

# ***FIRST<sup>®</sup> LEGO<sup>®</sup> League***

# ***TUT******RIALS***

teach

share

learn

## HOW DO YOU RESEARCH?

BY SESHAN BROTHERS

## WHY TEACH THE PROCESS?

- Most students in *FIRST* LEGO League Challenge have not been taught how to do research.
- Discussing how to research is an important first step before sending students to the library or Internet to begin their Innovation Project Research.
- Online safety is also a concern.

# FIVE MAIN PARTS OF RESEARCH

Develop Keywords/Search Terms

Select Reliable Sources

Learn to Take Notes

Cite Your Sources

Share Information/Results

# SELECTING KEYWORDS

- What keywords you use in your search matters
- While adults may be familiar with search terms, young students may not be.
- Go through the Challenge prompt together and highlight important terms that can be used in keyword searches
- Have a coach do some sample searches together to see what sources show up.
- Watch this video:  
<https://www.youtube.com/watch?v=ttaPomA5xUE&feature=youtu.be>

# USING RELIABLE SOURCES

- Not all sources are equal. Some sources are just opinions (e.g. Twitter post, personal blog) and others have been validated by research (e.g. scientific paper)
- For a young team, a coach might create a subset of resources that are reliable
- Watch this: [https://www.youtube.com/watch?v=E\\_JsBhN2dDM](https://www.youtube.com/watch?v=E_JsBhN2dDM)
- Watch this: [https://www.youtube.com/watch?v=Zss-ya\\_QVZQ](https://www.youtube.com/watch?v=Zss-ya_QVZQ)

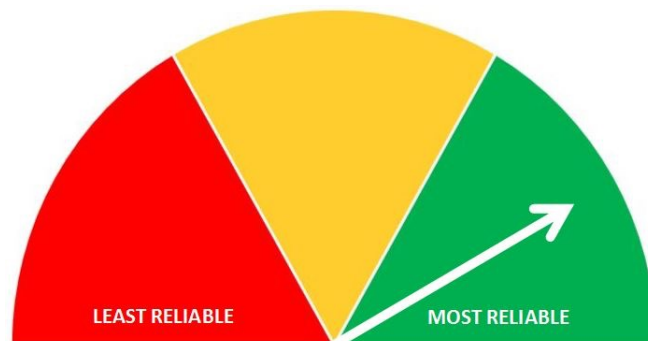


Image Source: University of Washington

# TAKING NOTES

- Taking notes is a skill – you don't want to write too much or too little.
- You also want to learn the difference between quoting someone and paraphrasing their work
- Watch this:  
<https://www.youtube.com/watch?v=Q3SIchdLhhw>
- Watch this:  
<https://www.youtube.com/watch?v=4Xox8MgzXo0>

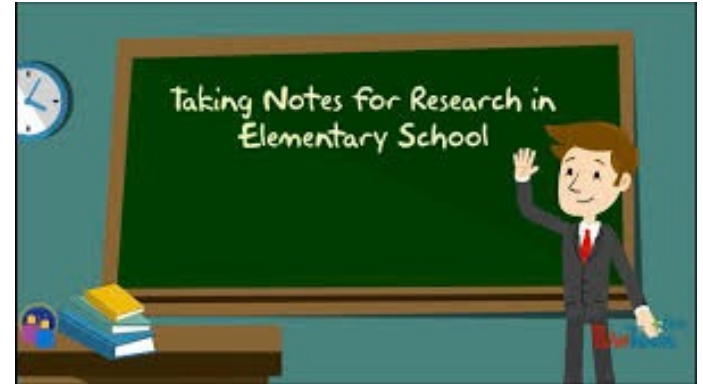


Image Source: Learn and Lead

# CITE YOUR SOURCES

- Citations are how you can give credit to someone else for the idea, the words, etc.
- You can cite websites, articles, experts, other teams, etc.
- In *FIRST* LEGO League, citations do not have to follow any particular format.
- Keeping track of the author and website/links is a great place for a young student to start.
- Read this: <https://guides.lib.uw.edu/research/citations/citationwhat>



Image Source:  
<https://guides.library.unk.edu/c.php?g=710678&p=5051044>

# PRESENTING YOUR RESEARCH

- Being able to communicate what you found during your research is an important part of FIRST LEGO League
- You need to be able to communicate information to your teammates, experts, and judges.
- There are many different ways to communicate information you have found.
  - Some information such as existing solutions may be best presented in a comparison table.
  - A pie chart might be useful for other information.
  - If you are sharing survey data, you must include how many people responded to your survey.



# CREDITS

- This lesson was written by Arvind and Sanjay Seshan
- More lessons are available on [www.ev3lessons.com](http://www.ev3lessons.com) and [www.flltutorials.com](http://www.flltutorials.com)



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