

YOU'RE STUMPED!

It happens to the best of us. We get to a point in our work (sometimes at the very beginning) when we realize that we don't have enough information to move forward.

The list below outlines the places you can go to find the answers to questions and to help you understand material a little better.

Start at the top of the list and work your way through each of the listed resources until you find your answer. Note that "ask your teacher" is the very last item on the list. That's not because I'm lazy or I don't want to help you. It's because one of the main goals of the course is to get you to be an effective researcher and problem solver. So if you end up asking me, I'm going to give you guidance and support, but probably not the answer you need. If I have to give you the answer, then we have both failed a little bit.

Da List --

1. **A member of your group** -- be careful, though that he or she is teaching you the answer and not just doing the work for you. Otherwise you haven't learned anything, and you will probably ask him the same question tomorrow and the next day until he gets fed up with you.
2. **The course materials** -- in the course web page, you will find links to many online resources and videos of lessons and demonstrations. I took the time to post them because they are good examples and directly related to the projects we are doing.
3. **The Important to Know and Do section of the class page** -- these are not answers, but they are questions that will help you understand what you need to find out. Use this vocabulary to craft a good google search.
4. **Google** -- For the types of things that you will need to find in this course, Google is probably the best place to start. Be sure to **craft good keyword searches** and also to use google's specific search operators (-, *, ""). Be aware of the different categories of information you will find when you search google:
 - a. **Wikipedia Entries** -- These are great sources of information. I have found it to be very reliable and to give a very general overview of a concept. For example, if you want to know what Volts or Amps are, Wikipedia will give you a good explanation. Sometimes, depending on the topic, the articles can be a little difficult to understand.
 - b. **YouTube** -- I like YouTube when I need a visual explanation of how to do something. There are lots of good YouTube videos on how to solder for example. Be more skeptical of these sources, however. Unlike Wikipedia, there are no controls on the accuracy of the information. Some videos are very high quality and very accurate. Others are low quality and partially wrong.
 - c. **Note** that you can use google image search and video search to find visual content. Google timeline search can help you see if a resource is old or new.

- d. **Help / Discussion forums** -- Sometimes you need to purchase a membership to see the answers, but many are free. The person who asks a question can “vote up” the best answer, but realize that answers vary in quality and are only as good as the people answering them.
 - e. **Product help documentation.** There is online documentation for most programming languages published by the language authors. These are your best resources for how to do something in a programming language. Documentation also exists for many electronic components such as PING sensors and IR sensors.
 - f. **Personal web pages made by other hobbyists.** These will vary in the quality of the writing, presentation, and accuracy.
- 5. **Social Networks** -- such as twitter or google plus can often give you direct access to people who wrote the software you are having trouble with
 - 6. **Your Teacher or Librarian**-- If all else has failed, by all means, come and ask me. I am probably going to give you some help and guidance in finding your answer in one of the searches above, though.