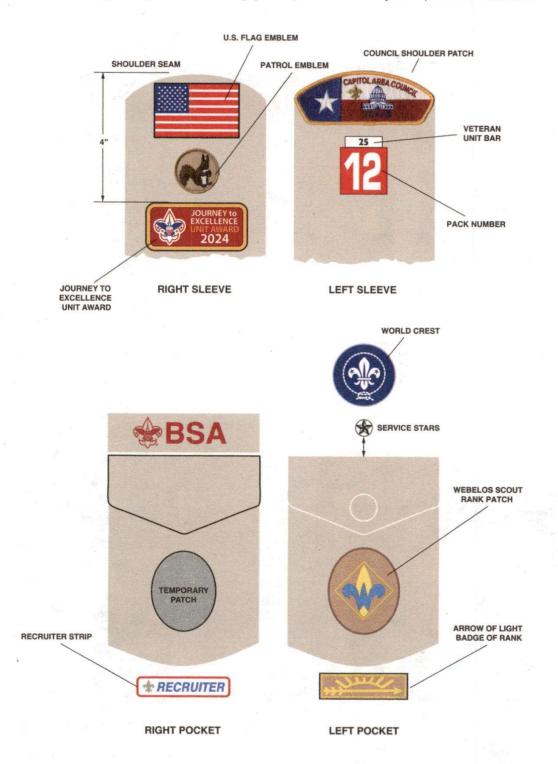
want to have a hat and/or a neckerchief as part of your uniform.

As an Arrow of Light Scout, you also get to wear Adventure Colors, a group of yellow, green, and red ribbons attached to a metal clasp. As you earn your Arrow of Light Adventure pins, you'll attach them to the Adventure Colors. There is no order or specific color as to where you place the Adventure pins. The Adventures Colors go on your right sleeve.



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The pictures below show you where to put badges of rank and patches on your tan Scouts BSA shirt. You might receive a patch for attending a special event like a campout or for selling popcorn. These are examples of "temporary insignia" and should be worn centered on the right pocket. Sometimes these patches come with a-button loop so you can hang your patch from your pocket button.



THE ARROW OF LIGHT ADVENTURE TRAIL

The Cub Scout activities that you do with your patrol, pack, or family are called Adventures. Each Adventure has a number of things you do to complete that Adventure, called requirements. You'll have fun completing the requirements with the help of your patrol, pack, and family.

When you complete a requirement for an Adventure, have your den leader confirm that you did your best by initialing the requirement in your handbook like in the sample below.

REQUIREMENTS

Approved by

1. Get to know the members of your den.

When you complete an Adventure, you'll receive a special pin to place on your Adventure Colors. It's fun to earn as many Adventures as you can.

Most of the Adventures you do will be with your patrol. Your Cub Scout pack may also plan some activities that will help you earn an Adventure. You can complete requirements for Adventures at home with your family, but your den leader approves the completion of the requirement(s).

If you complete an Adventure, or a requirement for an Adventure outside of your patrol meeting, inform your den leader. Your den leader must approve all Adventure requirements, after which you'll be recognized for earning them.

To earn your Arrow of Light badge of rank, you must complete the six required Adventures and at least two elective Adventures that appear in this book. There are 16 elective Adventures to choose from.

Once you and your patrol complete your Arrow of Light badge of rank, your pack, with the assistance of the Scouts BSA troop you join, should conduct a crossover ceremony for you and your fellow Arrow of Light Scouts. This special event will highlight your experiences in Cub Scouting, recognize your accomplishments, and celebrate you joining a Scouts BSA troop.

REQUIRED ADVENTURES

Every Cub Scout Adventure Trail starts
with the required Bobcat Adventure. All Arrow of Light
Scouts earn the Bobcat Adventure.

Must complete each of the six required Adventures



Bobcat (Character & Leadership)



Outdoor Adventure (Outdoors)



Fitness (Personal Fitness)

Personal



Citizenship (Citizenship)



First Aid (Personal Safety Awareness)

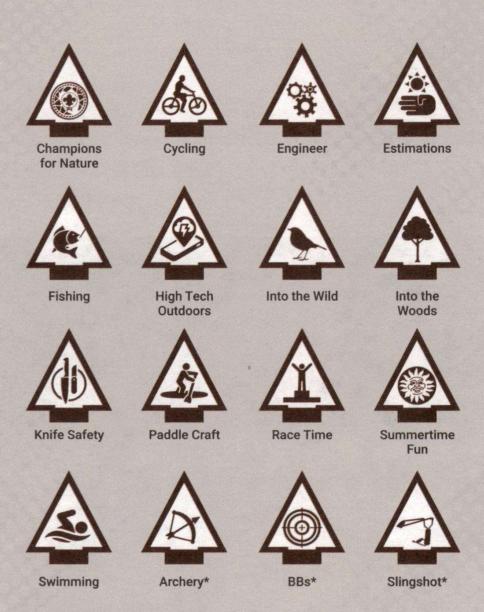


(Family & Reverence)

ELECTIVE ADVENTURES

There are 16 Arrow of Light elective Adventures. You can earn as many electives as you want, but you do need at least two in addition to the six required Adventures to earn your Arrow of Light badge of rank.

Must complete at least two elective Adventures



Special Elective Adventures

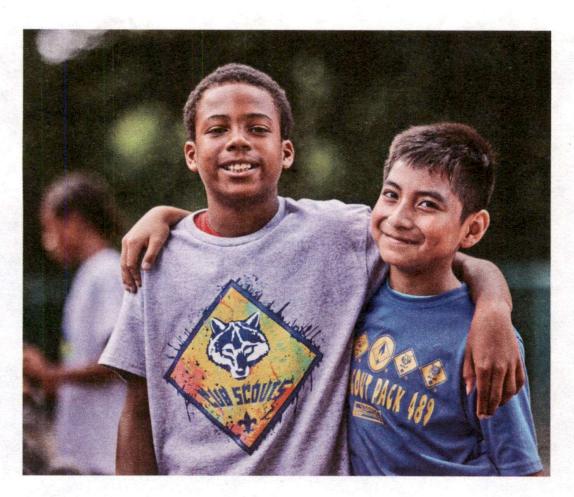
* These Arrow of Light elective Adventures can be earned only at an event sponsored by the local council or district.

THE BUDDY SYSTEM

The buddy system is when two Cub Scouts work together, share, and keep each other safe. Your den leader decides how buddies are paired. If there is an odd number of Cub Scouts, you can have a buddy group of no more than three.

Having a buddy is especially important when you are doing an activity outdoors, particularly near or on the water.

When you have a buddy, you are not to let your buddy out of your sight. As buddies you are friends, so remember the points of the Scout Law to be friendly, courteous, and kind to each other. You keep each other safe by following any rules or instructions for the activity.



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THE SCOUT BASIC ESSENTIALS

The Scout Basic Essentials can make every outdoor adventure better. In an emergency, they can help you get out of a jam.

POCKETKNIFE

As an Arrow of Light Scout, you must complete the Knife Safety Adventure before you may carry a pocketknife, even if you completed the Whittling Adventure as a Bear Cub Scout and/or the Chef's Knife Adventure as a Webelos. A pocketknife truly is a multipurpose tool with hundreds of uses. It can cut a rope, open a can, whittle a tent stake, punch a hole in a belt, or slice a biscuit for breakfast at a campsite. It's also handy for tightening a screw on a pack frame or camp stove and for making wood shavings to start a fire. Pocketknives come in a variety of sizes and styles. A good general-use pocketknife has a can opener, a screwdriver, and one or two blades for cutting, but some knives also include scissors, magnifying glasses, and other tools. A multitool is an

elaborate version of the pocketknife that unfolds to reveal a dozen or more tools. Bigger is not always better. On most campouts, you're unlikely to need a wire stripper, magnifying glass, hex screwdriver, or fish scaler — and it's not much fun to carry around a knife



that weighs half a pound. When you join a Scouts BSA troop, you will be required to earn the Totin' Chip before you can use a pocketknife during a Scouting activity. The Totin' Chip requirements also include knowing and understanding the proper use of a saw and axe.

RAIN GEAR

Even when there is no chance of rain, you should pack rain gear. Like your other Scout Basic Essentials, you should always have them packed and ready to go. Staying dry in the outdoors is an important part of being comfortable and having a good time.

Wearing or carrying rain gear such as a poncho or rain parka, rain pants, gaiters, and a hat can also add to your safety, because dry clothing will keep you much warmer than shirts, pants, and jackets that have become wet.

Poncho — A poncho is a waterproof cape that can protect you from summer rains. Because a poncho is loose-fitting and can flap in the wind, it may not be the best choice for severe weather or for winter travel. On the plus side, many ponchos are big enough to also cover your backpack.



Rain Parka — A rain parka is a long jacket that repels rain, sleet, and snow. It should have a hood that you can pull over your head.

Rain Pants — Rain pants extend the protection of a poncho or parka down to your ankles.

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Gaiters — Gaiters can shield your feet and lower legs from rain. During winter hikes, they'll help keep snow out of your boots.

Hat — A broad-brimmed hat protects your face and neck from sun and from storms. If you wear eyeglasses, the brim of a hat can keep them clear when it's raining.

TRAIL FOOD

A small bag of granola, some raisins and nuts, or a couple of energy bars can give you a boost when you get hungry on the trail. High-energy foods are especially important if you are out longer than you had expected.

FLASHLIGHT

If you are going out for a walk during the day, you may think that having a flashlight isn't that important. A flashlight is part of the Scout Basic Essentials because it is better to have it and not need it than it is to need it and not have it.

When deciding what kind of flashlight to bring, remember you have to carry it. There are some you carry in your hands, some that you wear on your head, and even some that you wear around your neck.

You also want to consider how your flashlight is powered. If it uses batteries, what type does it need? Do the batteries come with the flashlight? Is it easy to replace the batteries?

An LED flashlight will cast a strong beam with just one or two AA batteries. LED headlamps are a good option, too, because they leave your hands free. It's a good idea to carry spare batteries with you, and reverse the

batteries in your flashlight during the day to prevent the light from accidentally turning on in your pack and draining the power.

When using your flashlight, remember to keep it pointed down and not at someone's face.



FIRST-AID KIT

Your patrol leader or a Scouts BSA troop adult volunteer will bring a group first-aid kit on most Scout trips, but you should also carry a few personal supplies to treat blisters, small cuts, and other minor injuries. Carry a personal first-aid kit on hikes and campouts. You can put everything in a resealable plastic bag and take it with you whenever you set out on a Scout adventure. Here are some important things to have:

- ▶ 6 latex-free adhesive bandages in assorted sizes
- ▶ 2 sterile 3-by-3-inch gauze pads
- ► A small roll of latex-free adhesive tape
- ► A 3-by-6-inch piece of moleskin
- ➤ A small bar of soap or small bottle of alcohol-based handsanitizing gel
- ► A small tube of triple first-aid ointment* (optional)
- ► A small tube of hydrocortisone cream* (optional)
- ▶ Scissors
- ▶ Tweezers
- ▶ Disposable latex-free gloves
- ► CPR breathing barrier
- ▶ Pencil and paper or small notebook

*Some people are allergic to antibiotics and hydrocortisone creams. Be sure to ask permission before applying either of these ointments for first aid.

Why use latex-free gloves, adhesive bandages, and other supplies? Because some people are allergic to latex. Touching it can cause them to experience mild to severe allergic reactions ranging from itching and skin redness to difficulty breathing and even anaphylactic shock.

SCOUT FIRST AID KIT

SUN PROTECTION

Just like you need water when it's hot or cold outside, you need sun protection in all types of weather. You can protect yourself from the sun by wearing appropriate clothing and using sunscreen.

Sunscreen and some clothes indicate a sun protection factor, or SPF. The higher the SPF number, the more protection the sunscreen or clothing will provide from the sun's damaging rays. The SPF number is not related to how long you can stay out in the sun. The effect the sun has on your skin can be different based on the time of year, time of day, and what type of skin you have.

Guard your skin by applying a good sunscreen (SPF 30 or greater) and wearing a broad-brimmed hat, sunglasses, and lip balm that contains sunscreen ingredients. To provide good sun protection, your hat should cover not only your head, but also your ears and neck. If your hat doesn't cover your ears or neck, make sure to apply sunblock to those areas.

When using sunscreen, always follow the directions on the container, and know if your sunscreen is waterproof or sweatproof. Apply sunscreen 20 minutes before you hit the trail and every two hours after that — more often





MAP AND COMPASS

A map and a compass can show you the way in unfamiliar areas. Learn the basics and then enjoy practicing with a compass and a map when you are in the field.

Maps we use today are often digital, and as long as you have a signal, they're great. You may find yourself on a trail that has little or no signal. In those situations, you want to have available a printed map of the trail you're going to follow.

Compasses are basic tools that work with the Earth's natural magnetic field and will make the compass needle point north. A compass doesn't tell you where you are; it only tells you what direction north is. A good compass has a needle that is encased in fluid and has a dial that easily rotates. It should have a baseplate that has scales and a direction-of-travel arrow on it that will allow you to easily place it flat on a map. A good compass will also have orienteering lines (parallel lines) that help you orient the compass with a map. Finally, a good compass will have a cord attached to it so you can wear it around your neck or attach it to your backpack.

MATCHES AND FIRE STARTERS

Before a Scout can use or carry matches they must earn the Firem'n Chit. This certification grants a Scout the right to carry fire-lighting devices (matches, lighters, etc.) to build campfires. With strike-anywhere matches or a butane lighter, you can light a stove or kindle a fire in any weather. Fire starters can be



store-bought, homemade, or collected from a campout. Protect matches and other fire starters from moisture by storing them in a self-sealing plastic bag or canister.



Before you can use matches or fire starters you must first earn the Firem'n Chit. You may want to ask for help from your local Scouts BSA Troop. If you earn this certification as an Arrow of Light

Scout you will be required to earn it again in Scouts BSA before you are permitted to use matches or fire starters in Scouts BSA.

Firem'n Chit Requirements – The Scout must show their Scout leader, or someone designated by their leader, an understanding of the responsibility to do the following:

- ▶ I have read and understand use and safety rules from the Scouts BSA Handbook.
- ▶ I will build a campfire only when necessary and when I have the necessary permits (regulations vary by locality).
- ▶ I will minimize campfire impacts or use existing fire lays consistent with the principles of Leave No Trace. I will check to see that all flammable material is cleared at least 5 feet in all directions from fire (total 10 feet).

- ▶ I will safely use and store fire-starting materials.
- ▶ I will see that fire is attended to at all times.
- ► I will make sure that water and/or a shovel is readily available. I will promptly report any wildfire to the proper authorities.
- ▶ I will use the cold-out test to make sure the fire is cold out and will make sure the fire lay is cleaned before I leave it.
- ▶ I follow the Outdoor Code, the Guide to Safe Scouting, and the principles of Leave No Trace and Tread Lightly!

The Scout's "Firem'n Rights" can be taken away if they fail in their responsibility.

WATER BOTTLE

Always take along at least a 1-quart bottle filled with water. On long hikes, on hot days, in arid regions, and at high elevations, carry two bottles or more.

No matter the weather or activity, your body always needs plenty of water to keep it going. You always carry water with you when you're going outside to replace the water your body loses by sweating and even just breathing. Have you ever seen your breath when it's cold outside? That's water your body has lost!

When your body has lost too much water, it will tell you it needs water in different ways. You'll feel thirsty, get a headache, or even get a stomachache.

Get in a good habit of drinking water when you plan to be outside. Drink before you start an activity, take small drinks during your activity, and drink again when you're finished. It is better to take a lot of small drinks than to drink a large amount all at once.

How do you know if you're drinking enough water? One way is by checking your urine (pee). Your urine should be clear and light. If



it's yellow, your body could use more water. If it's dark yellow, your body needs more water.

Plastic water bottles are the most popular way to carry water. These come in all shapes and sizes. When choosing a plastic water

bottle, think about how you'll carry it and how much water it will hold. Another important part of a plastic water bottle is how you drink from it. Some have straws, some have a valve, and others have just an opening with a screw cap.

Some backpacks are designed to carry a water bladder with a flexible straw attached. These make drinking water easy and gives you a place to carry your other Scout Basic Essentials.

It is best to keep water only in your water bottle or water bladder. Make sure to wash it after each use to keep it fresh and clean so your water always tastes good.



Depending on your destination, the length of your trip, and the season, other essential items may include insect repellent, a whistle, and other items, such as water treatment tablets. Remember the Scout motto and Be Prepared.

WHAT TO DO IF YOU GET LOST — STOP

One day you might accidentally wander off a trail and be unsure how to find it again. Or you may take a wrong turn and not know which way to go. If you think you're lost, stop where you are and follow the four steps that spell STOP.

STAY CALM. THINK. OBSERVE. PLAN.

Stay calm. Sit down and have some water and something to eat. If you're cold, put on a jacket or sweater. Breathe slowly and relax.

Think. Try to remember how you got where you are. If you have a map, open it and see what you can learn from the symbols and contour lines.

Observe. Look for your footprints in soft ground or snow. Notice any landmarks that can be clues to your location. Listen for sounds of other Scouts.

Plan. If you're convinced that you know which way to go to get back on track, move carefully. Use a compass to set a bearing in the direction of your destination. Then clearly mark the way you're going with broken branches, piles of stones, or whatever else is handy in case you need to find your way back to the spot where you've been sitting. If you don't have a clear idea where you are, though, stay right where you are. People will start looking for you as soon as someone realizes you're missing.

THE OUTDOOR CODE

The outdoors is a focus of Cub Scouting. For more than 70 years, the Outdoor Code has been a guide for Scouts in the outdoors. Remember to do your best by showing respect for the outdoors and by learning and upholding the Outdoor Code.

As an American, I will do my best to:

Be clean in my outdoor manners.

A Cub Scout takes care of the outdoors and keeps the outdoors clean. A Cub Scout knows that putting marks on buildings, trees, or natural objects causes permanent damage.

· Be careful with fire.

A Cub Scout may enjoy a campfire only with adult leaders. A Cub Scout knows not to play with matches and lighters.

· Be considerate in the outdoors.

A Cub Scout shares our outdoor places and treats everything on the land and in the water with respect.

· Be conservation-minded.

A Cub Scout works to restore the health of the land so others may enjoy, live, and learn from it as a part of the Web of Life.

LEAVE NO TRACE PRINCIPLES FOR KIDS

As a Cub Scout, you'll learn to use the Leave No Trace Principles for Kids to help you take care of the outdoors.



1. KNOW BEFORE YOU GO

- Be Prepared! Don't forget clothes that protect you from cold, heat, and rain.
- Use maps to show you where you'll be going so you won't get lost.
- Learn about the area you visit. Read books and talk to people before you go. The more you know, the more fun you'll have.

2. CHOOSE THE RIGHT PATH

- Stay on the main trail to protect nature, and don't wander off by yourself.
- Steer clear of flowers or small trees. Once hurt, they may not grow back.
- Use existing camp areas and camp at least 100 big steps from roads, trails, and water.

3. TRASH YOUR TRASH

- Pack it in, pack it out. Put litter, even crumbs, in trash cans or carry it home.
- Use bathrooms or outhouses when available. If you have to "go," act like a cat and bury poop in a small hole 4-8 inches deep and 100 big steps from water.
- Place your toilet paper in a plastic bag and put the bag in a garbage can back home.
- Keep water clean. Do not put soap, food, or poop in lakes or streams.

4. LEAVE WHAT YOU FIND

- Leave plants, rocks, and historical items as you find them so the next person can enjoy them. Treat living plants with respect. Hacking or peeling plants can kill them.
- Good campsites are found, not made. Don't dig trenches or build structures in your campsite.

5. BE CAREFUL WITH FIRE

- Use a camp stove for cooking. It's easier to cook on and clean up than a fire.
- Be sure it's OK to build a campfire in the area you're visiting.
 Use an existing fire ring to protect the ground from heat.
 Keep your fire small. Remember, campfires aren't for trash or food.
- Do not snap branches off live, dead, or downed trees.
 Instead, collect loose sticks from the ground.
- Burn all wood to ash, and be sure that the fire is completely out and cold before you leave.

6. RESPECT WILDLIFE

- Observe animals from a distance and never approach, feed, or follow them. Human food is unhealthy for all animals, and feeding them starts bad habits.
- Protect wildlife and your food by storing your meals and trash.
- Control pets at all times, or leave them at home.

7. BE KIND TO OTHERS

- Make sure the fun you have in the outdoors does not bother anyone else. Remember that other visitors are there to enjoy the outdoors.
- Listen to nature. Avoid making loud noises or yelling. You will see more animals if you are quiet.

Remember – you'll enjoy nature even more by caring for your special place.



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BOBCAT

CHARACTER & LEADERSHIP



SNAPSHOT OF ADVENTURE



The Bobcat Adventure will get you and your patrol off to a great start. In this Adventure, you'll learn about things like the Scout slogan and the patrol method. And you'll visit a Scouts BSA troop.

REQUIREMENTS	Approved by
 Demonstrate the patrol method by choosing a patrol name and electing a patrol leader. Discuss the benefits of using the patrol method. Get to know the members of your patrol. Recite the Scout Oath and the Scout Law with your patrol. With your patrol, create a code of conduct. Demonstrate the Scouts BSA sign, Scouts BSA salute, and Scouts BSA handshake. Show how each is used. Learn the Scouts BSA slogan and motto. With your patrol, or with your parent or legal guardian, visit a Scouts BSA troop. 	
8. At home with your parent or legal guardian, do the activities in the booklet "How to Protect Your Children From Child Abuse: A Parent's Guide."	



- Required Adventure
- Scan for this Adventure page

Demonstrate the patrol method by choosing a patrol name and electing a patrol leader. Discuss the benefits of using the patrol method.



Your patrol is the basic team you'll work with in a Scouts BSA troop. Your patrol will work together, cook together, camp and hike together, and celebrate successes together.

Your patrol will select its own name, make its own flag, come up with its own yell, and elect its own leader. In a Scouts BSA troop the patrol leader represents the patrol to a group called the patrol leaders' council. The council is the group that plans the troop meetings and outings. If your patrol wants to learn about geocaching, for example, your patrol leader will take that idea to

the patrol leaders' council, which will vote on it. Your patrol can also plan its own activities. Sometimes, these will be part of a bigger troop outing, like a day hike during a weekend campout.

A well-functioning patrol is what makes a Scout troop work.

PATROL SPIRIT

Patrol spirit is the glue that holds the patrol together and keeps it going. Your patrol will develop spirit as you enjoy experiences together. Your name, flag, and yell help give your patrol a unique identity.

