Environmental science merit badge worksheet 2020

Comments: Iul 07, 2015 - Can you explain #5 for environmental science merit badge? What construction project is envisaged and what type of project is the BSA looking for? July 08, 2015 - Scouter Paul@Donna - The Merit Badge brochure has the necessary information. I can't determine what would be considered a project not - it's up to the scout and his merit badge advisor. July 09, 2015 - Joan Weller's summer camp is approaching and #4 is a prerequisite to make up camp. Are there examples detailing what is needed. My son typed his comments by listing the information, but it seems that the sheet is repeating itself. It has diagrams of its plots, % of each living object, time, weather. Please let him know that he needs to get the information he needs to finish the badge in the camp. Thank you. July 13, 2015 - John ShettelI is interested in working with Boy Scout troops in West Africa around a variety of environmental merit badges, including this particular badge. As these merit badge requirements for troops in Maryland's Silver Spring apply to troops in the Gambia of West Africa. Whether the icons are contextualized by the Master Scout or the International Organization has already done so. If you can direct me to an international point of contact, I would appreciate it. July 19, 2015 - Scouter Paul@Joanne - A merit badge brochure (and additional help sheet) show what needs to be written down. Since your son's camp has identified #4 as PRErequisite, he really needs to contact them, or his scout, to find out what they require. Changing the requirements for preconditions is not a way to obtain merit badges. Setting expectations of what is needed for a requirement should be done when meeting with a sign of merit consultant. July 19, 2015 - Paul@John - The Boy Scouts of America program is separated and not coordinated with any other country scouting program. You can find the World Organization Of Scout Movement at scout.orgJun 09, 2016 - Ian Stravopolus Merit badge brochure does not have the necessary information for the requirement of 5.July 12, 2016 - Walter Christensen@Ian: The 2015 print brochure has procedures for requirement 5 on pg 92.Oct 05, 2020 - Fred MindrupI think this icon should be needed for Eagle.Oct 10, 2020 - John Hudson@Fred This is necessary for an eagle. Competition - Ask a question - Add ContentThis website not officially affiliated with the Boy Scouts of America Environmental Sciences Merit Badge will teach you how to save humanity's most valuable resource - our own planet! To earn this icon needed by Eagle, you will need to learn a variety of environmental terms, conduct your own experiments, and create a chronology of historical environmental events. Sounds simple, doesn't it? Plot twist, it's not! However, don't let the icon complexity You're down. When I was a scout, I really enjoyed earning an environmental science badge of merit and learning interesting information about our planet. In addition, this icon even helped me plan my Eagle project! It can do the same for you once you check the requirement 5 down below. ☺ Before we started, if you have other Eagle essential merit badges to earn, I recommend checking out my Difficulty Ranking Guide to every Eagle icon required. Environmental science is a pretty advanced icon, so if you want my recommended Eagle required icons for scouts who are just starting out, click on this link above! Also, remember that ScoutSmarts should simply serve as a starting point for merit research. In school, we are taught not to plagiarize, and the same is true for scouting sheets. Answer these questions in your own words, do further research, and I promise you will get much more from every badge of merit you earn! Keep in mind, environmental science merit is a badge both action and knowledge requirements. Be prepared to work hard and learn a lot! Before you go to training though, take the time to read each of the following requirements and fully understand what we will cover in this icon. Remember that preparation is the key to success! What are the requirements for an environmental science badge? Make a chronology of the history of environmental science in America. Identify the contribution of the Boy Scouts of America to environmental science. Include dates, names of people or organizations, and important events. Define the following terms: population, community, ecosystem, biosphere, symbiosis, niche, habitat, conservation, threatened species, endangered species, extinction, pollution prevention, brown field, ozone, watershed, air, indefinable source, hybrid car, fuel cells. One activity from seven of the following categories (using the activities in the brochure as a sign of merit as a basis for planning and projects):3a. EcologyOption 1: Conduct an experiment to find out how living things react to changes in their environment. Discuss your observations with your consultant. Option 2: Conduct an experiment illustrating the greenhouse effect. Keep a log of your data and observations. Discuss your findings with your