

**Env. Sci.:** [https://filestore.scouting.org/filestore/Merit\\_Badge\\_ReqandRes/Environmental\\_Science.pdf](https://filestore.scouting.org/filestore/Merit_Badge_ReqandRes/Environmental_Science.pdf)

**General Strategy:**

The scout must communicate and coordinate a specific strategy with the counselor. To complete the requirements, a discussion of each requirement should be submitted to the counselor and/or a meeting may be arranged to discuss each requirement directly.

Requirement 1: Make a timeline; include important, events, organizations, and people. Useful online sources may include [environmentalscience.org](http://environmentalscience.org), [timetoast.com](http://timetoast.com), and Google Scholar.

Requirement 2: Define important terms. Useful online sources may include [encyclopedia.com](http://encyclopedia.com) and the Oxford Research Encyclopedia of Environmental Science.

Requirement 3: Choose 7 out of 8 options (a) or (b) or (c) or (d) or (e) or (f) or (g) or (h), then complete one of the activities as listed for each of the chosen options.

Option a (Ecology) activity 3 would be easiest to complete remotely.

Option b (Air Pollution) activity 2 or 3 would be easiest to complete remotely.

Option c (Water Pollution) activity 3 would be easiest to complete remotely.

Option d (Land Pollution) any activity 1 or 2 or 3 could be completed remotely.

Option e (Endangered Species) activity 1 or 2 could be complete remotely.

Option f (Recovery and Conservation) activity 1 or 2 could be completed remotely.

Option g (Pollination) activity 1 or 2 could be completed remotely.

Option h (Invasive Species) activity 2 would be easiest to complete remotely.

Requirement 4: choose two different outdoor study areas, and conduct study (a) or (b).

Option (a) plot 4 square yards for each study area and catalog the species found there.

Option (b) make 3 20-minute visits to each study area and record your observations.

Requirement 5: identify the items necessary in an environmental impact statement. Scouts should review example environmental impact statements provided by the counselor.

Requirement 6: identify 3 career opportunities and research 1 of them. Useful online sources will include at least an Environmental Science program at an accredited university and a professional Environmental Science organization.

## Research and Completion Strategy

The Merit Badge book is an excellent source of information and the scout should read it!

More extensive research can begin with a simple Google search (Yahoo and Bing also good).

### Tips for using search engines like Google:

In general, Google scans the entire internet for each keyword regardless of word order. For example, if you ask Google *what is geology*, Google will scan the entire internet for websites that contain the word *what* and/or *is* and/or *Geology*. If you want Google to literally search for the phrase *what is geology*, then you have to literally type into the search bar with quotes "*what is geology*". You can also group keywords with conjunctions. For example, if you literally type *geology AND resources* into the search bar, Google will scan for websites that contain both words *geology* and *resources*. Further, literally typing with quotes "*geology and resources*" will give search results for websites that contains the literal phrase *geology and resources*.

Wikipedia is not a source – it is a search engine similar to Google, except it is an encyclopedia that only searches itself. However, Wikipedia articles will often list the contributing sources that could be searched for on Google.

### Tips for completing and discussing work remotely:

Scouts should not complete work alone, especially for tasks that may require the Buddy System and/or adult supervision. Adult leaders shall adhere to Youth Protection standards.

After completing a requirement, the scout must provide a discussion to the counselor for review and approval. A discussion could be verbal, visual, and/or written. For remote completion of requirements, the discussions could be phone or video conversations, video submissions, PowerPoint presentations, emails, or word documents. The discussion must meet the counselor's satisfaction that the requirements are complete.

When providing a discussion, the scout should summarize what they have done and learned. For written summaries, the discussion should use specific terms and statements that are checked for spelling and grammar. To prove requirement completion, a photographic and/or video log should be provided along with a discussion. To prove research valid, in-text citations and/or listed references should be provided for each source of information (such as a book or website); specific source citation and referencing guidelines can be found through Google. The length and format of any discussion will vary depending on the exact requirements.