- ▶ Patrol name Every patrol needs a good name, one that really describes what the patrol is all about. If your members like to swim, you might become the Sharks. If you're all into science fiction, you might become the Alien Patrol.
- ▶ Patrol flag Your flag is your trademark. It shows your patrol name, emblem, Scouts BSA troop number, and the names of your members. As you win competitions, you can hang ribbons from it as reminders of your accomplishments.
- ▶ Patrol yell Your yell lets other patrols know you've arrived. It should be short and fun and reflect your patrol's goals. Some patrols also have a patrol song. It's easy to make one up if you use a melody that everyone already knows.

Arrow of Light Patrol Leader

As an Arrow of Light patrol leader, you assist the den leader during patrol meetings and other activities. Your den leader is still in charge, and at no time is the Arrow of Light patrol leader to be given responsibility over other youth. Your den leader will decide how the patrol leader will be elected.

The den leader decides what the Arrow of Light patrol leader will help with, and that may change for each meeting. Here are some examples of things that an Arrow of Light patrol leader may be asked to do:

- ► Arrive early to help set up the meeting.
- ▶ Welcome everyone when they arrive at the patrol meeting.
- ▶ Lead the patrol in reciting the Scout Oath and the Scout Law.
- ► Carry the United States flag during the opening.
- ▶ Pick a game for the patrol to play.
- ► Help hand out supplies for an activity.
- ► Stay after the meeting to help clean up.

If you're elected to be the Arrow of Light patrol leader, do your best to set an example for the other Scouts by acting by the Scout Oath and the Scout Law. This is the greatest responsibility of an Arrow of Light patrol leader. This is called leadership by example. One way you can do this is to be friendly to everyone in the patrol and offer to help another Scout who may need it.

Get to know the members of your patrol.

Getting to know others is one way to live by the Scout Oath and the Scout Law. When you get to know other people, you're being friendly. It is also a way to practice being courteous, kind, cheerful, and even brave.

Your Arrow of Light patrol may have Scouts who you know from last year, there may be some new Scouts, or you may be new to Scouting. These are all good reasons why one of the first



things you should do is get to know everyone in your patrol. If you have a new Scout join your patrol later on, you and everyone in the patrol should make sure to make them feel welcome and get to know them, too.

If you don't know someone in your patrol, here are some things you can do to get to know them:

Introduce yourself. "Hi, my name is_____. What is your name?" Ask them, "What are some things that you like to do?"

Tell them about the things you like to do.

Some people are shy. They may find it hard to interact with others and tend to stay away from the group. Be respectful of that, being friendly and inclusive with that person as best as you can. You may find that they may eventually decide to join you.

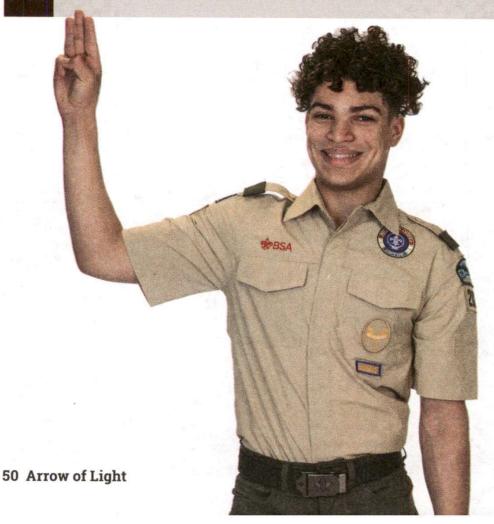
Remember a Scout is friendly and kind. Next thing you know, you may have a new friend.

Recite the Scout Oath and the Scout Law with your patrol.

Scouts learn an amazing number of things about camping, nature, first aid, and more. Some of the most important things are on the next few pages. The Scout Oath and the Scout Law will guide your steps long after you hang up your hiking boots.

SCOUT OATH

On my honor I will do my best
To do my duty to God and my country
and to obey the Scout Law;
To help other people at all times;
To keep myself physically strong,
mentally awake, and morally straight.



On my honor ... Honor is the core of who you are — your honesty, your integrity, your reputation, the ways you treat others, and how you act when no one is looking. By giving your word at the outset of the Scout Oath, you are promising to be guided by its ideals.

I will do my best ... Do all you can to live by the Scout Oath, even when you are faced with difficult challenges. Measure your achievements against your own high standards, and don't be influenced by peer pressure or what other people do.

To do my duty ... Duty is what others expect of you, but more importantly, it is what you expect of yourself.

to God ... Your family and religious leaders teach you about God and the ways you can serve. You can do your duty to God by following the wisdom of those teachings and by defending the rights of others to practice their own beliefs.

and my country ... Help the United States continue to be a strong and fair nation by learning about our system of government and your responsibilities as a citizen. When you do all you can for your family and community, you are serving your country. Making the most of your opportunities will help shape our nation's future.

and to obey the Scout Law; ... In your thoughts, words, and deeds, the 12 points of the Scout Law will lead you toward doing the right thing throughout your life. When you obey the Scout Law, other people will respect you for the way you live, and you will respect yourself.

To help other people at all times; ... Your cheerful smile and helping hand will ease the burden of many who need assistance. By helping out whenever you can, you are making the world better. "At all times" is a reminder to help even when it is difficult and even if you haven't been asked.

To keep myself physically strong, ... Taking care of your body prepares you for a lifetime of great adventures. You can build your body's strength and endurance by eating nutritious foods, getting enough sleep, and being active. You should also avoid tobacco, alcohol, illegal drugs, and anything else that might harm your health.

mentally awake, ... Develop your mind both in and outside of the classroom. Be curious about everything around you, and never stop learning. Work hard to make the most of your abilities. With an inquiring attitude and the willingness to ask questions, you can learn much about the world around you and your role in it.

and morally straight. Your relationships with others should be honest and open. Respect and defend the rights of all people. Be clean in your speech and actions and faithful in your religious duties. Values you practice as a Scout will help you shape a life of virtue and self-reliance.

THE SCOUT LAW

A Scout is trustworthy, loyal, helpful, friendly, courteous, kind, obedient, cheerful, thrifty, brave, clean, and reverent.

The Meaning of the Scout Law

The Scout Law has 12 points. Each is a goal for every Scout. A Cub Scout agrees to live by the Scout Law every day, not just when they are at a Cub Scout meeting. It's not always easy to do, but a Cub Scout always does their best.

A Scout is trustworthy. A Scout tells the truth. A Scout is honest and keeps promises. People can depend on a Scout. Trustworthiness will help you make and maintain good friendships. As you demonstrate that you are trustworthy, you are showing your character — the person you are on the inside. If your judgment fails and you make a mistake, your good character will be what helps you quickly admit it and make good on any damage. Adults and your peers alike will know that they can rely on you to do your best in every situation. Living in this way also means that you can trust yourself.

A Scout is loyal. A Scout is loyal to those to whom loyalty is due. Loyalty can be shown everywhere: at home, in your Scouts BSA troop and patrol, among your classmates at school. You can also express loyalty to the United States when you respect the flag and the government. Give real meaning to your loyalty by helping to improve your community, state, and nation.

A Scout is helpful. A Scout cares about other people. A Scout helps others without expecting payment or reward. A Scout fulfills duties to the family by helping at home. Scouts want the best for everyone and act to make that happen. While a Scout might work for pay, a Scout does not expect to receive money for being helpful. A Good Turn that is done in the hope of getting a tip or a favor is not a Good Turn at all.

A Scout is friendly. A Scout is a friend to all other Scouts. A Scout offers friendship to people of all races, religions, and nations, and a Scout respects them even if their beliefs and customs are different. If you are willing to be a good friend, you will find friendship reflected back to you. Friends also are able to celebrate their differences, realizing that real friends can respect the ideas, interests, and talents that make each person special.

A Scout is courteous. A Scout is polite to people of all ages and positions. A Scout understands that using good manners makes it easier for people to get along. Being courteous shows that you are aware of the feelings of others. The habits of courtesy that you practice as a Scout will stay with you throughout your life.

A Scout is kind. Scouts treat others as they want others to treat them. A Scout knows there is strength in being gentle. A Scout does not harm or kill any living thing without good reason. Kindness is a sign of true strength. To be kind, you must look beyond yourself and try to understand the needs of others. Take time to listen to people and imagine being in their place. Extending kindness to those around you and having compassion for all people is a powerful agent of change to a more peaceful world.

A Scout is obedient. A Scout follows the rules of the family, school, and troop. Scouts obey the laws of their communities and countries. If a Scout thinks these rules and laws are unfair, then change is sought in an orderly way. Many times, rules are put in place to keep you safe, to help you learn, or simply to create order. Being obedient when an authority such as your parents, teachers, or government imposes rules is your way of helping them achieve success. Trust your beliefs and obey your conscience, though, if you are told to do something that you know is wrong.

A Scout is cheerful. A Scout looks for the bright side of life. A Scout cheerfully does assigned tasks and tries to make others happy, too. You know that you cannot always have your way, but a cheerful attitude can make the time seem to pass more quickly and can even turn a task you dislike into a lot of fun. You have a choice whether to enjoy life's experiences and challenges. It is always easier and much more enjoyable to decide from the start to be cheerful whenever you can.

A Scout is thrifty. Scouts work to pay their own way and to help others. Scouts save for the future. A Scout protects and conserves natural resources and is careful in the use of time, money, and property. Paying your own way with money you have earned gives you independence and pride. Even if you have only a few dollars, you have enough to save a bit for the future and even to share a bit with others — although what you share doesn't have to be in cash. Volunteering your time and talent can be just as valuable as donating money.

A Scout is brave. A Scout faces danger even when afraid. A Scout does the right thing even when doing the wrong thing or doing nothing would be easier. Bravery doesn't have to mean saving someone's life at risk to your own. While that is definitely brave, you are also being brave when you speak up to stop someone from being bullied or when you do what is right in spite of what others say. You are brave when you speak the truth and when you admit a mistake and apologize for it. And you show true courage when you defend the rights of others.

A Scout is clean. Scouts keep their bodies and minds fit. A Scout chooses friends who also live by high standards. Scouts avoid profanity and pornography. A Scout helps keep the home and community clean. A Scout knows there is no kindness or honor in tasteless behavior, such as using profanity or ethnic slurs, or in making fun of someone who is different from themselves. A Scout avoids that kind of behavior in words and deeds. Scouts keep their character clean by carefully monitoring what is viewed on television and the internet or read in books and magazines.

A Scout is reverent. A Scout is reverent toward God. A Scout is faithful in fulfilling religious duties. A Scout respects the beliefs of others. Wonders all around us remind us of our faith in God, and we show our reverence by living our lives according to the ideals of our beliefs. You will encounter people expressing their reverence in many ways. It is your duty to respect and defend their rights to their religious beliefs even when they differ from your own.

With your patrol, create a code of conduct.



To create a code of conduct, think about how you should act during a patrol meeting and how you expect everyone else to act.

The first step is to have everyone give their ideas on what should be part of the code of conduct. Then find the codes that everyone agrees upon. If you can, make it a list of things you should do instead of a list of things you shouldn't do. It is also best to keep the list short and simple.

To get you started, here are two things you may want to add to your patrol code of conduct:

- Everyone will do their best to live by the Scout Oath and the Scout Law.
- We will do our best to make everyone feel welcome in our patrol.

Demonstrate the Scouts BSA sign, Scouts BSA salute, and Scouts BSA handshake. Show how each is used.



The Scouts BSA Sign

The Scout sign is a universal symbol of Scouting. To make it, hold up the three middle fingers of your right hand, and cover the nail of your little finger with your thumb. Hold your elbow at a right angle. And stand up straight; you are a Scout!

The Scout sign is used to get people's attention. When you see a leader holding up the Scout sign, get quiet and hold up the Scout sign, too. Pretty soon, everybody in the room will do the same.



The Scouts BSA Salute

The Scout salute is used to salute the United States flag when you are in your Scout uniform. You can also use it to salute other Scouts and leaders. To make the salute, form the Scout sign with your right hand, then bring your hand up, palm down, so your forefinger touches the brim of your hat or the tip of your right eyebrow.

We use the Scout salute when the United States flag is being raised or lowered.

We use the Scout salute when the United States flag is passing by, like in a parade.

We use the Scout salute when someone is saying the Pledge of Allegiance.

The Scouts BSA Handshake

Unlike most people, Scouts shake hands with their left hands. The left hand is closer to the heart, so the



Scout handshake symbolizes friendship. It's a special handshake shared by millions of Scouts around the world. According to a story Scouting's founder Lord Robert Baden-Powell told, some warriors he met in Africa shook hands with their left hands. To do that, they had to put down their shields, thus showing trust in the people they were greeting.

Learn the Scouts BSA slogan and motto.

SCOUT MOTTO

Be Prepared. That's the Scout motto.

"Be prepared for what?" someone once asked Robert Baden-Powell, the founder of worldwide Scouting.

"Why, for any old thing," he replied.-

The skills you learn in Scouting will help you live up to the Scout motto. Because you know first aid, you will be prepared if someone gets hurt. Because you will have practiced lifesaving skills, you might be able to save a nonswimmer struggling in deep water. Whenever leadership is needed, you will understand what to do.

Baden-Powell wasn't thinking only of being ready for emergencies. His idea was that Scouts should prepare themselves to become productive citizens and strong leaders and to bring joy to other people. He wanted each Scout to be ready in mind and body and to meet with a strong heart whatever challenges lie ahead.

You'll face plenty of decisions in your life. How will you spend your time? Who will your friends be? What will you do after-high school? Remembering the Scout motto can help you make those decisions a little more easily.

SCOUT SLOGAN

Do a Good Turn Daily.

The Scout slogan is Do a Good Turn Daily. That means doing something to help others each day without expecting anything in return. It means doing your part to care for your community and the environment, too.

A Good Turn is more than simple good manners. It is a special act of kindness. From recycling to helping conserve America's natural resources, opportunities for Good Turns are everywhere. Some Good Turns are big — providing service after floods or other disasters, rescuing someone from a dangerous situation, recycling community trash, or completing conservation projects with your patrol. Good Turns also can be small, thoughtful acts — helping a disabled person safely cross a busy street, going to the store for an elderly neighbor, cutting back weeds blocking a street sign, or doing something special for a sibling.

With your patrol, or with your parent or legal guardian, visit a Scouts BSA troop.

As part of this Adventure, you will visit a Scouts BSA troop meeting. You might even visit the meetings of more than one troop so you can see how they are



different and which one you want to join. The troop you visit may be chartered by the same organization as your Cub Scout pack and may even meet right down the hall from your patrol. If so, you'll see a lot of familiar faces. But you may visit a troop in a different part of town where you don't know anybody. If you're feeling a little nervous, that's normal! Some of the Scouts you will meet were Arrow of Light Scouts not long ago and they felt that way too. They'll be excited to meet you and help you feel comfortable.

Inside a Scouts BSA Troop Meeting

Scouts BSA troop meetings are a lot different from your pack meetings, so you may not know exactly what is going on at first. In fact, you may not even think the Scouts know what is going on. They really do, however. So, what is going on?

Here's what a typical Scouts BSA troop meeting looks like:

First, the senior patrol leader — that's the top elected youth leader — calls the troop to order using the Scout sign. One of the patrols — they are like dens or an Arrow of Light patrol — leads a flag ceremony, and everybody recites the Pledge of Allegiance or the Scout Oath and the Scout Law.

Next, one of the Scouts (or a registered adult volunteer) teaches the group a skill like how to navigate using a compass. After the Scouts practice that skill for a while, they break up into patrols. One patrol might work on advancement requirements, another might decorate its patrol flag, and a third might make plans for an upcoming patrol hike. During this time (and really during the whole meeting), individual Scouts may be working on advancement, doing their troop jobs, or meeting with the Scoutmaster.

After the patrol meetings, everybody comes back together to play a game. This may be a game just for fun, or it may give the Scouts a chance to practice the skill they learned earlier. For example, they might navigate a compass course outside their meeting place.

Finally, the whole troop gets back together for the closing ceremony. The senior patrol leader makes a few announcements. The Scoutmaster gives some words of wisdom — called a Scoutmaster's Minute. The patrol that led the flag ceremony retrieves the colors. And just like that, the meeting's over.

The Scouts run the troop meeting themselves. If things are going well, the only time an adult should say anything during a troop meeting is when the Scoutmaster gives the Scoutmaster's Minute. The same thing is true for hikes, campouts, service



projects, and everything else. Adult leaders are there to supervise, mentor, and coach the Scouts.

The Scoutmaster and assistant Scoutmasters train the youth leaders and then stand on the sidelines watching them in action.

Who Runs the Scouts BSA Troop?

You can identify the youth leaders by the badges of office they wear on their left sleeves. Adult volunteer leaders also wear badges of office. When you visit a troop meeting, look for some of these leaders:

Youth Leadership

- ▶ Senior patrol leader: leads the troop.
- Assistant senior patrol leader: supports the senior patrol leader.
- ➤ **Troop guide:** helps a patrol of young Scouts, much like a den chief helps a Cub Scout den.
- ▶ Quartermaster: takes care of the troop's equipment.
- ▶ Scribe: takes care of the troop's records.
- ▶ Instructor: teaches skills.
- ▶ Patrol leader: leads a patrol.
- Assistant patrol leader: assists the patrol leader.

Adult Leadership

- ➤ **Scoutmaster:** an adult who coaches the senior patrol leader and other youth leaders.
- ► Assistant Scoutmaster: an adult who supports the Scoutmaster.

If you get a chance at the troop meeting, ask some youth and adult leaders what they do. Be on the lookout for other badges of office, and find out about those leadership roles, too.

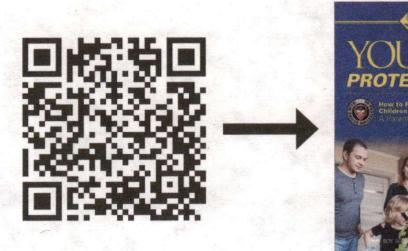






At home, with your parent or legal guardian, do the activities in the booklet "How to Protect Your Children From Child Abuse: A Parent's Guide."

Your parent(s) or legal guardian must read the booklet that is in front of your handbook. They can also find the online version by scanning this QR code.



CONGRATULATIONS!

You have completed your first required Arrow of Light Adventure!

You may now earn any of the other Arrow of Light Adventures.

OUTDOOR ADVENTURER

OUTDOORS





- Required Adventure
- Scan for this Adventure page

SNAPSHOT OF ADVENTURE



There's nothing like the great outdoors. In this Adventure, you will plan and participate in a campout with your Arrow of Light patrol or a Scouts BSA troop. You'll learn how to pack, help plan using the

BSA SAFE Checklist, set up camp, and discover how Scouts camp.

REQUIREMENTS	Approved by
 Learn about the Scout Basic Essentials. Determine what you will bring on an overnight campout — including a tent and sleeping bag/gear — and how you will carry your gear. 	
3. Review the four points of the BSA SAFE Checklist and how you will apply them on the campout.	
4. Locate the camp and campsite on a map.	
5. With your patrol or a Scouts BSA troop, participate in a campout.	
6. Upon arrival at the campout, determine where to set up your campsite: kitchen, eating area, tents, and firepit. Help the patrol set up the patrol gear before setting up your own tent.	
7. Explain how to keep food safe and the kitchen area sanitary at the campsite. Demonstrate your knowledge during the campout.	
8. After your campout, discuss with your patrol what went well and what you would do differently next time. Include how you followed the Outdoor Code and Leave No Trace Principles for Kids.	

Learn about the Scout Basic Essentials.

Be Prepared. That is the Scouts BSA motto.

Be prepared for what?

For anything.

Cub Scouts have the Cub Scout Six Essentials. Scouts BSA members have the Scout Basic Essentials, which are the things Scouts bring on every outdoor activity, especially a campout.



Pocketknife. A pocketknife or multitool could be the most useful tool you can own. Keep yours clean, sharp, and secure, and don't pick one so heavy that it pulls your pants down.

In order to carry a pocketknife as an Arrow of Light Scout, you must first earn the Knife Safety Adventure, even if you earned the Whittling Adventure as a Bear Cub Scout and/or the Chef's Knife Adventure as a Webelos.

Rain Gear. A poncho or a rain parka can protect you from light showers and heavy storms. It can also block the wind and help keep you warm.





Trail Food. A small bag of granola, some raisins and nuts, or a couple of energy bars can give you a boost when you get hungry on the trail. Highenergy foods are especially important if you are out longer than you had expected.



Flashlight. An LED flashlight will cast a strong beam with just one or two AA batteries. LED headlamps are a good option, too, because they leave your hands free. Carry spare batteries in case you need them.

Extra Clothing. Layers of clothing allow you to adjust what you wear to match the weather. During an afternoon hike, a jacket might provide all the extra warmth you need. On camping trips, bring along additional clothing to deal with changes in temperature.



you sweat a lot.

First-Aid Kit. Your patrol leader or a Scouts BSA troop leader will bring a group first-aid kit on most Scout trips, but you should also carry a few personal supplies to treat blisters, small cuts, and other minor injuries.

Sun Protection. Guard your skin by applying a good sunscreen (SPF 30 or greater) and wear a broad-brimmed hat, sunglasses, and lip balm that contains sunscreen ingredients. Apply sunscreen 20 minutes before you hit the trail and every two hours after that — more often if



Map and Compass. A
map and a compass can show
you the way in unfamiliar areas.
Learn the basics, and then
practice using a compass and a
map when you're in the field.

Matches and Fire Starters. With strike-anywhere matches, a butane lighter, or a ferro rod and striker, you can light a stove or kindle a fire in any weather. Protect matches and other fire starters from moisture by storing them in a self-sealing plastic bag or canister.

Before you can use matches or fire starters you must first earn the Firem'n Chit. You may want to ask for help from your local Scouts BSA Troop. If you earn this certification as an Arrow of Light Scout you will be required to earn it again in Scouts BSA before you are permitted to use matches or fire starters in Scouts BSA.

Firem'n Chit Requirements - The Scout must show their Scout leader, or someone designated by their leader, an understanding of the responsibility to do the following:

- ▶ I have read and understand use and safety rules from the Scouts BSA Handbook.
- ▶ I will build a campfire only when necessary and when I have the necessary permits (regulations vary by locality).
- ▶ I will minimize campfire impacts or use existing fire lays consistent with the principles of Leave No Trace. I will check to see that all flammable material fire lay is cleaned before I leave it. is cleared at least 5 feet in all directions from fire (total 10 feet).
- ▶ I will safely use and store fire-starting Leave No Trace and Tread Lightly!

materials.