consultant. Option 3: Discuss what an ecosystem is. Tell us how it is maintained in nature and how it survives. Air PollutionOption 1: Perform an experiment to test for particles that contribute to air pollution. Discuss your findings with your consultant. Option 2: Record the ride, mileage, and fuel consumption of the family car for seven days, and calculate how many miles per gallon the car gets. Determine whether you could combine any travel (chain) rather than And back. Using the idea of a travel chain, determine how many miles and gallons of gallons could have been saved in those seven days. Option 3: Explain what acid rain is. In your explanation, tell us how this affects plants and the environment, as well as the steps that society can take to help reduce its impact. Water PollutionOption 1: Conduct an experiment to show how living things respond to heat pollution. Discuss your observations with your consultant. Option 2: Conduct an experiment to identify methods that can be used to omatively (reduce) the impact of an oil spill on waterfowl. Discuss your findings with your consultant. Option 3: Describe the impact of water-transmitted pollutants on the water community. Write a 100-word report on how this pollutant affects aquatic life, what effect it was, and whether the effect is associated with biomagnification.3d. Land PollutionOption 1: Conduct an experiment to illustrate soil erosion with water. Take a picture or draw the soil before and after the experiment, and make a poster showing your results. Give your poster to your consultant. Option 2: Perform an experiment to determine the impact of an oil spill on the ground. Discuss your findings with your consultant. Option 3: Photo an area affected by erosion. Share your photos with your consultant and discuss why the area has weakened and what can be done to help ease erosion. Endangered SpeciesOption 1: Have research on one endangered species found in your state. Find out what its natural habitat is, why it is threatened with extinction, what is being done to preserve it, and how many individual organisms are left in the wild. Prepare a 100-word report on the body, including drawing. Give your report to your patrol or squad. Option 2: Do research on one species that is endangered or endangered, but which is now restored. Find out how the body has recovered and what its new status is. Write a 100-word report on the species and discuss it with your advisor. Option 3: With the approval of your parents and a consultant, working with a natural resources professional to identify two projects that have been approved to improve habitat for endangered or endangered species in your area. Visit the website of one of these projects and report what you have seen.3f. Preventing pollution, restoring resources and saving Opt 1: Look around your home and identify 10 ways your family can help reduce pollution. Practice at least two of these methods for seven days and discuss with your counselor what you have learned. Option 2: Identify 10 ways to save resources or make better use of resources in your home, school, or in Practice at least two of these methods for seven days and discuss with your counselor what you have learned. Option 3: Perform an experiment on packaging materials to find out which ones are biodegradable. Discuss your findings with your consultant. PollinationOps 1: Use photos or illustrations to point out differences between a drone and a working bee. Discuss the developmental stages of bees (eggs, larvae, pupae). Explain the pollination process, and what propolis is and how it is used by honeybees. Tell us how bees make honey and beeswax, and how they both collect. Explain the role played in the life of the hive queen, drones and workers. Option 2: Submit to your consultant a one-page report on how and why honeybees are used in pollination of food crops. In your report, discuss the challenges facing the bee population today and the impact on humanity if there were no pollinators. Share your report with your troop or patrol, your class at school, or another group approved by youOption 3: Hive swarm or share at least one colony of honey bees. Explain how the hive is built. Invasive SpeciesOption 1: Learn to identify the main invasive plant species in your community or camp and explain to your consultant what can be done to either eradicate or control their spread. Option 2: Do research on two invasive plant or animal species in your community or camp. Find out where these species came from, how they were transported to the United States, how they spread, how they spread, and recommended means to eradicate or control their spread. Report your research orally or in writing to your consultant. Option 3: Take part in a project for at least one hour to eradicate or control the spread of invasive plant species in your community or camp. Choose two open training grounds that are very different from each other (e.g., hilltop against the bottom of a hill; field against forest; swamp vs. land). For both areas of the study, do one of the following: Option 1: Separate a plot of 4 