

# YOUNG WATER STEWARDS

## 2017 Research Guide for Students

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# YOUNG WATER STEWARDS

## Culminating Project

### Objective

To research and present an important watershed or water quality topic that has local relevance. Students will take what they have learned from the Young Water Stewards project and delve deeper into a topic of their choice. They will be able to present their findings to the class or to outside community organizations.

### Water Quality Issues in Washington

- Nonpoint pollution
  - Stormwater Runoff
  - <http://www.ecy.wa.gov/programs/wq/nonpoint/>
  - <https://www.epa.gov/nps/nonpoint-source-what-you-can-do>
  - [http://oceanservice.noaa.gov/education/tutorial\\_pollution/welcome.html](http://oceanservice.noaa.gov/education/tutorial_pollution/welcome.html)
- Fecal coliform
  - <https://www.cob.org/services/environment/lake-whatcom/pages/bacteria.aspx>
  - <http://www.whatcomcounty.us/DocumentCenter/Home/View/3429>
- Temperature
- Dissolved Oxygen
  - <https://water.usgs.gov/edu/dissolvedoxygen.html>
- Some Ag practices
  - <http://www.ecy.wa.gov/programs/wq/nonpoint/Agriculture/agwqrisks.html>
- Harmful Algal Blooms
  - <https://www.nwfsc.noaa.gov/research/datatech/tech/esp.cfm>
  - [http://oceanservice.noaa.gov/facts/why\\_habs.html](http://oceanservice.noaa.gov/facts/why_habs.html)

## **Best Management Practices**

- Riparian buffer zones
- Weather dependent manure spreading
- Fix leaking septic systems
- Storm water gardens
- Fix leaky cars
- Restore native vegetation
- Shade streams/ rivers

<http://www.ecy.wa.gov/programs/wq/nonpoint/Agriculture/agnpssolutions.html>

## **Careers in the Science Field**

- Marine Biologist
- Marine/terrestrial/field/forest Ecologist
- Toxicologist

Follow these links for other careers you may be interested in:

<http://www.marinecareers.net/>

[https://www.nwfsc.noaa.gov/education/documents/NOAA%20Career%20guide%20\(1\).pdf](https://www.nwfsc.noaa.gov/education/documents/NOAA%20Career%20guide%20(1).pdf)

# YOUNG WATER STEWARDS

## Choosing a Topic or Theme

Choosing a topic or theme for a research paper or project can be hard. Here are a few tips to help you decide on what to research:

1. Make sure to pick a topic you are interested in, and that follows the guidelines set by your teacher! If you do not care about your topic, completing the project will be that much harder.
2. Try to narrow your topic. Having a general topic can make research more difficult, and you might end up finding more information than you know what to do with. Some great ways to narrow a topic include thinking about who, what, when, where, and why questions:
  - Who is affected by this topic? Can you think of any local or global organizations that know more about this topic?
  - What are major questions or unknowns for this topic? What kind of opinions or viewpoints are associated with this topic? What are your opinions on the topic?
  - When was/is your topic relevant?
  - Where was/is your topic relevant? Are there certain locations that your topic is relevant? Is it a local or global topic?
  - Why did you initially choose your topic? Why is it interesting to you?

# YOUNG WATER STEWARDS

## How to Find Credible Sources

### How to use different search engines

Multiple search engines can provide you with credible sources. Google, Yahoo, and Bing are main search engines that we use every day, but there is also Google Scholar, WorldCat, WorldWideScience, and other databases that will produce credible sources. When searching these databases, be sure to word your search as specifically as possible.

### What about Wikipedia?

Wikipedia can be a great source to learn the basics about your topic, and to access other, more credible sources. However, Wikipedia should never be cited in a research paper or project, as most of the content can be edited by anyone, regardless of their knowledge on a subject.

### What is a credible source?

To determine if a site is credible, you should ask yourself these questions:

#### 1. Who is the author?

Credible authors will cite their sources, which is another way to get good information for your research. If you are unsure of the author's credibility, you can search the author's name in Google to see what other work they are involved in. Also look for an "About" or "About the Author" link on the site.

#### 2. How recent is the source?

Usually the newer the source, the more accurate the information. However, older articles and research are not to be ignored completely. If you are unsure of the credibility of an older source, ask your teacher.

### **3. Where did the source come from?**

The credibility of sources found from the internet can be tricky to determine. Websites ending with .edu, .gov, and .org are usually credible, though it is possible for websites to obtain those domains without being a completely credible source.

### **4. What does the source look like? What is its main purpose?**

What is the article/ website trying to portray? If the website has a lot of advertising, and is trying to sell a product, then it probably is not a credible site. Websites that look more professionally designed tend to be more credible, but again, it depends on the site.

### **Other credible sources for potential use in the culminating project:**

<https://www.nwfsc.noaa.gov/>

<https://www.eopugetsound.org/articles>

<http://wsg.washington.edu/aquaculture/research.html>

<http://www.marinecareers.net/>

<https://www.nwfsc.noaa.gov/research/datatech/tech/esp.cfm>

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## Plagiarism, In-Text Citations, and Works Cited Page

Plagiarism is the act or practice of taking another's thoughts and/or writing and passing it off as your own. There are a number of actions that are labeled as plagiarism, like buying or stealing a paper, borrowing a paper from a friend and copying portions of it, hiring someone to write your paper for you, or copying parts of a text without citing it. Even if you don't mean to copy something, teachers do not differentiate between accidental and purposeful plagiarism.

### More on how to avoid plagiarism:

<https://owl.english.purdue.edu/owl/resource/589/02/>

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It is very important to cite sources correctly to avoid plagiarizing someone's work. To do this, you first need to determine the citation format that your teacher prefers, usually MLA or APA. Below are links to sites that show the correct format for citing almost any kind of source, including videos and tweets.

### How to do in-text citations:

MLA Format: <https://owl.english.purdue.edu/owl/resource/747/2/>

### How to make a works cited page:

MLA Format: <https://owl.english.purdue.edu/owl/resource/747/01/>

<http://www.easybib.com/>



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## Presentation

Students will be able to apply what they have learned from the Young Water Stewards program to come up with solutions to a chosen water quality issue, which they will then present to members of the community.

### **Examples of presentation formats:**

- Poster/ trifold
- PowerPoint
- Brochure
- Video
- Build a model

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## Project Rubric

Points	1	2	3	4	Total:
<b>Subject Knowledge</b>	Student has no knowledge on their subject, and provides little to no background information	Student has some knowledge, but leaves out important background information or gives inaccurate information	Student demonstrates understanding of their topic, but may not provide extensive information	Student demonstrates in-depth understanding of their topic, and presents accurate and extensive background information	
<b>Evidence and Conclusions</b>	Student makes no connection to scientific evidence, and statements are incorrect or unsupported	Student makes poor connections to scientific evidence	Student makes some connections to evidence, but conclusions may be insufficiently supported	Student provides multiple, credible sources to support their thoughtful conclusions	
<b>Solutions</b>	Student does not offer any solutions to their water quality issue	Student offers few solutions, but does not draw from scientific understanding or evidence	Student offers some solutions, but lacks in-depth connection to scientific evidence and research	Student offers well thought out solutions drawn from in-depth understanding of scientific evidence and research	
<b>Oral Presentation</b>	Student is unprepared, lacks a cohesive presentation format, and cannot answer any questions about their topic	Student is somewhat prepared, but the presentation lacks cohesion, and student has a hard time answering questions	Student is prepared, has an adequate presentation, and can answer most questions	Student is well-prepared, shows a well-thought out presentation, and can answer all questions	

**Total: \_\_\_\_/16**