- I will see that fire is attended to at all times.
- ▶ I will make sure that water and/ or a shovel is readily available. I will promptly report any wildfire to the proper authorities.
- ▶ I will use the cold-out test to make sure the fire is cold out and will make sure the
- ▶ I follow the Outdoor Code, the Guide to Safe Scouting, and the principles of

The Scout's "Firem'n Rights" can be taken away if they fail in their responsibility.

Water Bottle. Always take along at least a 1-quart bottle filled with water. On long hikes, on hot days, in arid regions, and at high elevations, carry two bottles or more.

Learn more about the Scout Basic Essentials in the front of this handbook.

Determine what you will bring on an overnight campout — including a tent and sleeping bag/gear — and how you will carry your gear.

PERSONAL CAMPING GEAR CHECKLIST

Use this checklist every time you go on a Scout outdoor trip. Use a pencil to check off each item as you pack it.

	A CONTRACTOR STATE OF THE STATE	
The Scout Basic Essentials Pocketknife Water bottle Matches and	Sleeping gear _ Sleeping bag _ Sleeping pad _ Ground cloth	Optional personal items Personal medications Watch
fire starters First-aid kit Flashlight Sun protection Extra clothing Trail food Map and compass Rain gear Clothing appropriate for the season and the weather Backpack with rain cover	Eating kit _ Eating utensils _ Plate _ Bowl _ Cup Cleanup kit _ Soap _ Dental floss _ Toothbrush _ Comb _ Toothpaste _ Small camp towel	 Fishing pole and gear Camera Pencil or pen Insect repellent Small notebook Swimsuit Bible, testament, or prayer book, according to your faith Other gear for specific activities

Choosing a Backpack

For most camping trips you can carry your gear, clothing, and food in a backpack. Your pack should be comfortable enough for a long day on the trail.

Most backpacks have a stiff internal frame. Outside pockets on many packs are ideal for storing water bottles, maps, and other items you might want to reach quickly. Another useful feature is a daisy chain that lets you attach gear (or wet socks) to the outside with carabiners.

A hip belt shifts much of the weight of a pack from your shoulders to the strong muscles of your legs, while a sternum strap keeps the shoulder straps in the right position. Compression straps on the sides or back of internal frame packs help keep the load from shifting. Investing the time to properly adjust the straps and hip belts will make your pack much easier to carry.

Many backpacks will have either external water-bottle pockets or ports that let you run a drinking tube from a water reservoir inside the pack. These features help ensure that you drink enough water while you're hiking.

Shop for packs at stores with salespeople who know how to match you with the right pack for your height, experience, and the kinds of adventures you are planning. One of the most key factors is your torso length — the distance from your shoulder blades to the top of your pelvis; an experienced salesperson will measure your torso and steer you to the right sized pack. If you're still growing, choose a pack that you can adjust as you get taller.

Packing

Your backpack should be a bag of bags. Instead of dumping everything into your pack, sort your personal gear and clothing into nylon stuff sacks or resealable plastic bags. Stuff sacks and plastic bags will help keep everything dry and organized inside your pack. When you get home, store the bags in your pack so you can use them on future trips.

Place softer items in your pack so that they will cushion your back. Keep your rain gear, flashlight, first-aid kit, water bottle, map, and compass near the top of the pack or in outside pockets where they will be easy to reach.

Stuff your sleeping bag into its storage sack, then put it inside your pack if there is room. If not, tuck it under the pack's top flap or strap it to the frame.

For maximum comfort, balance the weight in your pack carefully. If the center of gravity is too high, or too far from your back, you'll feel top-heavy. If it's too low, you'll feel like the pack is dragging you down.

Along with your personal gear, expect to carry some of your patrol's equipment and food. Your share might include a pot, the dining fly and poles, a camp stove, and ingredients for a breakfast.

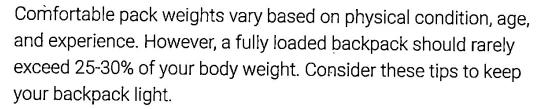
You and your patrol will come up with the best way to divide up group gear, but here are a few suggestions.

- ▶ Divide up your tent so that one Scout carries the tent itself and another Scout carries the rain fly, poles, and stakes.
- ► Give stronger Scouts heavier items like cook pots and fuel bottles.
- ► Keep like items together as much as possible. For example, one Scout should carry all the cooking utensils.
- ➤ As you use up food and fuel, rebalance the loads among patrol members.

A rain cover will shield your pack when bad weather catches you on the trail. Put the cover over your pack to protect it from nighttime rains and morning dew.

Keeping Your Pack Light

- - -



- ➤ Start with a light pack. Choosing a 3-pound pack instead of a 6-pound pack makes a significant difference when your total weight allowance is 25 pounds.
- ➤ Remember that ounces add up to pounds. Every ounce you save makes a difference for example, by choosing a flashlight or lantern that uses AAA batteries or solar power instead of D batteries.
- ► Share items. On most backpacking trips, one pocketknife is probably sufficient for your whole patrol.
- ► Look for multiuse items. Your water bottle can double as a cup. A flying disc can double as a plate. A jacket stuffed with clothes can double as a pillow.
- ▶ Don't forget food and water. The water in your pack weighs a lot whether it's in your water bottles or in your food. A gallon of water weighs more than 8 pounds! Choose dehydrated food and plan to treat water along the trail.

Tents

When choosing a tent, consider sleeping capacity, cost, and weight. (The ideal per-person weight is 3 pounds or less.) The best tents tend to have abundant windows and vents, as well as rain flies that extend to the ground. Many tents are three-season models, which means they can stand up to only moderate snow and wind. For adventures in more rugged weather conditions, choose a sturdier four-season tent.

Tents range in size from one-person bivy sacks that are barely bigger than a sleeping bag to multiroom cabin tents big enough to stand up in. For most Scout outings, the best tent is an A-frame or dome tent that sleeps two or three Scouts. It will be roomy enough to stretch out inside, but light enough to take backpacking.

Most Scout tents are made of nylon that allows moisture from your breath to escape rather than being trapped inside the tent, which would make it feel damp and clammy. Large windows let summer breezes blow through to keep you cool, while a waterproof rain fly that fits over the body of a tent sheds rain and snow and blocks winter wind.

Sleeping Bags

When you sleep at home, a mattress beneath you and blankets on top trap your body heat and keep you warm. A sleeping bag and a pad can become a bed you can carry anywhere. They are easy to pack and to use. Most sleeping bags fit closely around your body and will keep you warmer and more comfortable outdoors than blankets.

The cloth part of a sleeping bag is called the shell. Inside the shell is fill material made of synthetic fibers or the down and feathers of ducks and geese. Air pockets in the fill trap your body heat and hold it close to you.

Sleeping bags are rated by temperature.

For example, a 30-degree bag should keep you comfortable when the temperature drops just below freezing — assuming you're wearing a hat and long underwear and have a sleeping pad underneath you.

Sleeping bag ratings are just a starting point. As you become a more experienced camper, you might discover that you sleep colder than average and need a bag rated to a lower temperature than what you expect.

Adding a wool blanket or a sleeping-bag liner made of polar fleece will help a summer-weight sleeping bag keep you warm during cool nights. On hot summer nights, a sleeping-bag liner might be all you need.

On winter campouts, a mummy-style sleeping bag will keep you warmer than a rectangular sleeping bag. A mummy bag's integrated, adjustable hood makes it much harder for body heat to escape and for cold air to rush in.



Review the four points of the BSA SAFE Checklist and how you will apply them on the campout.



The BSA SAFE Checklist is used for all activities.
Review the four points with your den leader and patrol and discuss how each of the four points will be applied to your campout.

Supervision — Youth are supervised by qualified and trustworthy adults who set the example for safety.

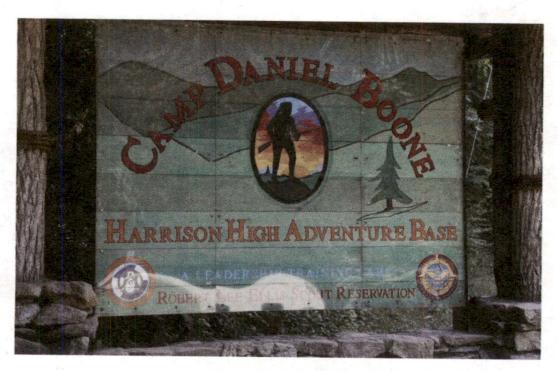
Assessment — Activities are assessed for risks during planning. Leaders have reviewed applicable program guidance or standards and have verified the activity is not prohibited. Risk avoidance or mitigation is incorporated into the activity.

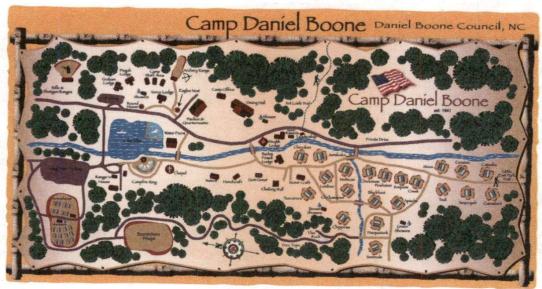
Fitness and Skill — Participants' BSA Annual Health and Medical Records are reviewed, and leaders have confirmed that prerequisite fitness and skill levels exist for participants to take part safely.

Equipment and Environment — Safe and appropriately sized equipment, courses, campsites, trails, or playing fields are used properly. Leaders periodically check gear use and the environment for changing conditions that could affect safety.

Locate the campsite where you will be camping on a map.

A good camp will have a map of the overall campsite that identifies campsites, buildings, and program areas. Campsites are often named or numbered. Know the name or number of the campsite you will be camping in, and then identify it on the map.





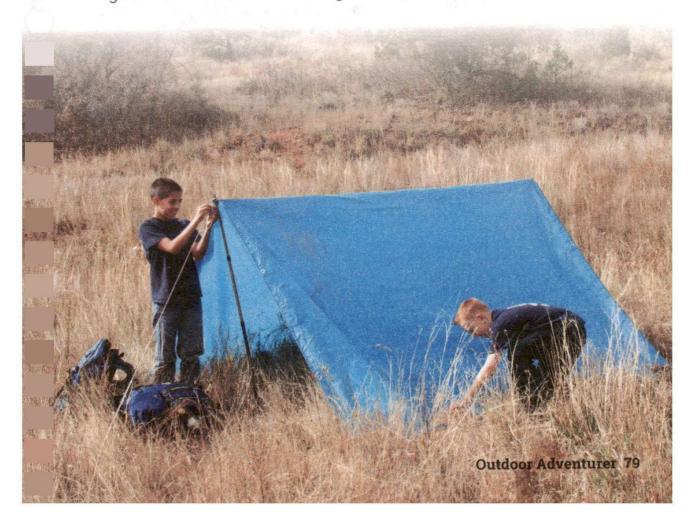
With your patrol or a Scouts BSA troop, participate in a campout.

"Camping" is a term that covers all sorts of activities, from pitching a tent in your backyard to venturing deep into a wilderness area. In Scouting, camping means staying overnight in a temporary shelter such as a tent, lean-to, or snow cave.

Depending on your interests, you might spend all your time in or near your campsite or use it as a trailhead for other activities.

Before going on a campout, Scouts plan. We ask the following questions: where, when, who, why, what, and how. Answer these six questions as your Arrow of Light patrol gets ready for a camping trip, and you'll be prepared for whatever you meet along the way.

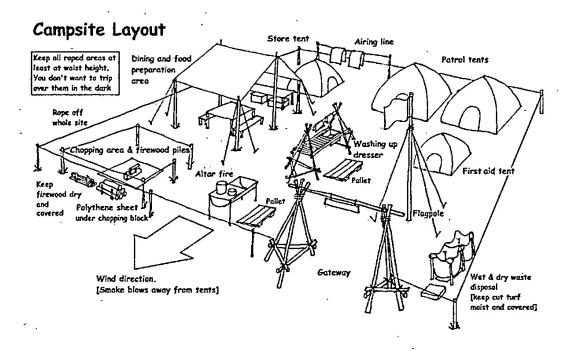
The experience of filling out a trip plan will guide you to make good decisions before setting out on a camping trip.



CAMPING TRIP PLAN

Before you begin your plans, check out the Campout Safety Checklist at www.scouting.org/health-and-safety/gss/gssax.
Name of this trip:
WHERE are we going and how will we get there?
WHEN will we go and return?
WHO is going with us? Adult leaders:
Patrol members:
WHY are we going? (Write a sentence or two about the purpose of the camping trip.)
WHAT do we need and what are we taking? (Attach a copy of your camping checklists and a copy of your menus/food list.)
HOW will we respect the environment by following the principles of outdoor ethics?
· · · · · · · · · · · · · · · · · · ·
Finally, check with those in charge of your destination for regulations you'll need to follow on matters including group size, campfire regulations and restrictions, and permits your Scouts BSA troop or patrol must have.

Upon arrival at the campout, determine where to set up your campsite: kitchen, eating area, tents, and firepit. Help the patrol set up the patrol gear before setting up your own tent.



A good campsite is more than a convenient place to sleep and eat. Its setting offers you safety and comfort and takes advantage of features like great views and natural windbreaks. Keep the following information in mind as you decide where to spend the night.

ENVIRONMENTAL IMPACT

The principles of outdoor ethics will help guide you as you select a campsite. Use established campsites whenever you can, or camp on durable surfaces — that is, surfaces that won't be harmed by tents and footsteps. Good campsites are found, not made. If you must move a log, a few rocks, or anything else as you pitch your tents, return everything to its original location before you leave.

SAFETY

Pitch tents away from dead trees or trees with limbs that might fall in a storm. Stay out of ditches or depressions in the ground that could fill during a flash flood and other areas that could fill with water. (If you see debris caught in underbrush or if all the grass is bent over in the same direction, choose another site.) Avoid lone trees, the tops of hills and mountains, high ridges, and other targets of lightning. Camp away from hiking and game trails, especially in bear country. (Look for animal tracks and worn pathways that are too low or narrow for humans.)

SIZE

A campsite must be large enough for your Arrow of Light patrol to set up its tents and cook its meals in separate areas. Also, make sure there is enough space to move around without tripping over tent stakes and tent guylines.

COMFORT

In the summer, look for a shady site where breezes can help cool your tent and chase away mosquitoes. In the winter, find a site where trees and hillsides provide a natural windbreak. Regardless of the time of year, place your tent on the flattest spot possible. (If the ground slants a bit, sleep with your head uphill and the opening downhill.) Consider the sun as well; the morning sun will help dry out your tent, while evening sun can be uncomfortably hot in the summer.

WATER

Each Scout in your patrol will need several gallons of water every day for drinking, cooking, and cleanup. Treat water you take from streams, rivers, lakes, and springs. In dry regions, you might need to carry all your water to camp. That information will be important when you put together the trip plan.

STOVES AND CAMPFIRES

Where fires are not allowed, where wood is scarce, or when you want to prepare your meals quickly, plan on using a camp stove to heat water and cook food. As part of Scouting's commitment to

preserving the outdoors, stoves are the preferred method for cooking.

Where fires are permitted, appropriate, and desired, look for a campsite with an existing fire ring. Only use wood that is dead, on the ground, and no larger around than your wrist. Never cut live trees. For more information on using stoves and campfires, see the Unit Fireguard Plan Chart, No. 33691.



You must first earn the Firem'n Chit certification before you are permitted to use matches, fire starters, or start campfires.

PRIVACY

A Scout is courteous. Show respect by selecting campsites away from other campers. Trees, bushes, and the shape of the land can screen your camp from trails and neighboring campsites. Keep noise down so you won't disturb nearby campers, and respect quiet hours at public campgrounds and Scout camps.

PERMISSION

Well ahead of the date of a camping trip, contact rangers or other managers of public parks and forests to let them know you're coming. They can issue the permits you need and suggest how you can fully enjoy your campout. Get permission from owners or managers of private property, too, before camping on their land.

Explain how to keep food safe and the kitchen area sanitary at the campsite. Demonstrate your knowledge during the campout.

Before you start to cook, make sure you wash your hands, wipe down any surfaces that may come in contact with food, and check that all kitchen tools and utensils are clean.



Only those who are cooking should be in the camp kitchen when food is being prepared.

Plan how you will store food while you're on the campout. Fresh meats, dairy products, and other perishable items can be kept chilled by stowing them with chunks of ice in an insulated cooler. Other foods won't need to stay cold but could require protection from mice, raccoons, and even bears.

If your camp is near a cabin or other building that is safe from animals, you might be able to store your food inside. Some campgrounds have metal boxes where you can leave your food and know it's protected from wildlife and weather. You also can keep food out of reach of animals by hanging it 20 feet in the air from a tree.

Whether you cook with a stove or over an open fire, put on a pot of water before you serve a meal. You'll have hot water for cleanup by the time you finish eating. As your meal is cooking, you can also do some other things to make cleanup easier.

- ➤ Separate clean and dirty pots and utensils. Put the clean items away.
- Scrape excess food into a trash bag.
- ► Pour some water in the pots you've used if they contain stuck-on food.
- ► Throw away food wrappers, vegetable peels, and other waste.
- Close and put away food packages you've opened.

Begin cleanup by setting out three pots:

Follow these steps to wash a pot:

- 1. Scrape excess food into a garbage bag so the pot is as clean as possible.
- 2. Dampen a scrub pad with water from the wash pot and scrub the pot to loosen the remaining food.
- 3. Dunk the pot in the wash pot to remove the loosened food. If food is still stuck to the pot, scrub some more.
- 4. Use hot-pot tongs to dip the pot in the hot-rinse pot. Be sure no soap bubbles remain on the pan.
- 5. Dunk the pot in the cold-rinse pot. If the pot is too big, dip some water from the cold-rinse pot into the pot and slosh it around.

Lay clean dishes, pots, and utensils on a plastic ground sheet or hang them in a mesh dish hammock and let them air dry. Dispose of dirty wash water properly, either in a designated area such as a drain or by dispersing 200 feet away from camp and water sources.

Each Scout can wash and rinse their own plate, cup, and utensils. If everyone also does one pot, pan, or cooking utensil, the work will be finished in no time.

After your campout, discuss with your patrol what went well and what you would do differently next time. Include how you followed the Outdoor Code and Leave No Trace Principles for Kids.



You can do this requirement as an Arrow of Light patrol. If you're camping with a Scouts BSA troop, you should do this together. After each campout, Scouts will identify those things that went well and those things that could be improved. Here are two common methods to do this.

 When conducting a discussion, give everyone the opportunity to contribute. Even if something has already been identified by someone else, it's good to hear how many other people felt the same way.

2. Start, Stop, Continue

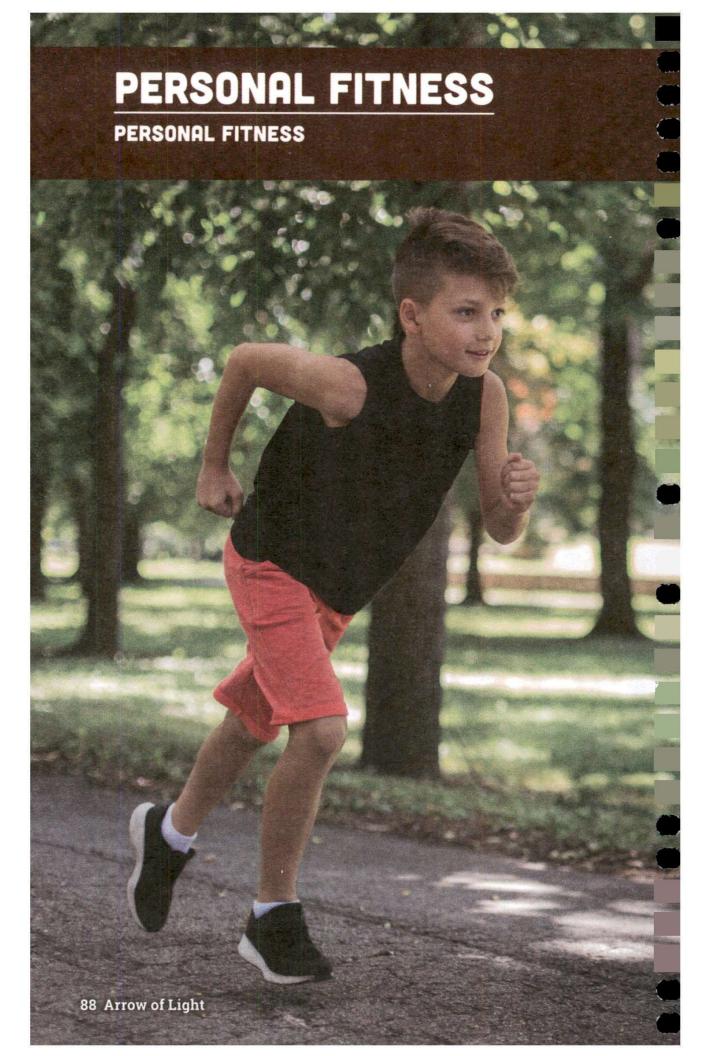
Gather everyone to identify the things you should start doing, things you should stop doing, and things you should continue to do. You can gather this by having everyone name one item to start, one to stop, and one to continue, or you can lead a group discussion. This works best when the list is written in a place everyone can see.

Here is an example of what a start, stop, and continue list may look like after a campout.

Start: Checking that each patrol has a duty roster before the campout.

Stop: Bringing Dutch ovens when no one is planning to use them.

Continue: Having patrol competitions and patrol time during the campout.



SNAPSHOT OF ADVENTURE



In the Scout Oath we promise to keep ourselves physically strong. Proper nutrition, staying active with group activities, and personal exercises are key to being physically strong. You will also review your

personal BSA Health and Medical Record.

REQUIREMENTS	Approved by
 Plan a balanced meal that you would eat when camping. Prepare that meal using the gear you would use on a campout. Examine what it is to be physically fit and how you incorporate this in your life. Track the number of times you are active for 30 minutes or longer over a 14-day period. Share with your patrol or family what you enjoyed and if you feel you are living up to the Secret Oath of being physically fit. 	
the Scout Oath of being physically fit. 3. Be active for 30 minutes with your patrol, a younger den, or at least one other person in a way that includes both stretching and moving.	
4. Review your BSA Annual Health and Medical Record with your parent or legal guardian. Discuss your ability to participate in Arrow of Light patrol and pack activities.	