square meters in each area of study, and count the number of species found there. Assess how much space each plant species and type and number of species not planted you will find. Tell your consultant orally or in writing about the biodiversity and population density of these study areas. Option 2: Make at least three visits to each of the two study areas (a total of six visits), staying at least 20 minutes each time to observe the living and inanimate parts of the ecosystem. The space of each visit is far enough apart that there are obvious differences in observations. Hang a log that includes the differences that you observe. Discuss your observations with your consultant. Using the design or plan you create yourself, identify items that should be included in the environmental impact statement for the planned project. Find out about three environmental opportunities. Choose one and learn the education, training and experience required for this profession. Discuss this with your consultant and explain why you might be interested in this profession. Interest. whether you are allergic to bee stings. Visit an allergist or your family doctor to find out. If you are allergic to bee stings, you should choose another option within requirement 3. At the end of the 3g (3) requirement, your consultant can help you find an established beekeeper to meet you and your buddy. Ask if you can help the hive swarm or split the honeybee colony. Before your visit, make sure your buddy is not allergic to bee stings. For help finding a beekeeper in your state, visit www.beeculture.com and click on Resources, then select Find Help and Find a Local Beekeeper. 1) Make a chronology of the history of environmental science in America. Identify the contribution of the Boy Scouts of America to environmental science. Include dates, names of people or organizations, and important events. The United States has been around for a while. Many environmental policies were created, changed and then done at the time. If it all sounds like it's going to be confusing, don't worry! Below I created a chronology documenting some of the most important events in Scouting and Environmental History. However, if the video (3:17) is more of your style, I suggest you watch this short story for a better visual understanding of U.S. environmental events: Awesome! Now you should know about John Muir, the Dust Bowl, and many other icons in the ecological history of our country. In my timeline below, I've added these events and more. Also, I highlighted all the events that involve Scouting. Hope this helps you! The chronology of the history of environmental sciences in The AmericaDate RangeEnvironmental MilestonesDetails12,000 BC-1600 American Indians in AmericaAmerican Indians used natural resources such as wood, rivers and prairie to live sustainably. When resources became scarce within the area, they often migrated elsewhere to allow the land to replenish itself.1620's-1690'sPlymouth colony establishedPlymouth colony became the first established English colony in Massachusetts. In 1626, Plymouth leaders passed a law that controlled the harvesting and sale of timber on the grounds of the colony.1680's-1720'sColony GrowthFur takeover gained popularity as settlers expanded to the west. In 1681, William Penn, founder of the colony that became modern Pennsylvania, passed an ordinance that stated: 1 acre of land should remain wooded for every 5 acres that are cut.1750-1850'sFirst Industrial RevolutionNable innovations such as industrialization and steam engine have created demand for non-renewable resources such as metals, fossil fuels and coal. Carbon pollution began to increase from a baseline of 280 PPM (parts per million).1840's-1900The Government Begins Environmental ProgramsIn 1849 the U.S. Department of the Interior, for saving and saving most of the federal lands were created. At the time, Thomas Ewing, the secretary, was chosen to lead the department. In 1892, John Muir founded Siera Club.1900's-1910Scouting Is Founded in AmericaIn 1910, Scouts BSA was founded in the United States as the Boy Scouts of America by William D. Boyce. Before that, on February 1, 1905, the U.S. Forest Service was founded by Gifford Pinhot, an early protector of forestry, and then-President Theodore Roosevelt.1910-1920-1920National Parks designated and protectedIn 1911 was created the icon of the merits of forestry. In 1916, Congress established the National Park Service to preserve protected parks. At this point, carbon pollution in the atmosphere was about 300 PPM.1920-1930Great depression begins? Nothing else happened. In 1921, Pioneering regional planner Benton MacKaye created the first plans for a 2,000-mile route along the east coast of the United States. Today, this legendary site called the Appalachian Trail!1930-1940Dust Bowl EraUnsustainable farming practices caused droughts and severe dust storms (The Dust Bowl that damaged the ecology of the American and Canadian prairies. Philmont Scout Ranch was founded in 1938 by Waite Phillips.1940-1950WWII Era (It is difficult to define