- Required Adventure
- Scan for this Adventure page

Plan a balanced meal that you would eat when camping. Prepare that meal using the gear you would use on a campout.



Great meals are planned. Work with your family or other members of your patrol to plan a delicious menu for breakfast, lunch, or dinner. Remember to include at least three different food groups whenever possible.

Make a shopping list and decide how much money you can spend on food. Then head to the grocery store and start shopping. Work to stay within your budget by checking prices as you go. If you need to make adjustments, that is OK.

Here are some things to consider when you go shopping:

- Store brands are often less expensive than brands you see advertised on TV or online.
- Foods you make from scratch usually cost less (and are tastier) than processed foods.
- ➤ You should compare the price of fresh, canned, and frozen fruits and vegetables to find the best price.
- ➤ To really be sure you're getting the best deal, compare the price per ounce, pound, or serving of different products.

Before using a knife you must first earn the Knife Safety Adventure.

SAMPLE CAMP MENU

BREAKFAST

Eggs in a bag: For each Scout, crack one or two eggs into a sealable, quart-sized, boil-safe cooking bag. Add 1 tablespoon milk and other ingredients — bacon bits, cheese, chopped green pepper, chopped onion, salt, pepper — to taste. Seal the bag, removing excess air, and then shake it. (Don't shake it before you seal it!) Place the bag into boiling water and cook for three to four minutes or until fully cooked. Use tongs to remove the bag from the hot water.

Fruit salad: Cut up apples, bananas, oranges, grapes, or other favorite fruits. Mix together and toss with a little lemon juice to prevent browning.

Biscuits: Arrange canned biscuits on a metal plate or pie pan. Carefully place the plate on several rocks in the floor of a preheated Dutch oven. Cook until golden brown.

Juice and milk

LUNCH

Peanut butter and jelly sandwiches
Carrots, apples
Juice boxes

DINNER

Dutch-oven pizza: Spread pizza dough on a metal plate. Cover with pizza sauce, sautéed vegetables, cooked meat, cheese, and other favorite toppings.

Carefully place the plate on several rocks in the floor of a preheated Dutch oven. Cook until the cheese is melted and the crust is golden brown.

Salad

Drinks

OUTDOOR COOKING METHODS

Camp food can be delicious, and camp cooking is fun. As part of this Adventure, you'll get to try some really cool ways to cook food. Just don't try them all at home.

Camp Stove: A camp stove is a tabletop stove that uses propane. Camp stoves work just like your cooktop back home. Be careful, however, because some can tip over easily. Always have an experienced adult help you light a camp stove.

Dutch Oven: A Dutch oven is a cast iron (or aluminum) pot that is heated by charcoal or hot coals. A camping Dutch oven has legs on the bottom and a rim around the lid. For baking, put 10 to 12 coals underneath and enough coals on top to cover the lid. For boiling, put more coals underneath. Either way, you can add or remove coals to adjust the temperature.

Box Oven: A box oven is like a homemade Dutch oven. It is a foil-lined cardboard box that sits on top of a cookie sheet that is propped on four empty vegetable cans. Between the cans is a bed of coals, which provides the heat.

Solar Oven: A solar oven is a pizza box that is lined with aluminum foil and covered with black construction paper. It uses the sun's rays to cook what is inside.

Open Campfire or Charcoal: Open fires are good for roasting marshmallows and grilling things like burgers. For the best results, wait until the flames die down, and cook over the coals. If using charcoal, let it burn down until it is covered with white ash. Charcoal is a useful tool for learning outdoor cooking because it is easy to light and keeps a steady, even heat.

FOOD SAFETY

As you cook, you need to do some things to keep from getting sick and making other people sick:

- ► Clean hands and surfaces frequently. Wash your hands with warm water and soap for at least 20 seconds before and after you handle food and after you use the bathroom. Wash your cutting boards, dishes, utensils, and countertops with hot, soapy water after you prepare each food item and before you go on to the next food.
- ▶ Don't cross-contaminate. That's a fancy way to say you should keep raw meat, poultry, seafood, and eggs separate from each other and from other foods in your shopping cart, grocery bags, refrigerator, and ice chest. Also, never place cooked food on a plate that has held raw meat, poultry, seafood, or eggs.
- ➤ Cook to proper temperatures. Use a food thermometer, which measures the temperature inside cooked meat, poultry, and egg dishes, to make sure the food is fully cooked. Stick the thermometer into the middle of the food and don't let it touch the pan. Most recipes include the correct temperatures for different kinds of food.
- ▶ Chill/refrigerate promptly. Never let food sit out for more than two hours before putting it in the refrigerator, freezer, or ice chest. Never thaw frozen food at room temperature. Instead, thaw it in the refrigerator, in cold water, or in a microwave oven using the defrost setting. Food thawed in cold water or in the microwave should be cooked immediately.
- ▶ Maintain proper temperatures. Keep cold foods in an ice chest or refrigerator until you're ready to use them. If you're going to use an insulated container to keep food warm, fill it with hot water, wait a few minutes, then empty it and fill it with hot food.

Examine what it is to be physically fit and how you incorporate this in your life. Track the number of times you are active for 30 minutes or longer over a 14-day period. Share with your patrol or family what you enjoyed and if you feel you are living up to the Scout Oath of being physically fit.

Being active continuously for 30 minutes or longer is a good way to keep your muscles in good condition, your heart pumping, and your lungs working well. You can choose to do the same activity, or you can rotate through different activities.



94 Arrow of Light

DAY	1	2	3
ACTIVITY			
DURATION			
DAY	4	5	6
ACTIVITY			
DURATION)		
DAY	7	, 8	9
ACTIVITY			
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DAY	10	11	12
ACTIVITY			
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DAY	13	14	(1) (1) (1) (1) (1) (1) (1) (1)
ACTIVITY			
DURATION			

Be active for 30 minutes with your patrol, a younger den, or at least one other person in a way that includes both stretching and moving.

Are you on a sports team at school or with a club? If so, you know that you spend more time practicing than you do playing in an actual game. Practice includes stretching and conditioning your body for the type of the game you play, and then you spend time practicing. If this is what your sports team does, then share it with your den leader or parent to complete this requirement.



Your patrol could also choose to play a game as a patrol, with a younger den, or with the whole pack. A great game that can include everyone, even parents, is kickball.

Kickball

If you're familiar with the rules of softball or baseball, then you already know the basics of kickball. Kickball is played on a baseball field (or a field can be set up in a similar fashion), and the distances to the bases can be adjusted based on the players. The distance between bases on a Little League baseball diamond is 60 feet; this is a good distance to start off with.

Create two teams. One team starts off kicking and the other starts off in the field. If you have an odd number of players, you may want to have someone who is not on either team serve as the pitcher.

The kicking team will decide the order in which players will kick. Only one kicker approaches home plate at a time. The pitcher rolls the ball in front of home plate. In this version, there are no strikes or balls like in baseball or softball. Slow to moderate pitches only. If the kicker requests a slower pitch, then the pitcher is obligated to do so. The pitcher should try their best to give the kicker a pitch that they feel most comfortable kicking. The kicker kicks the ball and then starts to run the bases.

The team in the field tries to get the kicker out. They can do this by either catching the kicked ball before it touches the ground or by throwing the ball to a teammate who is touching the base that the kicker is running to before the runner gets there. In this version, there is no throwing the ball at the kicker to get them out.

The team in the field must stay out of the way of a kicker who is running the bases. The straight line that connects the bases is called the baseline. If a member of the field team gets in the way of a kicker who is running the bases, the runner advances



to the next base. If the runner was not the kicker, the kicker is also automatically safe at first base even if the field team caught their kick.

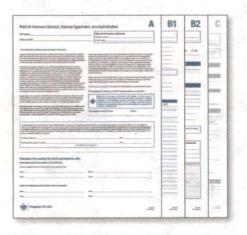
Any player who deliberately crashes into a defensive player holding the ball, waiting to apply a tag, will have to sit out for the rest of the game. On an overthrow, the runner may advance at their own risk. They are allowed to run more than one base if they want.

The play ends when the pitcher has control of the ball and is near the mound/pitching circle. Any runner who interferes with the ball on its way back to the pitcher will be called out.

Kickball is designed to focus on fun and being active. Consider the points of the Scout Law that are important to good sportsmanship.

Review your BSA Annual Health and Medical Record with your parent or legal guardian. Discuss your ability to participate in Arrow of Light patrol and pack activities.

Everyone who participates in a Cub Scout activity is required to have a BSA Annual Health and Medical Record on file with the pack. The adults in your pack can learn more about the BSA Annual Health and Medical Record on Scouting.org or by scanning the QR code below.





Your parent or legal guardian will complete the BSA Annual Health and Medical Record for you. It does not require a doctor's appointment. The form asks for an emergency contact and collects basic information about you and your health history.

Is there something that your den leader should know about you that may help keep you safe? For example, are you allergic to certain foods, insect bites, medications, or latex? This information should be recorded on your BSA Annual Health and Medical Record.

This form is also required to participate in Scouts BSA. When you join a Scouts BSA troop, make sure to inform the troop's adult leadership of anything that may help keep you safe, and give them a copy of your form.

CITIZENSHIP

CITIZENSHIP



SNAPSHOT OF ADVENTURE



Volunteering to make your community and country better is part of being both a Scout and a good citizen. This Adventure may only have two requirements, but the goal is for you to take an

active part in identifying and planning a service project, not just participating in one. This will help you in the future as you learn how to plan and conduct service projects in Scouts BSA.

REQUIREMENTS

Approved by

- 1. Identify a community service project that your patrol or pack could accomplish. Use the BSA SAFE Checklist and develop a plan to conduct the service project safely.
- 2. Participate in a service project for a minimum of two hours or multiple service projects for a total of two hours.

- · Required Adventure
- · Scan for this Adventure page

Identify a community service project that your patrol or pack could accomplish. Use the BSA Safe Checklist and develop a plan to conduct the service project safely.

The BSA SAFE Checklist is used for all Scouting activities. For service projects, a special BSA SAFE Checklist has been created. You can find this form at scouting.org or by following this QR code.

Here is what the BSA SAFE Checklist for service projects looks like.







Participate in a service project for a minimum of two hours or multiple service projects for a total of two hours.

You may choose to follow through with the service project you planned in requirement 1 or you may participate in one or more other service projects with your patrol, pack, or family.



FIRST AID

PERSONAL SAFETY AWARENESS



SNAPSHOT OF ADVENTURE



In this Adventure, you will learn how to protect yourself and how to help others when they have been hurt. The skills you learn in this Adventure could help someone in trouble or even save a life.

Your patrol may have a trained professional like an emergency medical technician (EMT), medical doctor, or registered nurse provide instruction for this Adventure.

REQUIREMENTS	Approved by
With permission from your parent or legal guardian, watch the <i>Protect Yourself Rules</i> video for the Arrow of Light rank.	
Explain what you should do if you encounter someone in need of first aid.	
3. Demonstrate what to do for hurry cases of first aid: serious bleeding, heart attack or sudden cardiac arrest, stopped breathing, stroke, and poisoning.	
4. Demonstrate how to help a choking victim.	
5. Demonstrate how to treat shock.	-
 6. Demonstrate how to treat the following: cuts and scratches, burns and scalds, bites and stings of insects and animals, and nosebleeds. 7. Make a personal first-aid kit. Demonstrate the proper use of each item in your first-aid kit. 	



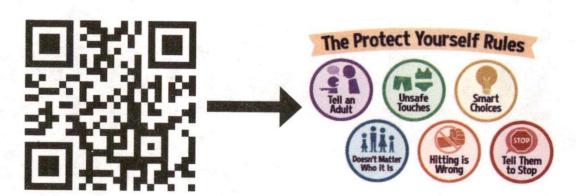
- Required Adventure
- Scan for this Adventure page

With permission from your parent or legal guardian, watch the *Protect Yourself Rules* video for the Arrow of Light rank.

In the Protect Yourself Rules video for Arrow of Light rank, you will meet Darius and Mia, who will share with you their experiences and the six Protect Yourself Rules.



You can watch the video by going to Scouting.org or by following the QR code below.



Explain what you should do if you encounter someone in need of first aid.

When people get hurt, they need help right away. That help is called first aid. It's the quick help someone receives before professional help can arrive. You might be the only person at the scene of an accident who can provide first aid, so it's important to know the right way to help.

The Scouts BSA motto is Be Prepared. One way to be prepared is to learn how to do first aid before an emergency occurs.

First aid is what happens when you remove a tick that's burrowed into your skin. First aid is what happens when, after you scrape your knee, a caring adult cleans and bandages the wound. First aid is what happens when a server in a restaurant saves a choking victim by giving abdominal thrusts. First aid is what happens when a Scout performs CPR while waiting for an ambulance to arrive. First aid is what you will learn during this Adventure.

What to Do After an Accident

If you come across an accident or medical emergency, do these things:

- ▶ **Check**. Make sure the scene is safe before approaching. You can't help anyone if you become a victim yourself.
- ▶ Calm down and think. Take a couple of seconds to assess the situation and decide what needs to be done. Staying calm may be hard to do, but it's important. The victim will feel better knowing you are in control, and you will be able to make better decisions than if you were panicked.

- ▶ Call. If the victim seems badly hurt, send someone to call for medical help. If no one is there to do that, call for help and offer to assist the victim.
- ▶ Care. Explain that you know first aid and get permission to treat the victim before doing anything else. When sending someone to get help, point at a specific person and say something like, "Juan, go call 911 and ask for an ambulance." Don't assume everybody knows what to do.
- ▶ Do not move a badly hurt person unless they are in further danger. It may be necessary to move a person if there is a nearby fire or if the person is lying in the road. But never move an injured person unless it is absolutely necessary.
- ► Check the victim for "hurry cases."
- ► Treat the victim for shock.

How to Get Help in an Emergency

In 98% of the United States, you can dial 911 to get help for all kinds of emergencies, including medical problems. A few communities may have different phone numbers for the police, fire department, emergency medical services (EMS), or rescue squad, so ask your parent or den leader if 911 is correct for your community or if there are different numbers.

When you call for help in an emergency, remember the three W's: who, what, and where.

- ▶ Who: Give your name and the phone number you're calling from. (Some 911 systems can trace your phone number and location, but others can't.)
- ▶ What: Explain the situation. Is it a fire? A car accident? How many people are hurt? What are their injuries?
- ▶ Where: Give your exact location, using either the street address or the names of both streets at the nearest corner.

Never hang up until the operator tells you to because they may need more information. Don't worry; the operator can still send help.

Never call 911 except in actual emergencies. Calling in nonemergency situations is dangerous because it could prevent real emergency calls from getting through.

How to Get Help in Other Situations

At times, you may need to get help in non-emergency situations. You may want to report a suspicious car nearby or a broken traffic light. You may need help with a family problem. Find out how to get help where you live and make a list of the phone numbers. Post the list on your refrigerator so everyone can find the numbers quickly. It's also a clever idea to put your list on a card and carry it with you.



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Demonstrate what to do for hurry cases of first aid: serious bleeding, heart attack or sudden cardiac arrest, stopped breathing, stroke, and poisoning.

A sprained ankle needs first aid, but it's not a life-threatening injury. Other medical problems — called "hurry cases" — require immediate help. Unless someone acts fast, gets help, and gives the right first aid, the victim can die within a few minutes.

THE THREE C'S

When dealing with hurry cases, remember the three C's.

- ▶ Check: Make sure the area is safe for you. Then check the victim to identify the problem. Is the victim breathing or moving? Tap the victim's shoulder and ask, "Are you OK?" Does the victim respond?
- ► Call: Call 911. Call out for help or send two people (if possible) to get help.
- ▶ Care: Care for the victim to the best of your ability while you wait for help to arrive. Some of the steps in treating hurry cases require special training to perform, but it's important to know what they are.

The five hurry cases are:

- Serious bleeding. When blood is spurting from a wound, it must be stopped quickly.
- ► Heart attack or sudden cardiac arrest. If someone's heart has stopped, it must be restarted quickly.

- ► **Stopped breathing**. If breathing has stopped, it must be restarted quickly.
- ▶ **Stroke**. If someone has a stroke (a blockage of blood flow to the brain), they must get medical attention quickly.
- ▶ **Poisoning**. If someone has swallowed poison, it must be made harmless quickly.

PROTECTIVE MEASURES TO TAKE WHEN GIVING FIRST AID

Treat all blood as if it contains germs that can make you sick. Do not use bare hands to stop bleeding; always use a protective barrier. If you have any cuts or scrapes, cover them with a bandage. Always wash your hands and other exposed skin with hot water and soap immediately after treating the victim. When possible, don't use a kitchen sink as that may contaminate the sink and expose others.

The following equipment should be included in all first-aid kits and used when giving first aid to someone in need:

- ▶ **Disposable, latex-free gloves** to be used when stopping bleeding, dressing wounds, performing CPR, or treating a victim who is choking.
- ▶ Plastic goggles or other eye protection to prevent a victim's blood from getting into the rescuer's eyes in the event of serious bleeding or other bodily fluids.
 - ► Antiseptic for use in cleaning exposed skin areas, particularly if soap and water are not available.

HURRY CASE: Serious Bleeding

In a bad accident, you might see blood spurting out of a wound. If blood gushes out of a wound like a fountain rather than oozing or flowing slowly, it must be stopped immediately.

Activate the 3 C's

Put on disposable, latex-free gloves and eye protection (not just eyeglasses), then grab the wound with your gloved hand. Press hard. With your free hand, grab your neckerchief, handkerchief, or another cloth. Fold it into a pad and press it on the wound. If you can, wrap the wound with gauze to hold the pad in place. If not, keep applying pressure with your hand. Don't remove the pad if it gets soaked with blood. Instead, put another pad and bandage over the first.

If the wound is on the arm or leg, raise that limb above the level of the victim's heart. That can help slow the bleeding. (Don't do this if there are other injuries such as a broken bone.)



HURRY CASE: Heart Attack and Sudden Cardiac Arrest

Heart attacks are the No. 1 cause of death in the United States. Most heart attacks happen to adults, but sometimes even young people can experience them. The most common symptom of a heart attack is pain in the center of the chest, but people can have other symptoms as well, including:

- ▶ Pain that radiates to the arms, back, neck, or jaw.
- Sweating when the room is not hot.
- ► Feeling like throwing up.
- Feeling weak.
- ► Sudden, sharp chest pain outside the breastbone.
- Dizziness or lightheadedness.

Activate the 3 C's

If you think a person is having a heart attack, call for medical help at once. If the person becomes unresponsive, begin chest compressions immediately as described below.

Another serious heart problem is sudden cardiac arrest, which occurs when the heart stops pumping. In seconds, the victim will become unresponsive and will stop breathing or will gasp for breath. If you suspect sudden cardiac arrest, call for medical help, begin chest compressions, and locate an automated external defibrillator (AED) if available.

Circulation

Cardiopulmonary resuscitation (CPR) is a way to keep the heart beating until medical help arrives. It requires instruction from a certified instructor. Your den leader can help you find more information.

The steps of CPR for adults include a cycle of 30 chest compressions followed by two rescue breaths.

- Place the heels of your hands on the center of the victim's chest, one on top of the other.
 Lace your fingers together.
- Position yourself over the victim with your shoulders over your hands and your arms straight.
- Give 30 compressions. Push hard and fast. Let the chest rise completely before pushing down again.



Perform two rescue breaths as described in the breathing section on page 116.

- 5. Continue the cycle until one of the following happens:
 - a. The victim shows signs of life (breathing).
 - b. A trained adult or medical help arrives to take over.
 - c. You are too exhausted to continue.
 - d. An AED is ready to use.
 - e. The scene becomes unsafe.

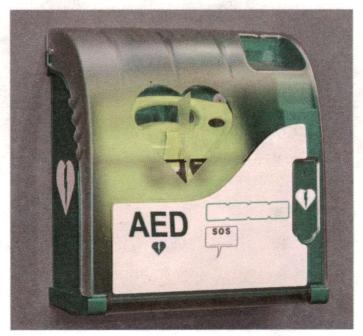


Defibrillation

Find out if there is an AED near the victim. If there is, you can help by retrieving it and turning it on. An AED is a special device that can shock the heart into beating normally again. AEDs are found in schools, shopping malls, airports, houses of worship, and other places where people gather. You have to complete training to use an AED; this training is usually part of CPR training.

HURRY CASE: Stopped Breathing

In drowning cases, electric shock, and some other accidents, the victim's breathing may stop. It must be started again quickly or the person's heart will stop beating and



the person will die. You can help with these problems by providing care until professional medical help arrives.

Activate the 3 C's

Here are the steps you can take:

Airway

With the victim lying on their back, open the airway by pressing down on the forehead and lifting up on the chin. This will keep the tongue from blocking the flow of air. Don't do this if you suspect a neck injury. If the victim starts to vomit, roll them onto the side away from you so the vomit doesn't get inhaled into the lungs. Be sure to roll the body as a unit — not just the upper body. You'll need help to do this.

Breathing

When the victim's airway is open, check for breathing. Place your cheek 1 to 2 inches above the victim's mouth. Look, listen, and feel for movement and breathing. If the person is breathing, you will feel and hear the airflow on your cheek and see and feel the chest rising and falling. If there are no signals that a person is breathing, give two rescue breaths using the following procedure.

Rescue Breathing

Step 1: Place a CPR breathing barrier over the victim's mouth to protect both of you from any diseases that could be spread.

Step 2: While continuing to tilt the head, pinch the victim's nostrils, seal your mouth over their mouth, and blow into it to fill the lungs. The breath should last about one second. Watch to see if the person's chest rises. Remove your mouth, and then give another rescue breath.

Step 3: (For an adult victim) If the victim does not start breathing again after two rescue breaths, their heart may stop beating, too. Immediately begin CPR. (Ask a certified instructor about how to do this for children.)

HURRY CASE: Stroke

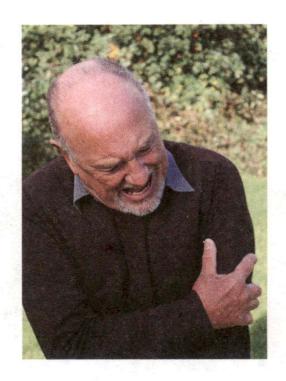
Stroke occurs when the blood supply is cut off to part of the brain. Brain damage and death can result if the victim doesn't get medical help.

Stroke can cause:

- Numbness or weakness in the face, arm, or leg especially on one side.
- Trouble walking, speaking, understanding, or seeing.
- Dizziness.
- ▶ Headache.