decades by environmental values after that moment)In 1948, the World Union for Conservation of Nature, formerly called the International Union for Conservation of Nature and Natural Resources, was founded. The Wildlife Advocates nonprofit was also founded around the time.1950-1960's-1960Early Cold War Nature and Soil - Water Conservation Merit Badge was issued by the BSA in 1952. In 1954, nuclear power was first used to generate electricity for civilians in the USSR. In 1955, the U.S. Passed the Air Pollution Control Act.1960-1970.70 The Multiple Use of Sustainable Yield Act was passed in 1960. In 1962, Rachel Carson published a book, Silent Spring, which describes the dangers that chemical pesticides (DDT) pose to the environment. Many other environmental acts have been adopted. The world's population reached 3 billion 1970-1980-bragging Cold WarFirst Earth Day was celebrated on April 22, 1970. In the same year, the U.S. Environmental Protection Agency (EPA) was also established. In 1972, the BSA created an environmental science merit badge, and in 1976 they created the World Environmental Protection Award.1980-1990-1990-Collaps USSRB 1980, Superfund, an environmental cleaning program specializing in the removal of pollution and hazardous substances, was created. Chernobyl, the collapse of one of the largest nuclear reactors in the USSR, occurred in 1986. The world's population has reached 5 billion The National Environmental Education Act was passed in 1990. In 1992, Summit Earth was held in Brazilian Rio de Janeiro It was a huge success! In addition, the first GMO crops appeared on the market in 1994.2000-2010's-2010 Rise of the InternetIn 2002, Scouting released its Leave Without a Trace front-country guidelines and leave no trace of the premium. In 2001, President Bush refused to sign the Kyoto Protocol, an international treaty to reduce carbon emissions from each of the participating countries. In 2010, carbon pollution was about 400PPM! ☹ (Click on the link for deep immersion on climate.gov if you want to understand what the whole PPM thing means)2010-2020 Era of Information Is Around When I Started Scouting! In 2013, scouting created the Sustainable Development badge. The Paris Agreement on Sustainable Development was signed and agreed upon in 2015. In 2017, President Trump announced that America would no longer follow international environmental agreements from the Paris Accords. In 2020, there was an unprecedented global pandemic. Now, the rest of this timeline, the future of our planet, is yours to create! Make this count ☺Y hope this timeline was useful to you because it took me FOOORREEEVVERRRR to research and write everything. Give yourself a pat on the back to study all this information! Well, I'm going to take a nap now. See you on demand 2!2) Identify the following terms: population, community, ecosystem, biosphere, symbiosis, niche, habitat, conservation, threatened species, endangered species, extinction, pollution prevention, brown field, ozone, watershed, air field, undetectable source, hybrid car, fuel cell. PopulationIn biological terms, the population is a group of organisms that live in a certain geographical area and are able to interbreed. This means that all the people living in your city make up the population. Similarly, all the ants in your backyard are also considered population! FYI, you will use this knowledge of the population to complete the requirement 4, so pay attention. In fact, the population meets two criteria: all organisms belong to the same group or species. There is a said geographic area that each member of the population falls within.CommunityCommunities are groups of living things that have common traits such as culture, values, nationality, species, identity or religion. Within the community, human attitudes go beyond their immediate family members and extend to other members of the group. In society and in nature, communities are shaped as a way to help protect people in the group. However, the environmental definition of a community is different - it just refers to how different species interact with each other. Ecosystem Ecosystem Ecosystem is a system made up of living organisms in the community interacting with parts of the environment. Ecosystems are characterized by nutrient cycles and energy flows. Here's an example of a nutrient plants (living) grow using sunlight and soil (inanimate) and eat animals that then eat larger animals (living). For example, imagine a thriving coral reef. There are living organisms such as fish, algae and corals, but also inanimate components such as rocks, sand and water. Each of these living and non-living things interact with each other to create a vibrant ocean habitat. All of these components working together are defined as ecosystems. Biosphere Biosphere is basically the sum of all ecosystems in the world. This means that different aspects of our planet, such as the atmosphere, the lithosphere, all living things, and all the other organisms that make up the Earth's biosphere. The original concept of the biosphere, coined by geologist Edward Sus in 1875, was defined as a place on the Earth's surface where life lives. Basically, our Earth is the only biosphere that we know at present in the entire universe. That's why we have to protect our planet! SymbiosisSymbiosis is any type of close and long-term connection between two different biological organisms. There are three types of symbiosis: reciprocity: relationships in which both organisms benefit. For example, cleaner fish that eats detritus growing on whales and whales. Commensalism: Relationships where one organism wins, while the other does not help or harm. An example of commensalism are birds and the trees of which they live. Parasitism: a relationship in which one organism wins and the other harms. Ticks are a great example of this. They attach themselves to animals or people and feed on them, harming them in the process. Have you ever seen a movie In Search of Nemo? Nemo, a clown fish, lives in a sea anemone in a mutual relationship. This is an example of reciprocity, because anemone can sting other fish and protect Nemo from predators, while Nemo emits a high sound that scares away butterflies who are able to eat anemone. Such symbiotic relationships exist everywhere in nature! NicheAn ecological niche is the role that the body or population plays in its environment. For example, dung beetles eat waste from other large animals and contribute to decomposition within their area. No other organisms meet this need, so the dung beetle is the only creature occupying the ecological niche of using animal droppings as a food source. Habitata habitat is a type of environment in which a particular species lives. To be considered a suitable habitat, the area must provide nutrition, reproductive companions, and protection for the body. Habitats should not be limited to a geographical area. Habitat types can include coral reefs, moss clusters, and even the human body (for parasites). Basically, habitat anywhere that group of organisms PreservationConservation is a deliberate preservation Resource. A few examples of resources that we need to work to conserve include: The Earth's rainforestsThe environment habitats of endangered species, such as coal and oil On our planet's biodiversity, for example, it's not easy for most businesses and individuals to make conservation part of their regular practices, that's something we all need to commit to. The following definitions will describe some of the consequences we will face if we continue to fail in preserving the resources of our planet. Threatened species are any organisms (animals, plants, aquatic life forms, etc.) that have the potential to die out in the near future. According to the International Union for Conservation of Nature (IUCN),

an organism is considered endangered if it falls under three categories: Vulnerable: If the body's habitat is limited, its population falls below 10,000, or there is at least a 10% chance of the species disappearing in the next 100 years, then it is considered vulnerable. Endangered species is considered endangered if it can disappear in the near future. Critically endangered: The species is considered critically endangered if it has an extremely high probability of extinction in the wild. The vast majority of endangered species have not recovered their populations and have died out. Since the term threat is an umbrella term for three categories, some organisms that are considered threatened are at much greater risk than others. For example, while black rhinos and African elephants are considered endangered, black rhinos are endangered (estimated to pop 5,500), while African elephants are considered vulnerable (an estimated pop 415,000). Population size plays a big role in the categorization of the species. The endangered species category of endangered species, the threatened species belongs to an organism that is likely to disappear in the near future. Green sea turtles and Siberian tigers are examples of endangered species. Many countries have created laws that protect endangered species from hunting and land development. Conservation organizations are also working to breed and rehabilitate the habitats of endangered species in order to increase their numbers. Through these actions, we can sometimes save endangered species from extinction. ExtinctionExtinence occurs when the last organism of the species dies. This usually occurs when the species is unable to reproduce or adapt to a new environment. Examples of extinct species are woolly mammoths and dodo birds. Nowadays, the huge problem is that countless species die every year because of human actions. Pollution Prevention Applies to Any that reduces, eliminates or prevents the source of contamination. Pollution is harmful to humans, to humans, as well as many other living organisms. By reducing or preventing pollution, we can improve the health and well-being of ourselves and our planet. Examples of pollution prevention include: Legislation that limits the amount of toxins factories can release into the atmosphereInfrontally friendly manufacturing processesInceivable