Activate the 3 C's

- ▶ A good way to remember the signs of stroke is with the acronym FAST:
- ► Face drooping: Does one side of the person's face droop? Is the person's smile uneven?
- ▶ Arm weakness: Is one arm weak or numb?
- ➤ **Speech difficulty:** Is the person's speech slurred? Does the person have a tough time speaking or repeating a simple sentence?
- ➤ Time to call for help: If you see these signs, call 911 immediately.



HURRY CASE: Poisoning

Activate the 3 C's

Poisoning can be caused by many things, including:

- Eating certain wild mushrooms or berries.
- ➤ Swallowing household cleaning supplies, weed killers, insect poisons, or even things like nail polish remover.
- ► Taking too much medicine.
- ► Breathing in toxic fumes.

If someone has swallowed or breathed in poison, call 911 or 800-222-1222 (the National Poison Help Line) immediately. Tell the operator what the poison is, if you know it, and follow the directions.

Save the poison container so professionals can identify the poison. If a person has breathed in smoke, gas, or other fumes, try to move them to fresh air. Be careful that you do not become a victim yourself, however. Make sure the area is safe first.

It is important always to keep all household cleaners, medicines, weed killers, and insect poisons out of the reach of small children. Locked cabinets are best because children are curious and quickly learn to climb.

Demonstrate how to help a choking victim.

Choking on food or a foreign object can lead to unconsciousness and death. If you see someone choking, act immediately. When you see a person holding their hands to their throat and turning blue, ask if they are choking. If they can speak, cough, or breathe, encourage them to try to cough up what they have swallowed. If not, call 911, or ask a someone else to call 911. Tell the person you know first aid and ask if you can help. If they nod yes, give back blows:

- Give five back blows between the shoulder blades with the heel of your hand.
- ► If the object is not removed, give abdominal thrusts:
 - Position yourself behind the person and reach your arms around their waist.
 - Make a fist with one hand just above the person's belly button.
 Cover the fist with your other hand.
 - ◆ Make a series of five quick thrusts inward and upward to force air from the lungs. (Pretend like you're trying to pick the person up.)
- Alternate between abdominal thrusts and back blows until the object is dislodged, the person becomes unconscious, or medical help arrives.

Because of the possibility of injury, do not practice actual back blows or abdominal thrusts unless you are using a special simulator.



Demonstrate how to treat shock.



When a person is injured or under great stress, the circulatory system might not provide enough blood to all parts of the body. That is called shock. This is a medical term and does not

mean being surprised or scared. The person will feel weak. Their face may get pale. Their skin will feel cold and clammy. They may shiver or vomit.

Do not wait for these signals to appear. Give any severely injured person first aid for shock:

- ► Call 911 for emergency help immediately.
- ▶ Have the person lie down on their back.
- ▶ Raise the feet slightly, unless you think there are injuries to the head, neck, back, hips, or legs. If you do not know, have the person lie flat.
- ▶ If the person is not awake, turn them on their side. But first, be sure the person has no injuries to the head, neck, or back.
- ► If the weather is cool, cover the person with a sheet. If it is hot, do not.
- ▶ Do not give the person anything to eat or drink.
- Stay with the person until help arrives.

Demonstrate how to treat the following: cuts and scratches, burns and scalds, bites and stings of insects and animals, and nosebleeds.

Cuts and Scratches

Cuts and scratches are openings in skin.
They can let in germs that cause infections.
When treating cuts and scratches, be sure to wear disposable, latex-



free gloves and eye protection. Wash your hands thoroughly with soap and water after treating any wounds.

For small wounds, wash the wound with soap and water. Then apply first-aid ointment to help prevent infection if you have the victim's permission and know that they do not have an allergy to the medicine. Keep the wound clean with an adhesive bandage. Change the bandage as often as needed but at least once daily.

For larger cuts, first stop the bleeding by applying direct pressure. Keep the wound as clean as possible to limit infection. Cover an open wound with a sterile gauze pad or a clean cloth folded into a pad. Hold the pad in place with tape or a bandage made out of a neckerchief. Any bandage should be loose enough that you can slide two fingers between it and the person's body. An adult leader should evaluate any large wound. Once the bleeding has stopped, clean the wound as described above.

Anyone suffering a serious wound should be treated for shock and seen by a physician.

Burns and Scalds

Burns and scalds range from simple sunburn to extremely dangerous third-degree burns. The kind of first aid to give depends on the severity of the burn.

First-Degree Burns

First-degree burns only affect the outer surface of the skin, which gets red and sore. Put the burned area in chilly water until the pain stops. If you don't have any water, cover the burn with a clean, dry, loose dressing.



Second-Degree Burns

With second-degree burns, which are also called partial-thickness burns, blisters form on the skin. Put the burned area in chilly water until the pain stops. Gently dry the burned area. Cover it with a sterile gauze pad and hold the pad loosely in place with a bandage. Be careful not to break open blisters as that could cause infection. Don't apply creams, ointments, or sprays. If needed, treat for shock.

An adult should evaluate second-degree burns to determine the need for additional medical help.

Third-Degree Burns

With third-degree burns, which are also called full-thickness burns, the skin may be burned away, and the flesh may be charred. The victim may feel no pain because nerve endings have been burned. You will definitely need to call 911 or local emergency responders and have an adult evaluate the situation. Don't remove clothing from around the burn.

Wrap the victim in a clean sheet. Cover them with blankets if the weather is cool. Treat for shock if needed and stay with the victim until professional medical help arrives.

Sunburn

Sunburn is a common injury among people who enjoy being outdoors. Most sunburns are first-degree burns, although severe sunburn is a second-degree burn and should receive prompt medical attention. All sunburns are dangerous because they can lead to long-term skin damage and even skin cancer when you get older.

No one is immune from sunburn. You can prevent sunburn by using plenty of broad-spectrum sunscreen with a sun protection factor (SPF) of at least 30. Put it on 20 minutes before you go outside and every two hours while you're outside. Reapply it after swimming or if you're sweating a lot.

A broad-brimmed hat, long-sleeved shirt, and long pants will give you even more protection. You should wear sunscreen even on cloudy days. The ultraviolet radiation from the sun that causes a sunburn can pass through clouds. It can also bounce off water and snow and cause damage to your skin.

Frostbite

Frostbite happens when the skin gets cold enough to freeze. A sure sign of frostbite is grayish-white patches on the skin. Some

victims will complain that their ears, nose, fingers, or feet feel painful and then numb. Others won't notice anything.

If you suspect frostbite, get the person into a tent or building, then gently warm the affected area and keep it warm. If an ear or cheek is frozen, remove your glove and warm the injury with the palm of your hand. Slip a frostbitten hand under your clothing and tuck it beneath an armpit. Treat frozen toes by putting the victim's bare feet against the warm skin of another person. Avoid rubbing frostbitten flesh. That can damage tissue and skin.

You can also warm a frozen part by holding it in warm — not hot — running water. Have the person exercise injured fingers or toes, and don't let the injured area freeze again. Get the victim to a doctor.

What is the best way to avoid frostbite? Stay warm and dry. Wear warm gloves, socks, and a hat. Wool and synthetic materials will keep you warm when they get wet; cotton will not. Dress in layers so you can regulate your body temperature by adding or removing articles of clothing.

Bites and Stings

Tick Bites

Ticks are small hard-shelled arachnids that bury their heads in your skin. Protect yourself whenever you're in tick-infested woodlands and fields by wearing long pants and a long-sleeved shirt.

Button your collar and tuck your pant legs into your socks. Insect repellents can help too.

Inspect yourself daily, especially the warm and hairy parts of your body, and immediately remove any ticks you find. If a tick has attached itself, ask an adult to help you. The adult will grasp

the tick by its head with tweezers close to the skin and gently pull until it comes loose. It's important not to squeeze, twist, or jerk the tick, which could leave its mouth parts in the skin.

Wash the wound with soap and water and apply first-aid ointment. After dealing with a tick, thoroughly wash your hands. If you develop a rash or flulike symptoms or otherwise feel ill in the next days or weeks after being bitten, talk to your doctor.

Bee and Wasp Stings

Scrape away a bee or wasp stinger with the edge of a card or ask an adult to help. Another method is to put a piece of tape on top of the area to pull out the stinger. Don't try to squeeze it out. That will force more venom into

the skin from the sac attached to the stinger.

An ice pack might reduce pain and swelling. Some people have severe allergies to bee and wasp stings. If someone has trouble breathing after being stung or feels their throat swelling or closing up, seek medical help immediately and alert an adult. Find out if the person is carrying a kit for treating anaphylactic shock and help them administer the medication.

Chigger Bites

Chiggers are almost invisible. Their bites cause itching and small welts. Try not to scratch chigger bites. You might find some relief by covering chigger bites with calamine lotion or hydrocortisone cream.

Spider Bites

Most spider bites cause only minor pain and itching that go away in a fairly short amount of time. Only a few types of spiders' bites cause serious reactions. Victims of these spider bites should be treated for shock and seen by a doctor as soon as possible. When possible, try to identify the spider or take the dead spider to the physician's office. Be sure that you don't put yourself in danger to do so.

The bite of a female black widow spider can cause redness and sharp pain at the wound site. The victim might suffer sweating, nausea and vomiting, stomach pain and cramps, severe muscle pain and spasms, and shock. Breathing might become difficult. The bite of a brown recluse spider doesn't always hurt right away, but within two to eight hours there can be pain, redness, and swelling at the wound. An



Brown recluse

open sore is likely to develop. The victim might suffer fever, chills, nausea, vomiting, joint pain, and a faint rash.

Snakebites

Snakes are common in many parts of the country, but bites from them are rare. Snakes try to avoid humans and normally strike only when they sense danger. Snakebites seldom result in death. Use a hiking stick to poke among stones and brush ahead of you when you walk through areas where snakes are common. Remember to stay on the trails. Watch where you put your hands as you collect firewood or climb over rocks and logs.

The bite of a non-venomous snake causes only minor puncture wounds. You can treat these like other puncture wounds: Just wash with soap and water, then apply first-aid ointment and an adhesive bandage. Before applying medicine, put on disposable, latex-free gloves; ask about any drug allergies; and get permission. Get medical

attention if you see signs of an infection.

Copperhead snake

The bite of a venomous snake can cause sharp, burning pain. The area around the bite might swell and become discolored. If you think a person has been bitten by a venomous snake, call for help, and follow these steps:

- ► Keep the person calm and still.
- ▶ Do not let the victim walk unless it is unavoidable for example, if you have to evacuate the area. If possible, have an adult carry the victim to a safer area or to medical help.
- ▶ Immobilize the part of the body that was bitten and position it below the level of the heart.
- ▶ Remove any rings or jewelry from the bitten extremity.
- ► Clean the wound with antiseptic and cover it with a clean bandage.
- ➤ Do not apply ice or a tourniquet.
- ▶ Do not cut the wound or try to suck out the venom.
- ▶ Do not give the victim caffeine or alcohol.
- ► Try to remember the snake's shape and color pattern so you can describe it later, but do not try to capture it.

Nosebleeds

A nosebleed can look bad, but it will usually stop in just a few minutes. Have the victim sit up and lean forward to prevent blood from draining into the throat. Pinch the nostrils together for 10 minutes to maintain pressure on the flow and stop the bleeding. Apply a cool, wet cloth to the victim's nose and face above where you are pinching. (As always, wear latex-free, disposable gloves.) Watch for symptoms of shock and treat if needed. Call for help if the bleeding doesn't stop after 15 minutes.

Make a personal first-aid kit. Demonstrate the proper use of each item in your first-aid kit.



Personal First-Aid Kit

You should make a first-aid kit to carry on outings.

Include these items:

- ► Adhesive bandages
- ► Moleskin
- ► First-aid ointment
- ► Latex-free gloves



- Gauze pads
- ► Adhesive tape
- ► Soap
- ▶ Scissors
- ▶ Mouth barrier
- ▶ Pencil and paper
- ► Antiseptic wipes

Every car and home should have a first-aid kit so that supplies will be there when you need them.

Car First-Aid Kit

All the items listed above plus:

- ► Small flashlight and spare batteries
- ▶ White handkerchief (to attach to the car so you can attract attention if the car is disabled)
- ▶ Blanket
- ► Large red and white sign that reads "Send help!" (Place in the front or rear window in an emergency.)



Home First-Aid Kit

Here are the things you should include:

- ► Tweezers
- ▶ Box of latex-free adhesive bandages (assorted sizes)
- ▶ 12 each of 3-by-3-inch and 4-by-4-inch sterile pads
- ▶ Roll of 1-inch and roll of 2-inch latex-free adhesive tape
- ▶ Scissors
- ► Safety pins
- ► Two 1-inch roller bandages
- ► Two 2-inch roller bandages
- ▶ Three cravat, or triangular, bandages
- ▶ Two 17-inch splints of thin board



- ▶ Calamine lotion
- ► Latex-free, disposable gloves
- ► Mouth-barrier device
- ▶ Goggles
- ▶ Hand sanitizer





AS SEEN IN SCOUT LIFE MAGAZINE!





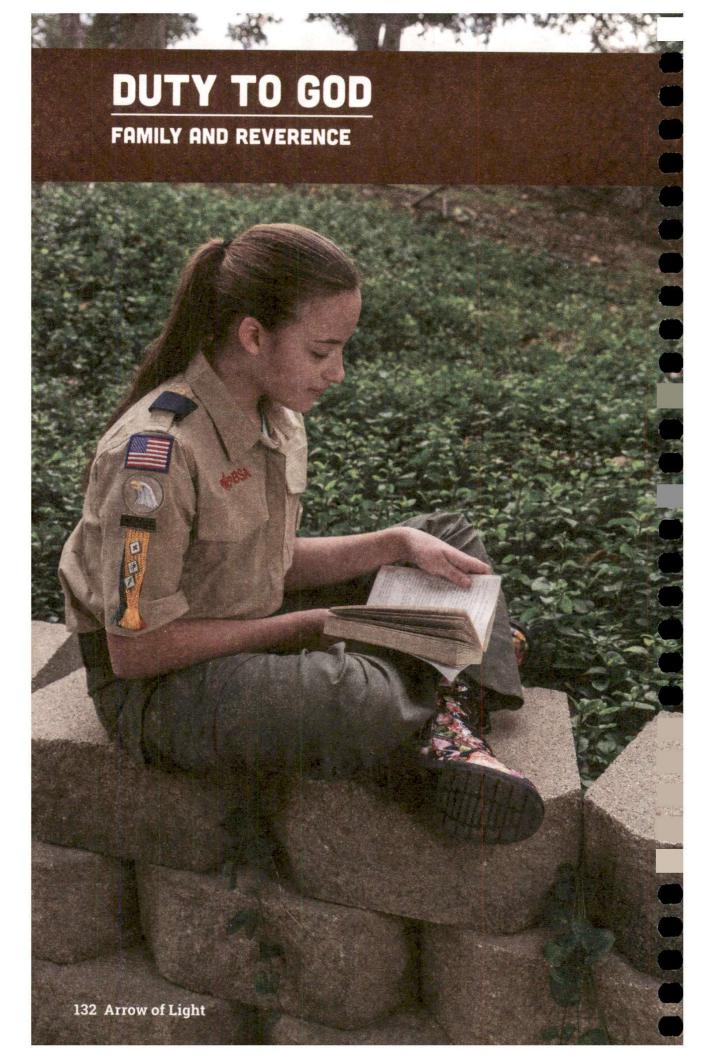


Nathaniel and his dad were able to calm the man, lowering his heart rate and slowing the bleeding.

them the information on the man's condition. They continued applying pressure to the incision before an ambulance took him to a hospital. They later learned the man was stable and recovering.

"Scouts In Action" subjects come from the National BSA Court of Honor. If you know of an act of heroism that should be recognized, contact your local BSA council office for a lifesaving or meritorious award application. Note: Consult approved safety guidelines, as actions depicted here may not precisely follow standard procedures.





SNAPSHOT OF ADVENTURE



Duty to God ... Your family and religious leaders teach you about God and the ways you can serve. You can do your duty to God by following the wisdom of those teachings and by defending the

rights of others to practice their own beliefs. Reverent means that a Scout is faithful in their religious duties and respects the beliefs of others. This fundamental of good citizenship should be kept before them.

REQUIREMENTS

Approved by

- 1. Discuss with your parent or legal guardian your family's faith traditions or one of your choosing. Choose a view or value of that faith tradition that is related to the Scout Law. Discuss with your family how each family member demonstrates this value.
- 2. Meet with a representative of a faith-based organization in your local community who provides a service that assists people in crisis regardless of their faith. Identify who they help and how.
- 3. Discuss with your parent, legal guardian, or an adult leader what "Duty to God" means to you. Tell how you practice your Duty to God in your daily life.



- Required Adventure
- Scan for this Adventure page

Discuss with your parent or legal guardian your family's faith traditions or one of your choosing. Choose a view or value of the faith tradition that is related to the Scout Law. Discuss with your family how each family member demonstrates this value.



What does your family's faith tradition say about how you should treat other people?

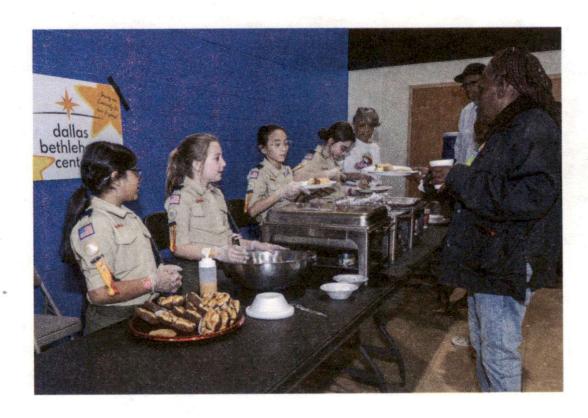
Are there

connections between the values of the Scout Law and your faith that are the same or similar?

Meet with a representative of a faith-based organization in your local community who provides a service that assists people in crisis regardless of their faith. Identify who they help and how.

Communities that we live in have problems such as homelessness, poverty, and hunger. Our local, state, and federal government may have programs to assist with solving or easing these problems, but at times a government agency's ability to do so is not enough. In many communities, faith-based organizations can help fill gaps in services.

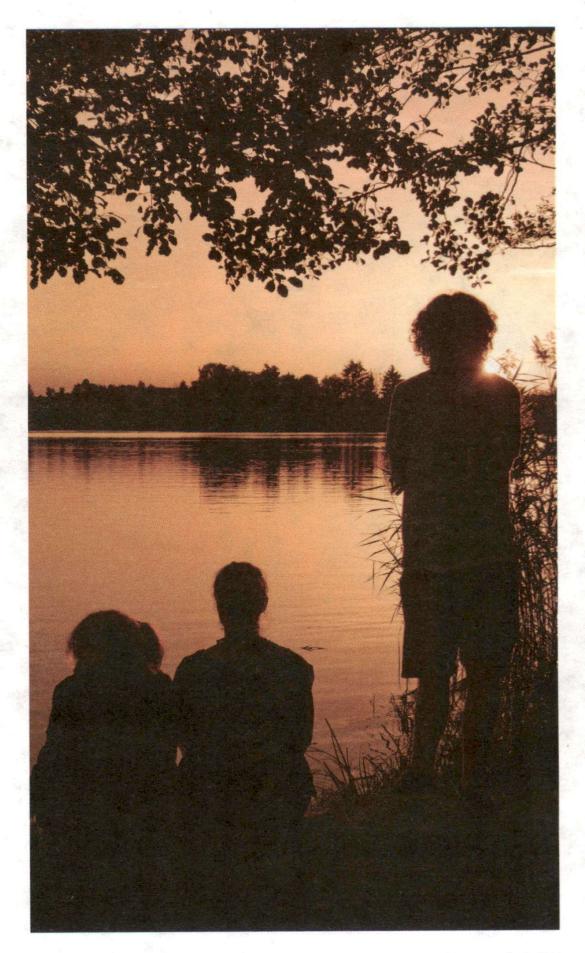
You may discover a faith-based organization through your participation in a service project, or you may conduct research on a social issue in your community and identify services that are available.



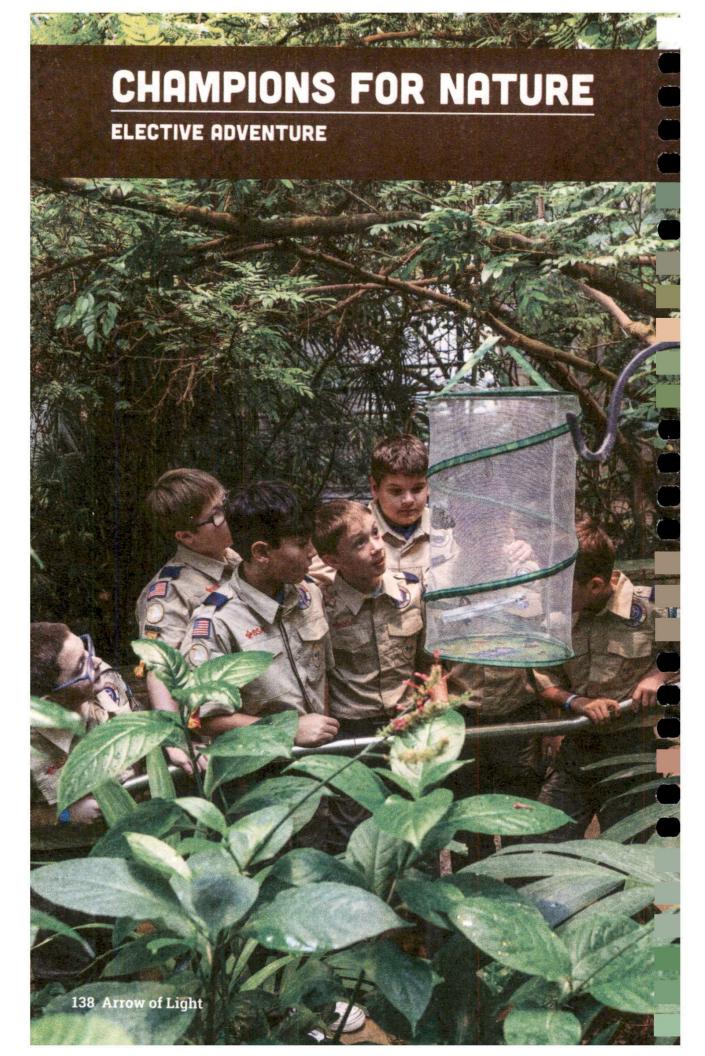
Discuss with your parent, legal guardian, or an adult leader what "Duty to God" means to you. Tell how you practice your Duty to God in your daily life.