efforts to reduce, reuse and recycle household goods. Public service and cleaning up the projects you do in scouting! ☺Police is one of the biggest challenges in the world being solved today, so keep these issues at the forefront of your mind. Maybe one day, you'll be the one to solve them! BrownfieldBrownfield lands any land that was once used (for factories, housing, etc.) but is now unoccupied and could potentially be contaminated. The problem with brown fields is that they are often unsafe for re-development until they are cleaned and updated. The Brownfields Revival Act, launched in 2002, helps fund local governments to clean up and restore brownfields. To date, over 60,000 acres of brown field land have been prepared for reuse! OzoneOzone is a molecule that forms an important level of protection in the Earth's atmosphere. The sun produces harmful ultraviolet radiation, and the ozone layer protects the Earth by absorbing these dangerous rays before they can reach the earth's surface. In 1976, atmospheric researchers discovered that ozone was depleting in the industry producing chemicals such as CFCs. Don't worry though! After numerous regulatory reforms, current studies show that ozone depletion has slowed dramatically. The WatershedA is a land area that catches and collects fresh water. For example, streams that collect sediment and flow into reservoirs will be seen as examples of watershed. Often the water in the natural watershed is absorbed into the ground and can be pumped out in the form of fresh, drinking water. This is what the wells were used for back in the old days! AirshedAn airshed refers to a geographic area that circulates the same airflow. For example, imagine a cave system; Most of the air will not run, and will just spread around and around. A balloon is like that cave example, but on a global level. In some cities and regions, fresh air is not supplied, so air pollution in this area is circulating around and around the same place. Pollution of air pollution can lead to health problems for people living in these areas. The non-unpoint source of SourceA usually refers to sources of pollution that are generated from a large area rather than a single point. This means that instead of The factory is pouring its waste into the river to create pollution, pollution instead comes from a large area and is carried by liquid runoff.Common examples of non-point sources of pollution include: Earth-stock Earth-stock Heavy RainsWhy drainage technologyIn the current waste disposal in residential areas, non-polluting sources is a problem because water flow is caused by natural and human pollutants. These plastics and hazardous waste eventually ended up swept in our lakes, rivers and oceans. For example, most hybrid cars run on gasoline and electricity. The electricity used to power these vehicles is generated by converting the engine's rotary energy into electrical energy. Hybrid vehicles are much more environmentally friendly than their gas counterparts. Gasoline is an unkillable resource that is refined from oil pumped out of the ground. On the other hand, energy sources such as electricity, hydrogen or biofuels are considered renewable. This means that there is no limited amount that can be produced. CellA's fuel cell converts the chemical energy of fuel into electricity. In most cases, this is done by converting hydrogen and oxygen into a form of energy that can trigger the engine or act as a battery. Fuel cells present in a huge opportunity to start weaning off non-reliable fossil fuels and switch to clean energy sources. This exciting technology has not yet been perfected, but it is increasingly being used worldwide!3) One activity of seven of the following categories (using the activities in the brochure is a sign of merit as the basis for planning and projects): I have reviewed stressed knowledge based on the requirements below. However, I urge you to consider completing some of the requirements that I do not cover. Many of these options will teach you interesting and useful life skills that can't be obtained from simply memorizing information. If you have extra time, definitely pursue your interests!3a) Ecology- Option 1: 3a(1) Conduct an experiment to learn how living things react to changes in their environment. Discuss your observations with your consultant.-Option 2: 3a(2) Conduct an experiment illustrating the greenhouse effect. Keep a log of your data and observations. Discuss your findings with your consultant.-Option 3: 3a(3) Discuss what an ecosystem is. Tell us how it is maintained in nature and how it survives. As we mentioned in Demand 2, the ecosystem is a system in which a community of living organisms interacts with its non-living environment. In nature, it can be Savannah, where plants grow on top of rocks using sunlight and nutrients. These plants then eat antelopes, and antelopes eat lions or other predators. just one small example of many of the ecosystems of our planet! How is the ecosystem maintained in nature? The ecosystem is supported by a delicate balance of resources between predators and prey. If there are too many predators, many, herbivorous prey will be killed. This is likely to cause plants to grow out of control and predators later starve due to lack of food. On the other hand, if predators in the ecosystem are killed, predatory animal populations will grow rapidly. This may seem like a good thing at first, but over time they will consume all the resources of the ecosystem. After all, this can cause predatory animals to migrate or risk starvation. As you probably now understand, ecosystems can only thrive by maintaining a delicate balance in the food chain. Unfortunately, in many places around the world people have broken these food chains and caused ecological collapse. I'll go into more detail on this topic below. How does the ecosystem survive in nature? In order for the ecosystem to survive in nature, four components must be provided: Manufacturers: Manufacturers are tiny organisms, such as the production of their own nutrients from sunlight and water. Manufacturers include algae, herbs, plants and some bacteria. Consumers: Consumers like herbivores that eat producers (such as deer) as well as carnivorous animals that eat herbivores (such as wolves). Often herbivores are called primary macroconsumeras and carnivores are called secondary macroconsumeras. Examples of decomposers include bacteria, fungi and insects. These organisms break down the waste of the ecosystem, whether it's rotting logs, feed or dead animal! Abiotic substances: These are the main building blocks of the environment. Anything that does not live in the ecosystem, from soil and rocks to sunlight and water, is an example of abiotic substances. This is what manufacturers eat! It is known that people reset this balance and lead to the destruction of ecosystems. We did this in a variety of ways - from time to time killing animal-consumers and, in other cases, releasing chemical pollutants that stop manufacturers or decomposers from functioning normally. Climate change is another important factor in environmental destruction. Changes in temperature and precipitation can cause significant damage to any of the four components of the ecosystem. As a scout who can create a positive influence, you too must in turn to curb the destruction of the beautiful ecosystems of our planet! More on this in the next section... 3b) Air Pollution - Option 1: 3b(1) Perform an experiment to test for particulate matter that contributes to air pollution. Discuss your findings with your consultant.-Option 2: 3b(2) Record travel, mileage, and family car fuel consumption for seven days, and calculate how many miles per gallon the car receives. Determine whether it was possible to combine any trips (chain) rather than forged back and fore. Using the idea of a travel chain, determine how many miles and Gas could have been saved in these seven days.-Option 3: 3b (3) Explain what acid rain is. In your explanation, tell us how it affects plants and the environment, and about the steps that society can take to help reduce its impact. In Demand 3a, we were just talking about how people often damage ecosystems, and acid rain is a great example of this. Acid rains occur in areas where there is a large amount of sulphur dioxide and air pollution with nitrogen oxide. This type of rain has an extremely harmful effect on plants, animals and human infrastructure. Here is a large and short video (1:58) that explains the causes and consequences of acid rain: Obviously, acid rain is acidic and damages living creatures. Some of the negative effects of acid rain include: Soils become infertileAcocidation of coastal waters that can kill many species of algae, eggs and small crittersCorrosia historical monuments, homes and citiesDecoiling forests at high altitudes that are surrounded by clouds of acid rainLuckily, acids in acid rain are too diluted to directly harm people. However, the components that cause acid rain, sulphur dioxide and nitric oxide, can cause heart and lung problems in humans. To reduce the impact of acid rain, we need to reduce the amount of pollutants we release into our atmosphere. This can be done by introducing stricter emission rules on emissions that a plant can produce, or by encouraging the public to purchase cleaner vehicles. Air pollution is a huge problem that we all need to work together to solve. Ready to go to demand 3c)? Click here! Congratulations on completing the first half of the environmental science merit badge! Wow, we just covered a ton of information, and now the page is even starting to lag! That's a good job. Are you beginning to understand the science of our environment more thoroughly? You definitely deserve a break at the moment; Give yourself a pat on the back! ☺E.G., you're ready to continue part 2 of the Environmental Science Merit Icon (Requirements 3-6) click here! Also, if you're interested in difficulty ranking for every Eagle required merit icon, you can check out my full guide here! PS: The article also links to my other end-of-life icon guides, which will help you complete your merit badge sheets. Sheets.