Based on your religion and family faith traditions, discuss what you feel your duty to God is. What responsibilities do you have to your religion and family faith traditions?

- What are things you currently do to meet these responsibilities?
- ► What are some things you could start doing to meet these responsibilities?
- ► Are there responsibilities to your religion or family faith traditions you don't yet have but will have when you become an adult?



Duty to God 137



SNAPSHOT OF ADVENTURE



About half of the land on Earth is being used for some type of agriculture. Agriculture is often in the form of a farm. How we farm, either growing crops or raising animals for food, has an impact on our

planet. The country of India has the most land mass used for agriculture. The United States is second. Combined, these two countries account for 22% of the land on the planet being used for agriculture. How the United States grows, distributes, and uses food has an impact on the world. In this Adventure, you will explore food and ways to conserve it, and the resources used to produce food.

REQUIREMENTS	Approved by
1. Identify foods grown or processed in your state.	
2. Determine the benefits of purchasing food that is locally grown or processed.	
3. Explore the concept of a food desert.4. Explore the concept of a food oasis.	
5. Learn how individuals can reduce food waste.	
6. Participate in a conservation service project.	

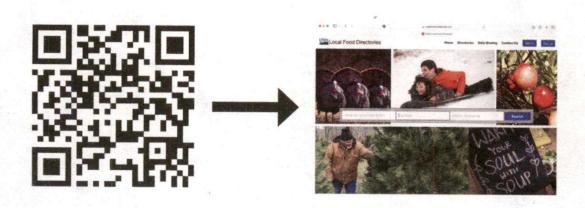


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Identify foods grown or processed in your state.

Every state in the United States has some type of agricultural activity. Large states like Texas are known for cattle, which require a lot of land. Grapes grown in parts of California require a certain type of soil and climate. The smallest state, Rhode Island, has dairy farms. You may even have a fishery, a farm that grows and raises fish in a controlled environment.

One way to identify foods grown or processed in your state is to see if there is a farmers' market near you. Farmers' markets provide local farmers a chance to sell what they grow directly to the public. The United States Department of Agriculture has an online tool to help you find a farmers' market near you. With an adult, visit www.usdalocalfoodportal.com, enter your city and state, select **Farmers Market** in the directory, and click **Search**.



Determine the benefits of purchasing food that is locally grown or processed.

A farmer usually sells their crops or animals to a food distributor. The food distributor may sell the product to a company that processes the food. That company then sells to the grocery store, and that is where the product is sold to the public. The further away the farm is from the market where you buy the food, the more resources it takes to get it to you. For example, to ship fruit from Florida to New York, it takes special packaging, shipping containers that can preserve freshness, and a lot more gas than it takes to go to a nearby town and buy it from a farmer. When we buy products that are locally grown, it can lower the cost of those products and our impact on our environment.

Another benefit to buying food that is locally grown is that it helps your local economy, or how people make and spend money. When you buy products grown or made in your local community the money you spend stays in your community. The money a local farmer makes is spent at local businesses and used to pay local taxes. Local taxes pay for or help maintain roads you drive, parks you visit, and schools you attend.

If you visit a farmers' market or go to the produce department at a grocery store, you can find out a lot more about the benefits of purchasing food that is locally grown or processed.

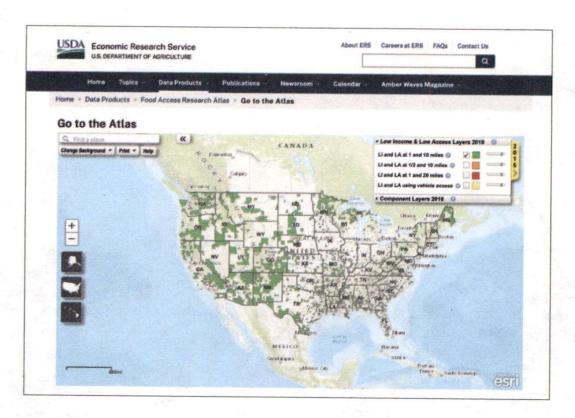


Explore the concept of a food desert.

A food desert is an area that has limited access to affordable and nutritious food. In some communities people walk, ride their bikes, or rely on public transportation to get around. If affordable and nutritious food can't be reached with these means of transportation, it can create a food desert.

The foods that are available in food deserts are likely to be less healthy, such as fast food or prepackaged foods, and more expensive than fresh, nutritious foods. As a result, food deserts may put people who live in these communities at increased risk of health problems and other problems related to poor nutrition.

To locate food deserts in the United States, visit the United States Department of Agriculture's website at www.ers.usda.gov/data-products/food-access-research-atlas.aspx, where you'll find the Food Access Research Atlas.



Explore the concept of a food oasis.

A desert is a large, extremely dry area of land with little vegetation. A desert oasis happens when water from an aquifer or underground river comes to the surface of a desert allowing vegetation to grow.

Like a desert oasis, a food oasis happens when affordable and nutritious food is available in the middle of a food desert. A food oasis is one solution to reduce food deserts. The good news is that there are several ways to form a food oasis.

Neighborhoods or communities that have access to land may come together to form a community garden that can become a food oasis. A community garden may have a section that is assigned to an individual or there may be a rotation of volunteers who tend to the garden. When the garden produces fruits or vegetables, they may be offered for free to the community or sold to cover the costs of maintaining the garden.

A community garden can be established just about anywhere. In cities, they can be on rooftops using raised garden beds. They can be in a local park or even at your school.

Another form of a food oasis is a farmers' market. A farmers' market brings those who grow food directly to the community. It may be a temporary market that is held for a couple of hours on a weekend. There are even some farmers who have created farmers' market food trucks that they drive around to sell fresh fruits and vegetables.

The ideal situation is for a food oasis to become permanent. When food markets in a food desert start to carry fresh and nutritious foods or new, accessible food markets open in communities in food deserts, the food oasis can take a community out of being in a food desert.

Learn how individuals can reduce food waste.

Take what you want, but eat what you take. Keep this in mind not only when you're at home, but also when you go out to eat at restaurants. When you go out to eat, consider the amount of food you're ordering. If you have leftovers, will you eat them the next day?

You can reduce food waste when you buy food from a grocery store. Planning your meals before you go food shopping can reduce excess waste from food spoiling. Planning meals



can also help you save money by creating a weekly menu that uses the same ingredients. That's because you can usually get more for your money when you buy a larger quantity of something rather than just a small amount of it.

What are some other ways you can reduce food waste?



Participate in a conservation service project.



With your patrol, pack, or family conduct a conservation service project. Maybe you can conduct a project that will help with your local agriculture.

Here are some projects that can help reduce food waste.

- ▶ In the fall, collect pumpkins to donate to local cattle or livestock farms.
- ▶ Start a community garden where families can grow a garden together and share the fruits and vegetables they grow.



SNAPSHOT OF ADVENTURE



Are you ready for a 10-mile bike ride? Gather your Scout Basic Essentials, check your bike and safety gear, and get ready to hit the open road or trail. Cycling is a wonderful way to travel and a great hobby to stay physically strong.

REQUIREMENTS	Approved by
 Decide on gear and supplies you should bring for a long bike ride. Discover how multi-gear bicycles work and how they benefit a rider. Show how to lubricate a chain. Pick a bicycle lock that you will use. Demonstrate how it locks and unlocks, 	
 how it secures your bicycle, and how you carry it while you are riding your bicycle. 5. Repair a flat tire. 6. With your patrol, pack, or family, use a map and plan a bicycle ride that is at least 10 miles. 7. With your patrol, pack, or family and using the buddy system, go on a bicycle ride that is a minimum of 10 miles. 	



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Decide on gear and supplies you should bring for a long bike ride.

The Scout Basic Essentials (page 29) are a must for a long bike ride. You'll need a few other items to be prepared for a cycling activity, as well. Some of the gear is personal, and some will benefit your group. As a group, you'll need to decide how to divide up the group gear and who will carry which pieces of the group gear.



Personal bike gear

- ▶ Bike helmet and gloves
- ▶ Proper shoes
- ► Appropriate clothes







Group gear

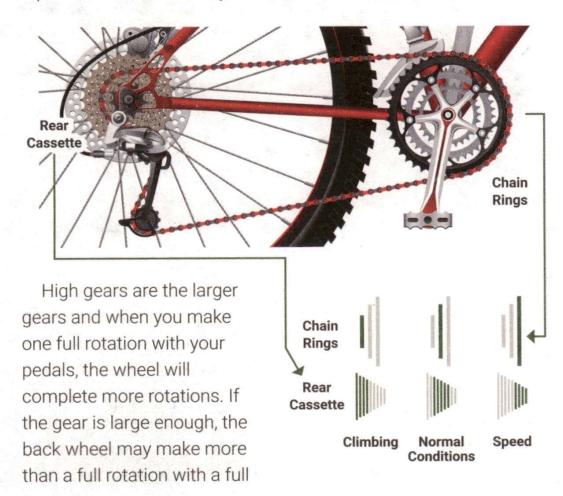
- ▶ Bike pump
- ► Tire patches
- Group first-aid kit

Discover how multi-gear bicycles work and how they benefit a rider.

Gears are considered simple machines. Gears on a bike allow the rider to keep pedaling at a steady rate whether going uphill or downhill.

There are several different-sized gears on the back of your bike, and the bike chain goes around one of them. When you shift gears, a device pushes the chain off one gear and onto another.

On a bike that has no gears, every rotation you make with your pedals makes one rotation on the back wheel. Bikes with gears can change the number of rotations you make with your pedals to equal one full rotation of your back tire.





rotation of your pedal. This would mean when you pedal once, the back tire will go around more than once. This makes it harder to pedal. High gears are used when you want to go fast on flat areas or when you're going downhill.

Low gears are smaller and when you make one full rotation with your pedals, the wheel will complete less rotation. This makes it easier to pedal but it takes more rotations of your pedal to make the back wheel go around just once. Low gears are used to go uphill.

When you're riding and get into a good rhythm of pedaling, you want to keep that rhythm. As your bike path changes, you adjust your gears so you can keep the same rhythm.

Show how to lubricate a chain.

It is best to use oil that is designed for bike chains. Most of these products will come in a small bottle that has a small hole for the oil to come out when you squeeze it. Avoid using lubrication in spray cans as it can get onto other parts of your bike that need to stay dry, like your brake pads.

Make sure your bike is secured properly. (Maybe your buddy can hold it still.) With your hand, back-pedal the bike so the chain is moving, but the back tire is not. With your other hand, apply the oil to the chain as it is moving. Make sure to apply enough oil so it covers the complete chain. Stop applying the oil and continue to pedal with your hand to allow the oil to work into the chain.



Pick a bicycle lock that you will use.

Demonstrate how it locks and unlocks, how it secures your bicycle, and how you carry it while you are riding your bicycle.

There are three main types of bike lock - chain, cable, and D-lock.

Chain locks are metal chains that have a type of lock connecting the two ends of the chain. The lock may be a padlock that requires a key or one that requires a combination code to unlock it.

Cable locks are similar to chain locks but instead of chain, they're made of a strong metal cable. Cable locks weigh less and are more flexible than chain locks.

Like the lock on a chain lock, a cable lock typically requires a key or a combination code to unlock it.

D-locks are made from a thick metal bar bent in the

shape of a U. A straight bar connects the two ends and creates a lock that looks like the letter D. D-locks usually require a key to unlock them.

When using a lock on your bike, you want to make sure that you secure the lock around a part of the bike that is solid and that you attach the lock to something solid. Most bike stands are designed for attaching a bike lock.

If your bike has tires that can come off easily, it may be using a pinch bolt system. A pinch bolt looks like a lever. You pull the lever back to loosen the wheel, allowing you to remove the wheel from the frame. If your bike uses this system, make sure that your lock can secure your wheels in addition to the frame.



Repair a flat tire.



When repairing a flat tire, always read and follow the owner's manual of your bike and read and follow the instructions of any products you are using to repair your flat tire.



First, remove the wheel with the flat tire. Make sure to release your brakes, then the wheel. Once the wheel is off, remove any air that is still in the tire and use a tire lever to remove the outer tire and get to the tire tube.



Now look for the cause of the flat by inspecting the wheel, tire, and tube for the location and causes of tears or punctures. Patch or replace the



154 Arrow of Light





tube. Follow the directions on the bike patch. Most patches are simply rubber that is applied with special glue. If you're repairing a tire while on a bike ride, you may want to replace the tube with a new one and fix the damaged one later. That means you may need to carry a spare tube with you. Now place your wheel back on your bike.





If you're repairing a flat at home, one way to check for punctures in the tire or tube is to fill the tire up with air and listen for hissing where the air is escaping. If this doesn't work, spray the tire with soapy water and look for bubbles that form where the air is escaping.





With your patrol, pack, or family, use a map and plan a bicycle ride that is at least 10 miles.

It may take an hour or more for you to bike 10 miles. A professional cyclist can travel 25 miles per hour or more on a flat trail. For this Adventure, it's recommended that you find a designated bike trail that is flat, especially if you have younger Scouts or family members who will be joining you.

When planning your path for your bike ride, consider these questions:

- ► Is the trail paved or rugged?
- ▶ Can everyone who will be on the bike ride handle the conditions?
- ▶ Is the trail flat or will there be inclines and declines?
- ▶ Are there sites or things you want to stop and see?
- ► Are there areas where you can rest?

Make sure to tell a responsible adult who is not going on the bike ride the path you plan to take, when you will start, any stops you plan on making, and when you plan to get back.



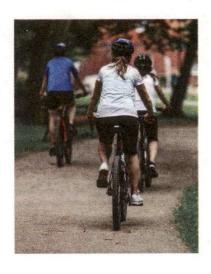
With your patrol, pack, or family and using the buddy system, go on a bicycle ride that is a minimum of 10 miles.

Grab your Scout Basic Essentials, complete a bike safety check, wear your helmet and safety gear, and grab a buddy. It's time to go for a ride!

Bike rides are most enjoyable when taken on paths or trails designed for bikes, away from vehicle traffic and free of hazards. During your 10-mile bike ride, take a break and drink some water if you feel the need.

Cycling with your patrol, pack, or family gives a sense of friendship and motivation. When riding as a group, here are some things to keep in mind:

- ▶ Remember to ride close to your buddy. You want to be the first person there if they fall or need help.
- ► Have a ride leader. This is the person who is at the front of the group. They set the speed or pace of the ride, but make sure that they do not ride so far ahead of others in the group that some struggle to keep up. The ride leader can switch out as needed.
- ▶ Have a ride sweeper. This is the person who is at the back of the group. They do not let anyone get behind them to ensure that no one gets left behind. If the group is riding too fast for some riders, the sweeper asks the faster riders to slow down. They also decide who the ride leader is so they can switch

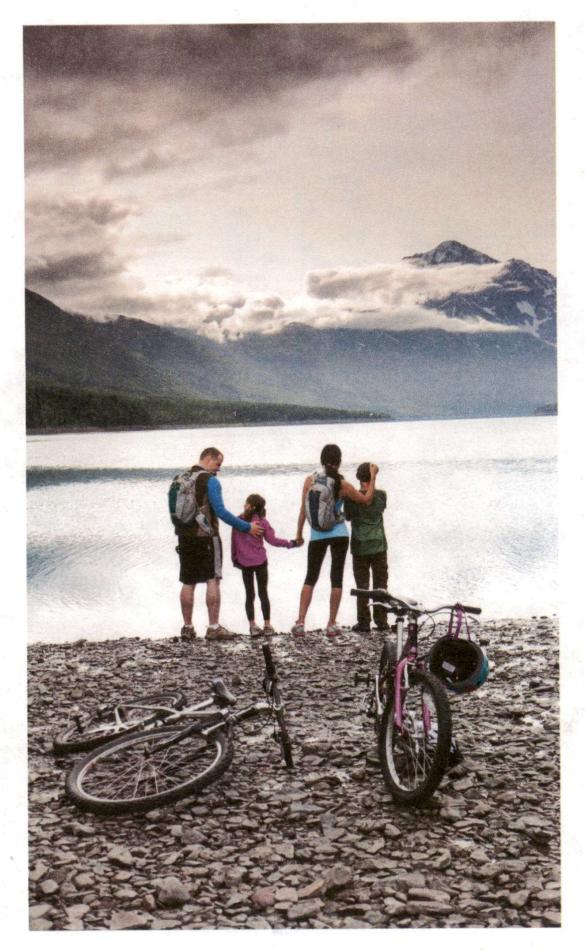


a ride leader who is going too fast with one who has a pace that is comfortable for everyone.

▶ Communicate. Talking and signaling to group members about what you plan to do (like stopping or turning) and about possible obstacles is important to keep the group safe. If you're uncomfortable taking one hand off your handlebar to signal, speak up and use your voice to communicate to other riders. Remember, everyone in the group must signal, not just those at the front. Point out and vocalize obstacles on the road that could cause flat tires or crashes if not avoided and communicate if you need to stop for any reason.

Here are some personal responsibilities to keep in mind whenever you ride a bike:

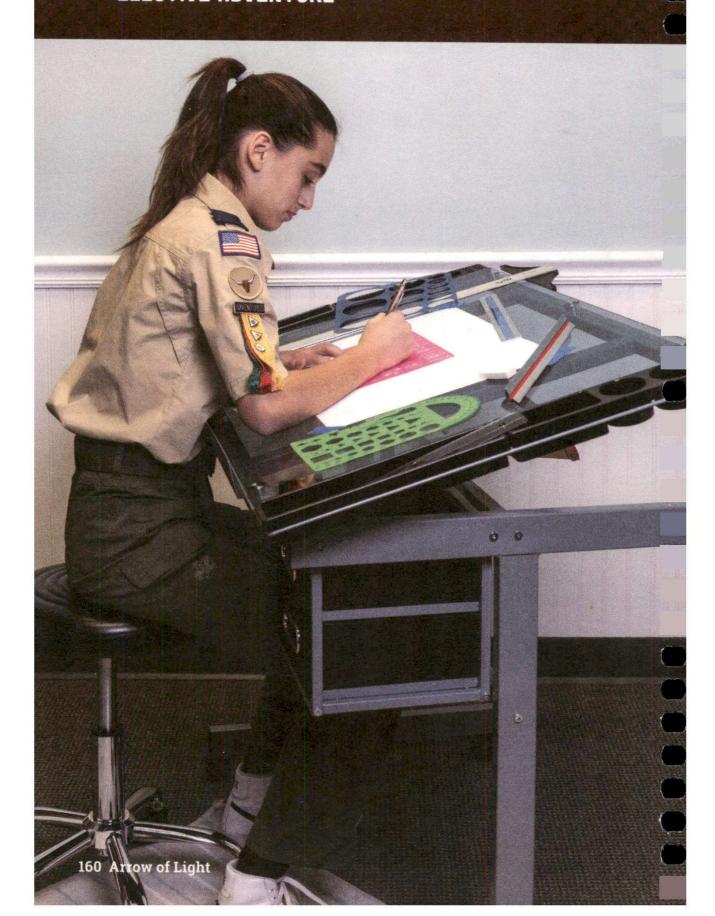
- ► Always wear your helmet and other safety gear.
- ► Follow all rules of the trail and/or road.
- ▶ Let the group know if everyone is going too fast for you.
- ▶ Let the group know if you need to stop for any reason.
- ▶ If someone has to make a repair or just needs a break, be patient.
- Never overlap wheels with another rider.
- ▶ Leave enough distance between your front wheel and the rider in front of you so you can safely stop if they have to use their brakes.



Cycling 159

ENGINEER

ELECTIVE ADVENTURE



SNAPSHOT OF ADVENTURE



Lots of people have great ideas: flying to the moon, tunneling under rivers, building robots that walk and talk, or making triple-loop roller coasters. Engineers turn those ideas into reality. They use

science, math, and creative thinking to improve people's lives. In this Adventure, you will learn what engineers do. Even better, you can do some engineering projects of your own. So put on your thinking cap and get ready to think like an engineer!

REQUIREMENTS 1. Learn the focus, related sciences, and products of civil, electrical, and mechanical engineers. 2. Pick one of the engineering fields from requirement 1 to complete the following requirements. 3. Examine a set of blueprints or specifications used by your choice of engineer. 4. Identify a project that you would like to build. 5. Using the engineering process, build your project.



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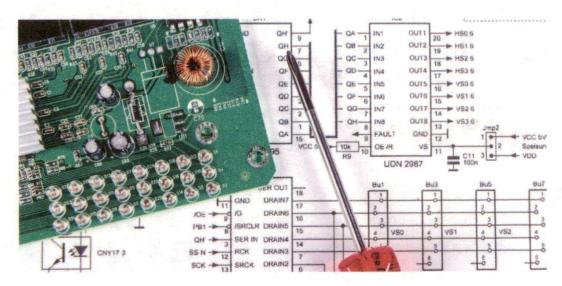
Learn the focus, related sciences, and products of civil, electrical, and mechanical engineers.

Engineers design everything from tiny materials you can see only through a microscope to spacecraft powerful enough to escape the Earth's gravity. Most engineers work in an area (called a discipline) that focuses on a specific type of project.

Engineers from different disciplines work together on many projects. For example, if you were building a spaceship, you would need aerospace engineers, computer engineers, electrical engineers, mechanical engineers, and several other types of engineers that aren't listed here.



Civil engineers plan, design, construct, maintain, or operate infrastructure — like roads, bridges, and water plants — while protecting the public and environmental health. Civil engineers may also work on improving or repairing existing infrastructure. Highways, bridges, water plants, and other things that civil engineers work on are often owned and operated by the federal, state, or local government.



Electrical engineers design, develop, test, and supervise the manufacture of electrical equipment, such as electric motors, radar and navigation systems, communications systems, or power generation equipment. Electrical engineers also design the electrical systems of automobiles and aircraft.

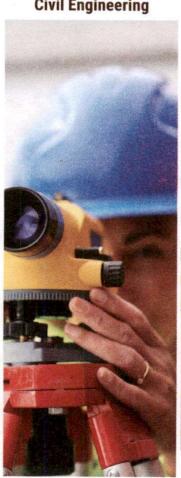


Mechanical engineers plan, design, construct, maintain and/ or operate machines that use power, generate power, or involve force or movement. Mechanical engineers may work to improve existing machines, or they may invent new machines. Mechanical engineers often specialize in a specific area like engines, robotics, or even biotechnology.

Pick one of the engineering fields from requirement 1 to complete the following requirements.

Think about which engineering discipline interests you, and choose from civil, electrical, or mechanical to complete the rest of the requirements.







Electrical Engineering

Mechanical Engineering



Examine a set of blueprints or specifications used by your choice of engineer.

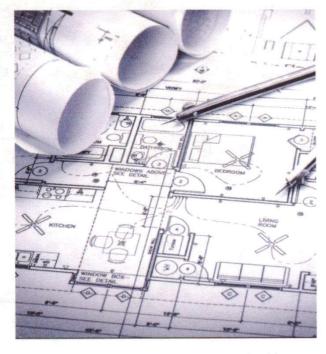
BLUEPRINTS

A written and/or picture design of a project is called a blueprint. Structural, civil, and electrical engineers are a few of the engineers who use blueprints to assist them with their projects. Why are these designs called blueprints? When they were first introduced in the 19th century, they were made with a process that resulted in white lines on a blue background.

Before you design your own project, look at a set of blueprints. You may use your local library, the internet, or an individual you know who is an engineer or works in the construction field to find blueprints. House plans are good examples because many of the pictures they contain will be familiar to you.

Depending on the project, blueprints can be very complicated. Some include hundreds of pages of information. You will find pictures that show the finished project from every side,

measurements of every part of the project, and a list of materials to be used in the project. Blueprints are designed to be so complete that a qualified builder could complete the project without any other information.



Identify a project that you would like to build.

Here is a project you might consider building.

Have you ever been on a roller coaster? Constructing a roller coaster requires several types of engineers to work together. Here's a roller coaster you can build, and it won't take a team of engineers. Use the engineering process to design and build your paper roller coaster.

PAPER ROLLER COASTER

Materials

- ☐ Sturdy square of cardboard for a base
- ☐ Construction paper or cardstock (it needs to be flexible)
- ☐ Pencil
- □ Ruler
- ☐ Tape
- ☐ Scissors

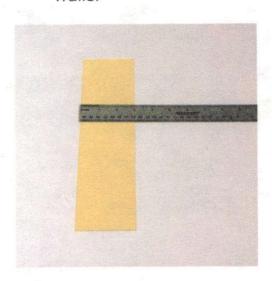


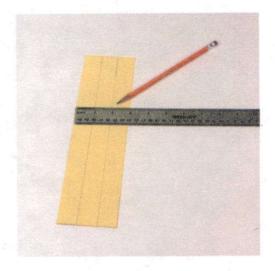
Instructions

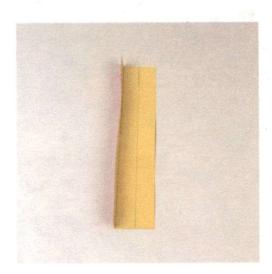
Before you try building an entire roller coaster, practice building the individual track segments. Follow the instructions to draw with a pencil and ruler and cut out each segment. You can always use your segments in your final construction; this will also help you when you design your coaster.

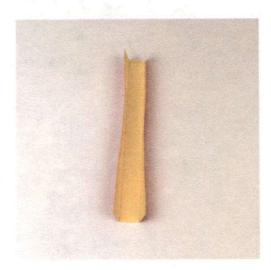
To build a straight segment:

- 1. Cut a 3-inch-wide strip of paper.
- 2. Draw two parallel lines that divide it into three 1-inch-wide strips.
- 3. Fold the two sides up 90 degrees along those lines to form walls.



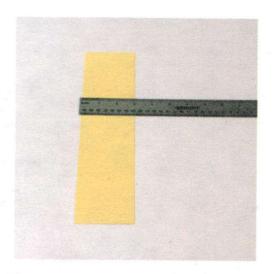


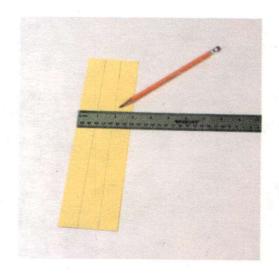


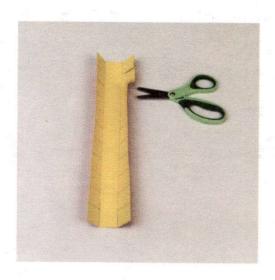


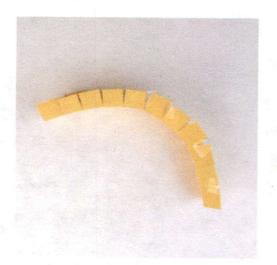
To build a loop or a hill:

- 1. Cut a 3-inch-wide strip of paper.
- 2. Draw two parallel lines that divide it into three 1-inch-wide strips.
- 3. Make marks every 1 inch along the long edges of the paper.
- 4. Cut 1 inch inward from these marks to form tabs.
- 5. Fold the tabs up 90 degrees.
- Bend the track into the shape you want and tape the tabs together to hold it in place. This step is easier with two people, one to hold the track in place and one to do the taping.



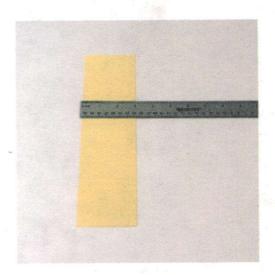


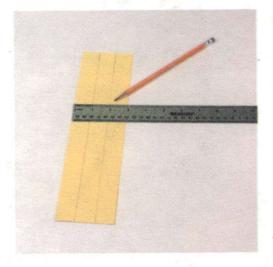


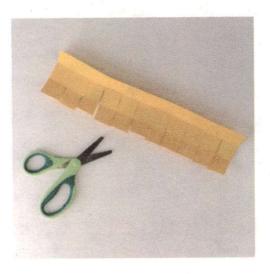


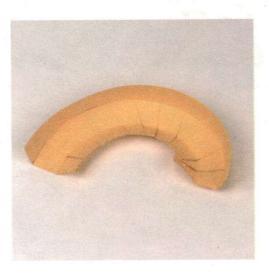
To build a curve:

- 1. Cut a 3-inch-wide strip of paper.
- 2. Draw two parallel lines that divide it into three 1-inch-wide strips.
- 3. Make marks every 1 inch along one long edge of the paper.
- 4. Cut inward 2 inches from these marks.
- 5. Fold up the uncut side of the paper 90 degrees to form a wall.
- 6. Fold up the tabs on the other side to form the other wall.
- 7. Since the bottom portion of the track is cut into segments, you can bend it horizontally to form a curve. Tape the tabs together to hold the curve in place.





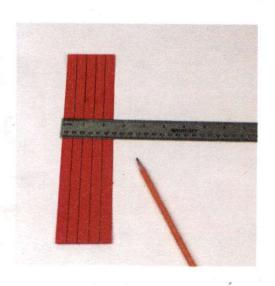


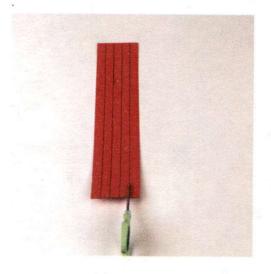


To build a support strut:

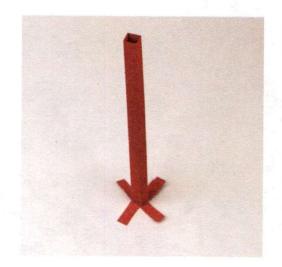
- 1. Cut a 2.5-inch-wide strip of paper.
- 2. Draw four parallel lines that divide it into five 0.5-inch-wide strips.
- 3. Cut 1 inch inward along these lines from one edge.
- 4. Fold along the lines to form a square shape (so two of the segments overlap) and use tape to hold in place.

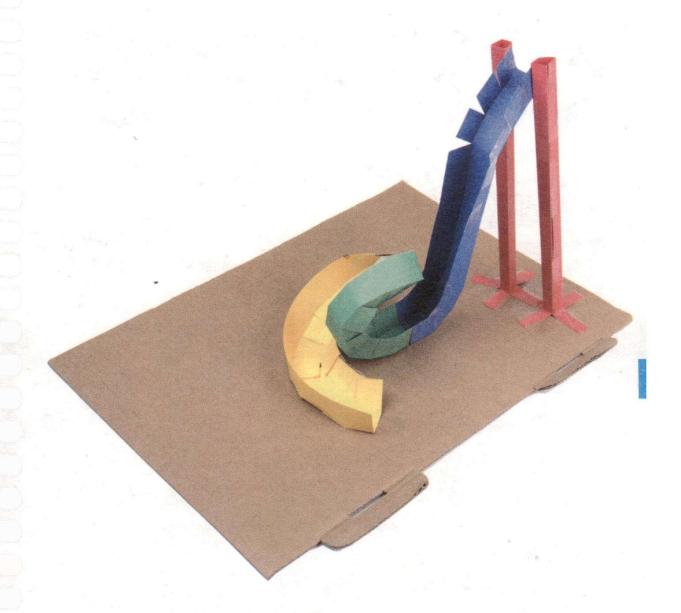
Fold the tabs you cut at the end outward. This will allow you to tape the tabs flat to a piece of cardboard so your strut can stand upright.











Before putting all the pieces together for your marble roller coaster, make a simple drawing of what you want your roller coaster to look like. It is best to keep your first design simple. Look at your design and figure out how many of each of the pieces listed above you need to make to build your design.

Keep in mind that the marble will need to start high. Gravity makes the marble move through the track. If you make the track too long, the marble will not have enough momentum to complete the track.

Using the engineering process, build your project.

THE ENGINEERING PROCESS

To understand how an engineer might approach a project, let's look at the engineering process. After an engineer becomes aware of a need, they gather information, and then make a design. The building phase begins after that.

Here is how you might use that process to construct a small item for your bedroom:

1. Determine your need.

Let's say you don't have anything next to your bed to set your books and alarm clock on. You need a small table.

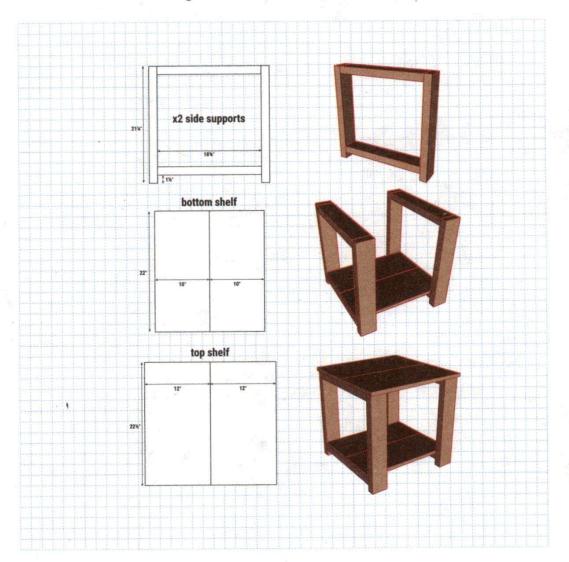
2. Gather information.

Of course, tables come in all sorts of shapes and styles. You could ask questions like these to refine your idea:

- ► What will I put on the table? How much do the items weigh? You need to know how sturdy your table needs to be.
- ▶ What building materials should I use? Now that you know your weight requirements, you can pick materials that will be strong enough to handle the weight of the items.
- ➤ Will the materials be expensive if I have to purchase them?

 Can I recycle materials I already have? Engineers have to make sure their designs are cost-effective.

- ▶ What is the best design I can use? Should it have two, three, or four legs? Should it have a square, round, or rectangular top? How tall should it be? These questions will guide you to the right design based on your table's location and use.
- ▶ Will it help if I draw pictures of the design before I begin? These drawings can help start your blueprint!



3. Prepare instructions.

The information you gathered should help you better understand the planning process and your needs. Now you can create a plan for building your table. Because of the process you followed, you'll be able to build a better table than if you just

started nailing boards together without a plan. By drawing your blueprint on graph paper, you can easily keep the drawing to scale. For example, one grid on the paper could equal 1 inch on the finished product.

Be sure to make notes on your drawing about all dimensions and materials. Remember that another person should be able to create your project from the blueprint you have made. You might also want to make a small-scale model of your project. Heavy cardboard, toothpicks, craft sticks, and tape are some materials you could use.

4. Build your project.

Once you have prepared your design and your blueprint, you're ready to build your table. Here you'll discover if your design ideas work and if your blueprints have clear instructions and good information. It's a good idea to take notes and pictures as you go along so you remember what worked and what didn't.



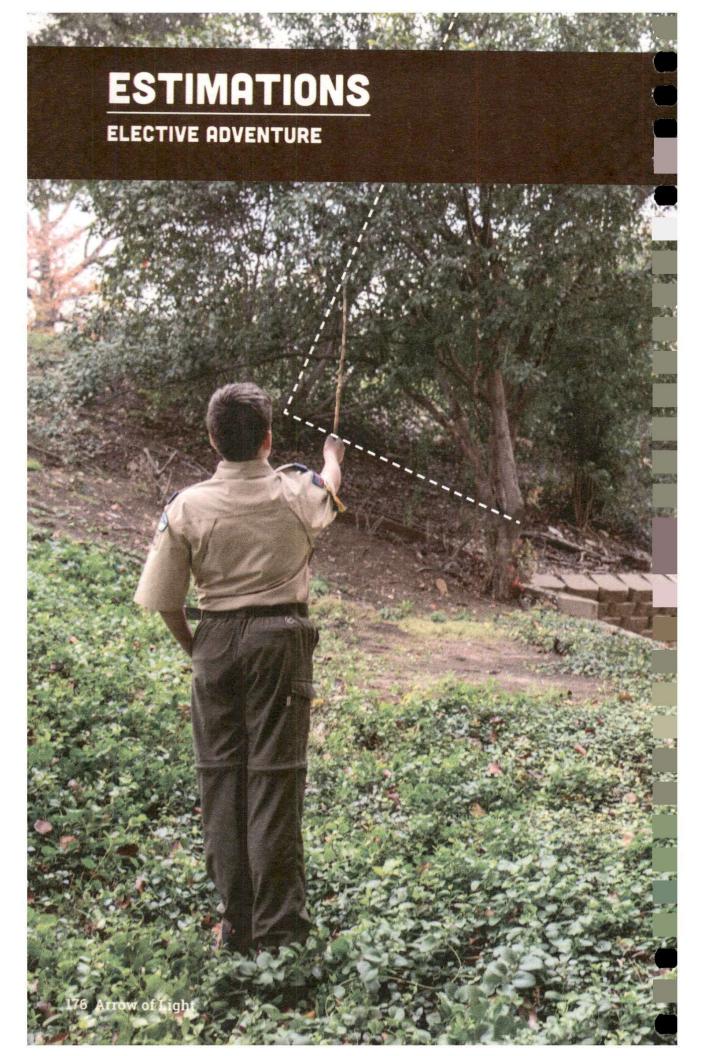
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5. Evaluate your project.

After you build your table, you should test it to make sure it meets your needs. Testing and evaluation are also important parts of the engineering process. On major projects, engineers build models and run computer simulations before starting actual construction. These steps can save time and money if the design needs to be changed.

You can also ask yourself questions like these:

- ▶ Did the project turn out as I expected?
- ▶ How much did it cost to build the project?
- ▶ What would I do differently next time?
- ► What three things did I learn when I designed and built my project?
- ▶ What am I most proud of about my project?



SNAPSHOT OF ADVENTURE



There are times when we need to be exact, like when building a model or baking from a recipe. When we do not need to be exact, or we only need a general idea of something or its cost, we can

estimate. There are some simple ways to estimate things like the time of day or even the height of an object.

REQUIREMENTS Approved by 1. Estimate food measurements. 2. Estimate the time of day. 3. Estimate the height of a distant object. 4. Estimate the distance between two points.



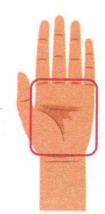
- Elective Adventure
- Scan for this Adventure page

Estimate food measurements.

You can use your hand to estimate food portions. These are estimates because everyone has different size hands, but they can still serve as a useful guide.

Palm = 3 ounces

The palm of your hand can be used to estimate a serving of protein. One palm is equivalent to a 3-ounce serving size. Examples of proteins include pork, poultry, beef, fish, and chicken.



Fist = 1 cup

A fistful is a great way of measuring carbohydrates like rice, cereals, salads, fruits, or popcorn.



Tip of the thumb = 1 tablespoon

The tip of a thumb, from the knuckle to the end, is equivalent to a serving of 1 tablespoon. This is helpful when measuring fat intake such as mayonnaise, cheese, salad dressings, creams, and peanut butter.



Thumbnail = 1 teaspoon

The nail of the thumb is about a 1-teaspoon serving of oils or fats. This can be used to measure salad dressings, olive oil, or butter.



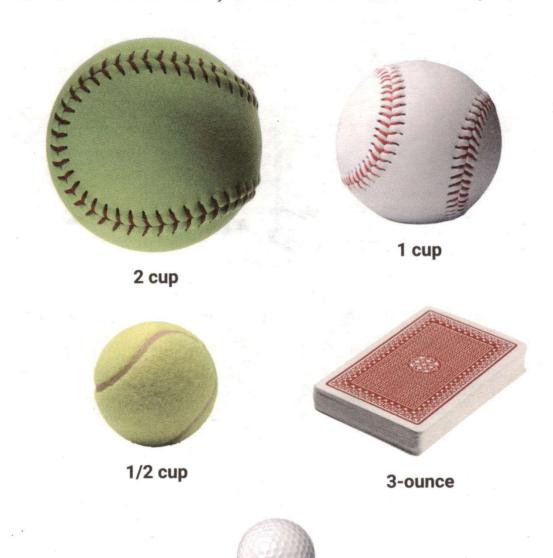
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Cupped hand = 1/2 cup

One hand cupped is equivalent to a 1/2 cup serving. You can use your cupped hand to measure food items such as pastas, potatoes, nuts, and even ice cream.

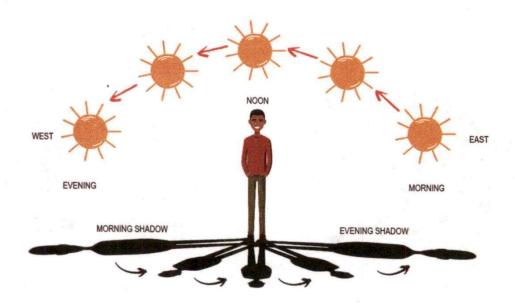


There are many other objects you can use to estimate a measurement aside from your hand or an actual measuring cup.



Estimate the time of day.

As the Earth spins on its axis, the sun's rays reach the Earth at different angles, which causes shadows to move. By marking where objects' shadows land throughout the day, you can see how time passes.

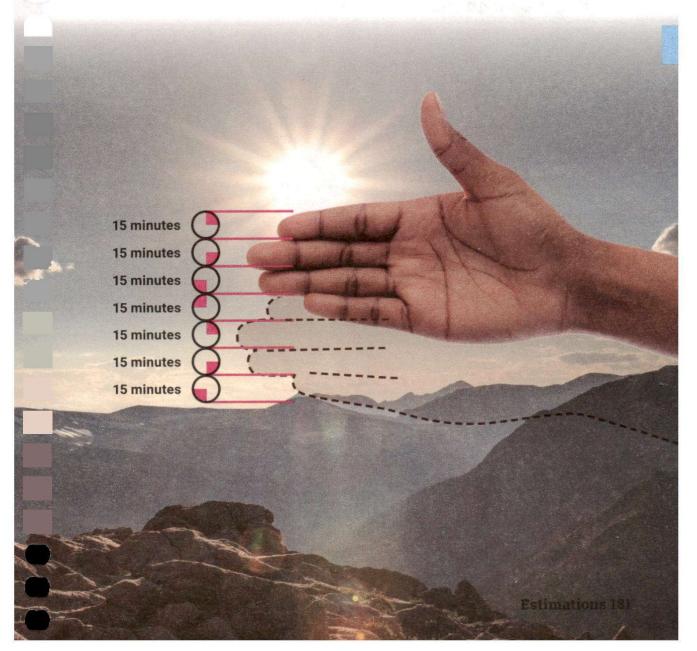


Early in the day the sun will be low in the sky as it rises in the east, so an object's shadow will be long and stretch to the west. As the day gets closer to midday, the object's shadow gets shorter until the sun hits its highest point, when there may not be much of a shadow at all. Then, throughout the afternoon the shadow of an object will stretch longer and longer in the opposite direction as the sun gets lower in the sky and sets in the west. Knowing when the sun rises and sets helps you estimate when the sun will be at its highest and shadows will be at their shortest.

There are 12 hours of sunlight at the equator, but the amount of sunlight in the United States changes based on the season. Since we are estimating, though, we can simply use 12 hours of sunlight

as our base. That would mean that the sun will be at its highest six hours after sunrise and six hours before sunset. If sunrise is at 6:30 a.m., the sun will be at its highest at 12:30 p.m. If the sun is a quarter of the way up, then it's about three hours after sunrise, or 9:30 a.m. If the sun is setting and is about a quarter of the way down, it's about three hours after its peak, or about 3:30 p.m.

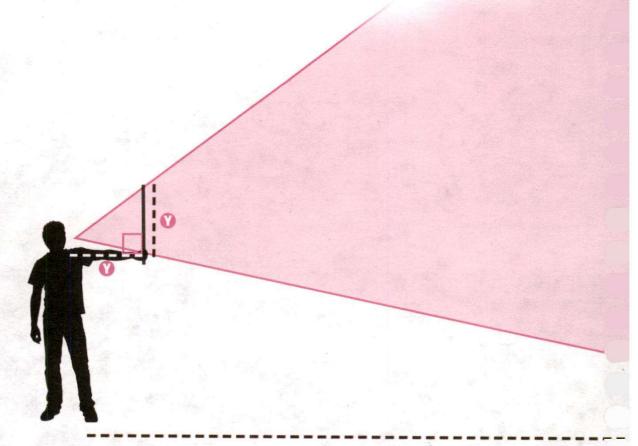
When the sun is setting you can estimate how much daylight is left using your fingers. Stretch your hand out in front of you and place the sun at the top of your index finger. Every width of finger is going to be about 15 minutes of sunlight. So, if the sun is only two fingers away from the horizon, you have about 30 minutes before it gets dark.



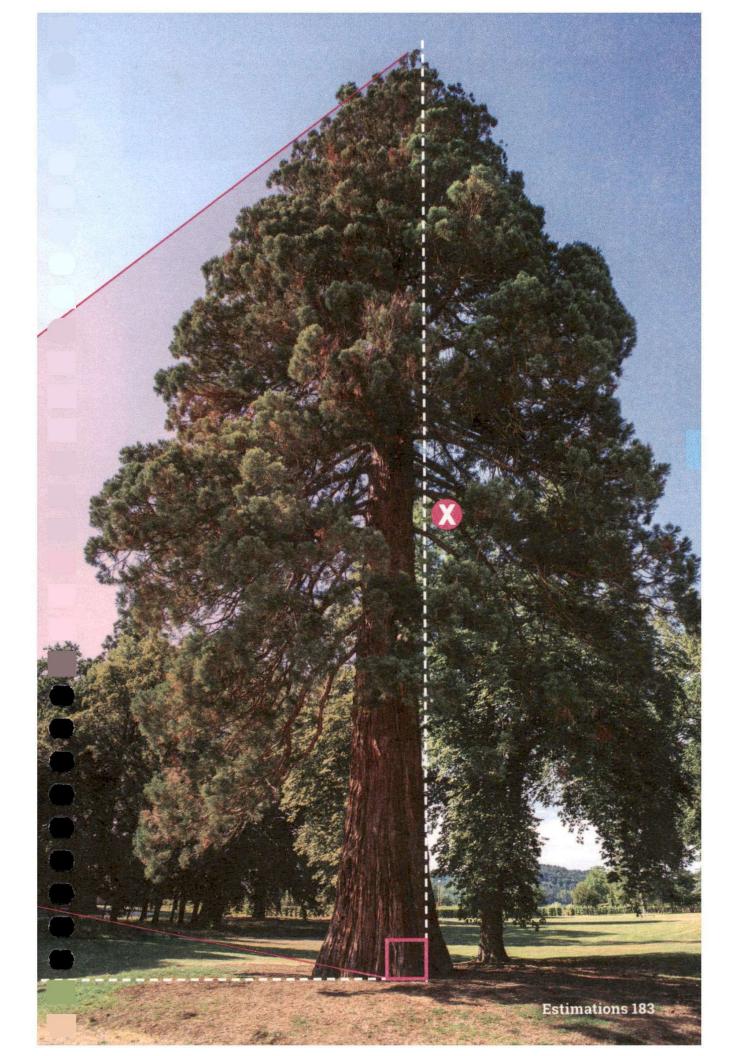
Estimate the height of a distant object.

Have you ever seen a really tall tree and wondered how tall it is? Here's a way to figure it out. This method requires flat ground to get a good estimation. It's based on the geometry of a right triangle — that the two sides of a right triangle are the same length.

- 1. Find a stick the length of your arm.
- 2. Hold your arm out straight with the stick pointing straight up (90-degree angle to your outstretched arm).
- Walk backward until you see the tip of the stick line up with the top of the tree. Your feet are now at approximately the same distance from the tree as it is high.
- 4. Measure the distance from where you are standing to the base of the tree. That is how high the tree is.







Estimate the distance between two points.

If you can't actually measure the distance between two points, you would want to be able to estimate it. For instance, what if you want to know how wide a narrow river is? Here are two ways you can do it.

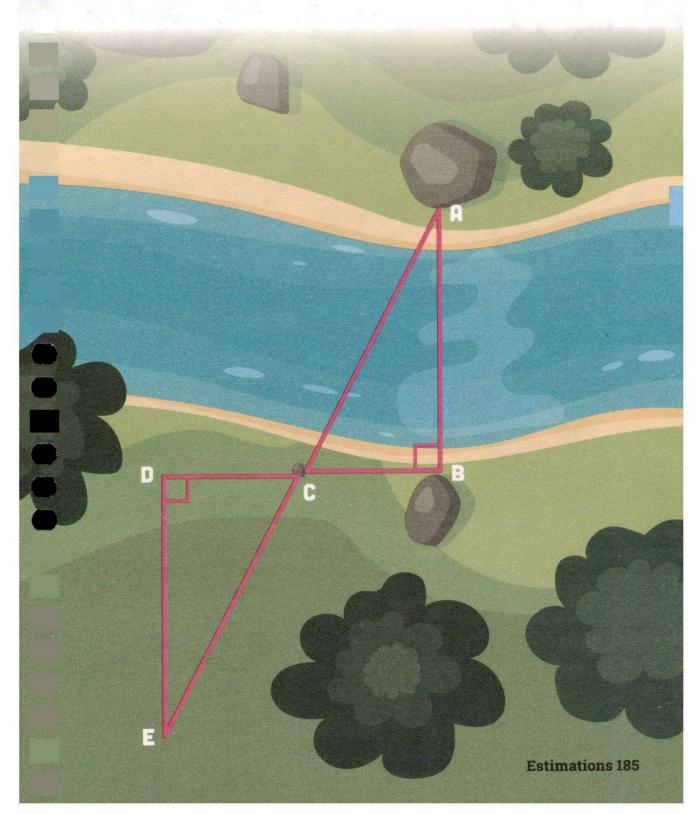
Napoleon Method

To measure the width of a narrow river, stand straight on your side of the river looking toward the other side. Tilt your head down until your chin rests on your chest and place your hand across your line of sight as if executing a military salute. Position the edge of your hand in such a way that it is as if is touching the opposite shore. Turn your body 90 degrees and note the distance where the edge of your hand is touching on this new direction. The distance between that spot and your position is an estimate of the width of that river.

Stride or Step Method

- 1. Select an object on the opposite bank of the river, such as a tree, and mark it as point A.
- On your side of the river, place a stick or another object at the point directly in front of the object that's on the opposite bank of the river and mark it as point B.
- Walk about 50 paces along the shore at a right angle to line AB. Place another object there, and mark that spot as point C, forming line BC.
- 4. Continue walking another 50 paces in the same direction to point D. The distance CD is equal to the distance BC.

- 5. From point D, walk away from the river at a right angle to line CD until you can see point C forming a straight line with point A. Stop and mark your spot as point E.
- 6. You have now made two identical right triangles (ABC and CDE). Measure the distance between points D and E to get the width of the stream (line AB).



FISHING **ELECTIVE ADVENTURE** 186 Arrow of Light

SNAPSHOT OF ADVENTURE



You may have gone fishing before and know some basics. In this Adventure, you will learn how to plan a fishing experience using the BSA SAFE Checklist. This will help you be prepared for future adventures in Scouts BSA.

REQUIREMENTS	Approved by
Make a plan to go fishing. Determine where you will go and what type of fish you plan to catch. All of the following requirements are to be completed based on your choice.	
2. Use the BSA SAFE Checklist to plan what you need for your fishing experience.	
3. Describe the environment where the fish might be found.	
4. Make a list of the equipment and materials you will need to fish.	
5. Determine the best type of knot to tie your hook to your line and tie it.	
6. On your own, choose the appropriate type of fishing rod and tackle you will be using.	
Have an adult review your gear. 7. Using what you have learned about fish	
and fishing equipment, spend at least one hour fishing following local guidelines and regulations.	



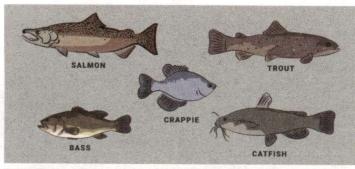
- Elective Adventure
- Scan for this Adventure page

Make a plan to go fishing. Determine where you will go and what type of fish you would like to catch. All of the following requirements are to be completed based on your choice.

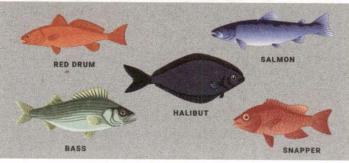
Fishing is popular because there are so many different places to fish and because most people live in an area that is not too far away from a fishing spot. Your fishing spot may be a human-made lake that is stocked with fish, a stream known for fly fishing, or an ocean pier.

Once you have decided where you will go fishing, spend time identifying the types of fish that live in that body of water. Here are things you should think of that will help you have a more successful fishing trip:

- What time of day are the fish most active and feeding?
- ▶ What do the fish naturally eat?
- At what temperature are the fish most active?
- ▶ Where are the likely places you might find fish?



Freshwater species



Saltwater species

Use the BSA SAFE Checklist to plan what you need for your fishing experience.

With your patrol or family, visit the BSA SAFE Checklist website on Scouting.org. You can find the page by following the QR code here.



Here are the points of the BSA SAFE Checklist to consider for your fishing trip.

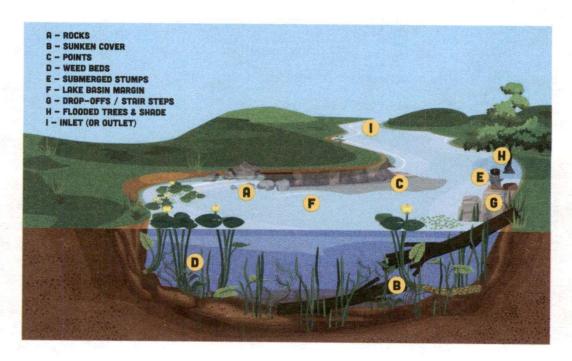
- ► **Supervision** Youth are supervised by qualified and trustworthy adults who set the example for safety.
- ▶ **Assessment** Activities are assessed for risks during planning. Leaders have reviewed applicable program guidance or standards and have verified the activity is not prohibited. Risk avoidance or mitigation is incorporated into the activity.
- ▶ Fitness and Skill Participants' BSA Annual Health and Medical Records are reviewed, and leaders have confirmed that prerequisite fitness and skill levels exist for participants to take part safely.
- ▶ Equipment and Environment Safe and appropriately sized equipment, courses, camps, campsites, trails, or playing fields are used properly. Leaders periodically check gear use and the environment for changing conditions that could affect safety.

Describe the environment where the fish might be found.

Different species of fish have different behaviors based on where they live, but all fish act on instinct. Instinct is the natural behavior an animal uses to survive. Think like the fish you plan to catch, and you'll increase your chances of success.

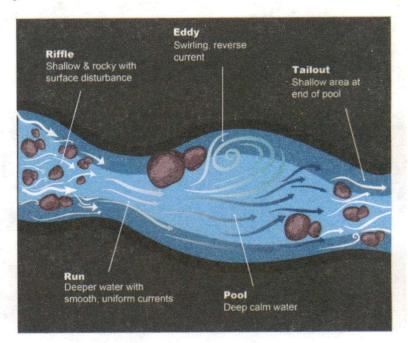
Most big fish eat little fish. To survive, little fish move fast, and they find places to hide where big fish cannot go. Little fish need food, too, so if you know what the little fish eat, chances are you'll find bigger fish nearby.

Some fish find food on the bottom of the body of water. Other fish find food floating on the top. Knowing where fish find their food will help you know where to fish. If you want to catch catfish, which sometimes find their food on the bottom of a lake or river, you'll want to have your bait or lure on the bottom. If you want to catch a big bass that eats little fish near the surface, you may want to have your bait or lure near the top of the water.

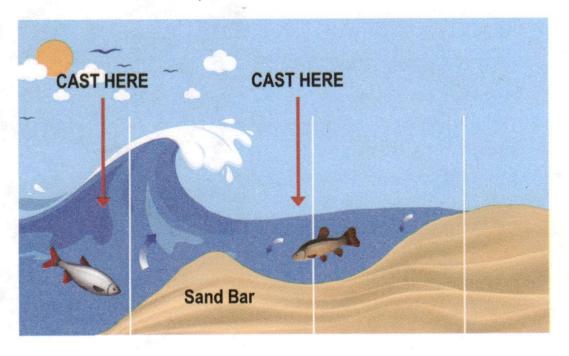


Where does the fish you wish to catch live?

- ► Do your fish eat smaller fish?
 Where do those smaller fish live? What do those smaller fish eat?
- ▶ Do your fish eat insects? If so, what kind and where do you find them?



▶ Do your fish like warmer or colder water? Water on top is warmer than deeper water.





To learn more about fish, you can find links to state fish and wildlife agencies on the internet (with permission) at fws.gov/offices.

Make a list of equipment and materials you will need to fish.

It's fun to fish with a simple fishing pole, but most people who fish use a rod and reel instead. This equipment lets you cast your line farther out in the water. And when you hook a fish, it's easier to reel it in. Here's the equipment you will need.

ROD

The rod takes the place of the fishing pole. A rod has line guides (metal rings) along its length that the fishing line runs through. Most rods are made of fiberglass or carbon fiber. Some rods come apart so you can transport them easily. These are called take-down rods.

The weight of rods varies. To catch small fish, you could use an ultralight rod. To catch fish like trout, you could use a long, thin lightweight rod called a fly rod. For bigger fish, you would need a rod



that is thicker around and stronger. If you were going surf fishing,

you might use a rod that's 20 feet long!



REEL

The reel is attached to the rod near its handle. Inside the reel is a spool that your fishing line wraps around (and around and around and around). From the reel, the end of the line goes up the rod through the guides before you

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attach your hook or lure. To reel in the line, you turn the reel. When casting (tossing your line out on the water), you release a trigger on the reel which lets the fishing line go.

There are many types of reels. If you're new to fishing, you might want to pick a close-faced spincast reel that has a cover to protect the line inside. When casting with a spincast reel, you press and hold the button on top of the reel. During the cast, you release the button to let the line out and complete the cast. The timing can be tricky, but you'll soon figure it out.

Open-faced spincasting reels don't have a cover and take more skill to use. Without practice, you can end up with something called a "bird's nest": a big, knotted wad of fishing line that is no longer usable.

FISHING LINE

There are many types and colors of fishing line. Some line is meant to catch fish that weigh less than a pound.

Some is meant to catch fish that weigh 10, 20, or even 50 or more pounds.

Be sure to use line that is strong enough for the fish you want to catch. Otherwise, a fish can break the line and get away.

Fishing line may be clear or have a tint, like green or bronze. Like camouflage, the tinted fishing line blends into its surroundings and makes a good choice for fishing when looking to keep your line invisible to fish. A tinted fishing line may be more visible to you than clear fishing line in very clear water.

BAIT

You will also need to have the correct bait for the type of fish you're fishing for. If the fish don't



like to eat the bait you're using, they won't bite. Do you remember



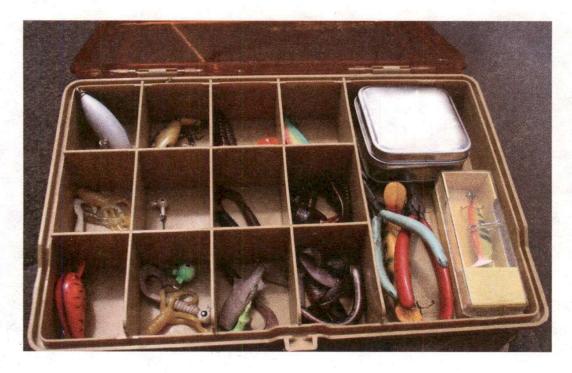
what you learned in requirement 1 about the fish in your area? You'll have better luck catching a fish if you use bait that the fish would naturally eat.

You will need to decide if you want to use live bait like minnows, worms, or grubs or use artificial bait. There are many types of artificial bait. Some

make noise in the water or spin around to attract fish. Some are designed to look like live bait. There are special dough baits that you can form around the hook. These have scents that attract fish.

TACKLE BOX

A tackle box is a good place to store your bait and other fishing supplies (called tackle) while you're traveling and while you're fishing. It keeps your tackle clean and organized. You can buy a tackle box at a store or reuse something you find around your home. Be sure there is a way to secure the lid so it doesn't open at the wrong time.



Here are some things to carry in your tackle box:

- > Artificial bait to catch fish.
- ▶ Barbless hooks to catch fish. These hooks cause less harm to a fish's mouth when you're practicing catch-and-release fishing. If you cannot find barbless hooks, you can use pliers to flatten the barbs on barbed hooks.
- ▶ **Bobbers** to attach to your fishing line. They are small floats that keep your hook at a certain depth and show when a fish bites.
- ▶ Sinkers to attach to your fishing line about 6 to 10 inches above the hook. They let you fish lower in the water because they are weighted and pull down on the hook. This keeps your bait down near the lake or river bottom where most fish swim. For most shore fishing, pinch one or two small splitshot sinkers onto your line. Use only enough weight to sink the bait.
- ▶ Clippers to cut off the fishing line after you tie it on a hook.
- ➤ **Dehookers** to remove hooks safely and quickly from a fish that swallows them.
- ➤ **Needle-nose pliers** to help you remove hooks from fish and pull knots tight.

Since you'll be outside, you'll also want to carry the Cub Scout Six Essentials when you go fishing. Other items to carry may include raingear if there is a chance of light rain and a life jacket if you're going fishing from a boat.

If you want to learn about fishing but aren't sure whether you'll like it, you may be able to borrow some equipment from a family member or friend. Once you decide you like it, you can purchase the proper equipment. You can also buy one or two items at a time and slowly build up a collection of fishing gear.

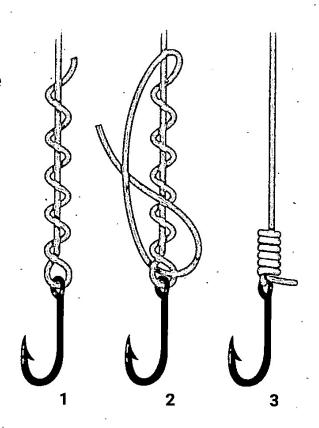
Determine the best type of knot to tie your hook to your line and tie it.

FISHING KNOTS

You must know the proper types of knots for tying hooks to your line. Because fishing line is stiff and slippery, you can't just use any knot. You need special knots that hold tight. Here are two good knots to learn:

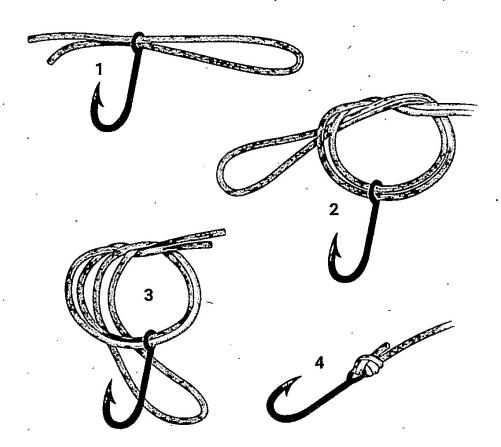
Improved clinch knot.

- 1. Run the end of the line through the eye of the hook, double the line back, and make six twists around the standing part (the long part of the line).
- 2. Run the end of the line through the small loop where the line joins the eye and then back through the large loop you just formed.
- 3. Partially close the knot and moisten it a little with water before securing it tightly against the hook eye. Cut off the short (tag) end of the line.



Palomar knot.

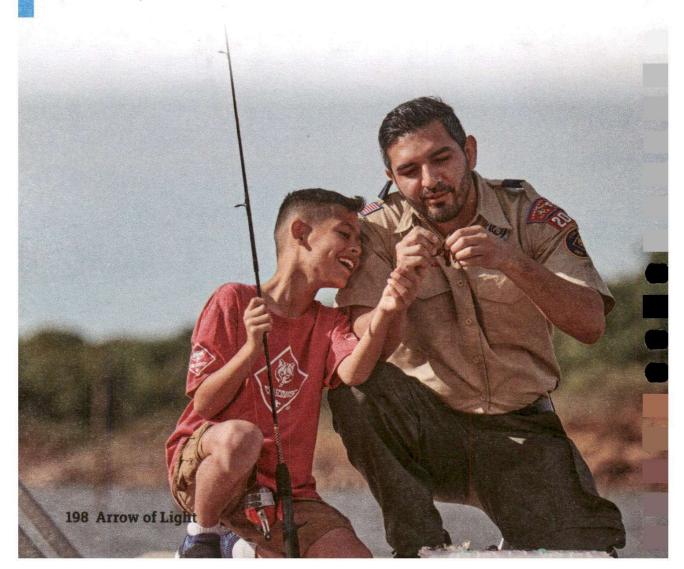
- 1. Double the line to make a 4- to 6-inch loop, then pass the end of the loop through the eye. (You may need to crimp the end of the loop so it will go through the eye.)
- 2. Tie a loose overhand knot in the doubled line.
- 3. Pass the hook through the loop and pull on the doubled line to tighten the knot, guiding the loop over the top of the eye.
- 4. Cut off the short (tag) end of the line.



On your own, choose the appropriate type of fishing rod and tackle you will be using. Have an adult review your gear.

Things to check before going fishing:

- ▶ Is your fishing gear the proper size for the fish that you are targeting?
- ▶ Is your fishing gear clean and in good working order?
- ▶ Is your fishing gear properly assembled?
- ▶ Is your fishing line properly threaded and attached to your reel and hook or lure?
- ► Are your hooks clean?



Using what you have learned about fish and fishing equipment, spend at least one hour fishing following local guidelines and regulations.

It is fun to practice casting and to pick out fishing gear, but the real fun happens when you actually go fishing. Nothing is as exciting as watching your bobber disappear under the water or feeling the pull on your line as you reel in a big fish! Decide with your patrol, parent, or legal guardian where and when you will go fishing. Spend a minimum of one hour trying to catch a fish. Remember all the things you have learned about fish and fishing equipment.

To practice casting, you'll need a rod with a reel attached. Instead of using a hook, tie a casting plug or bobber to your line so it will be heavy enough to cast. Place a target, and practice hitting the target with the casting plug or bobber. Do this until you can get closer to the target than you were at first. As your accuracy improves, move farther from the target. The time you spend practicing will help make fishing safe and fun.







There are rules to follow when fishing. These are important because they help protect the fish and their environment. It is important that you learn these rules, understand what they mean, and promise to obey them.

Your local area may have rules about where and when you can fish, how big a fish must be to keep, and how many fish you're allowed to keep. In some places you must put the fish you catch back in the water. This practice is called catch and release. It's a good way to make sure fish continue to live in the place you're fishing.

In addition to rules about fishing, your state will require you to have a fishing license. Adults must purchase a fishing license before they go fishing. Youth who are Cub Scout age often don't have to have a license. Be sure to find out about licensing requirements in your area.

Once you know your local fishing rules and regulations, here are the six things to know to keep yourself and others safe:

- 1. Fish with proper adult supervision.
- 2. Get permission to fish where you plan to fish.
- 3. Check the weather before you go. Do not fish in a thunderstorm or inclement weather.
- 4. Use the buddy system. You must be able to see your buddy.
- 5. Give plenty of room to others fishing nearby.
- 6. Never fish where people are swimming.

Be sure to discuss any other rules your family has so you'll be safe while fishing.

Fishing tips:

- When you're through fishing, properly dispose of your worms or bait fish. Do not release them into the water.
- ▶ If releasing your catch, always wet your hands prior to touching a fish so you don't damage the mucous membrane that protects it.
- ▶ To release fish easily, bend down all barbs on hooks.
- ▶ Treble hooks, 3 bends and points in one hook, are not recommended.

