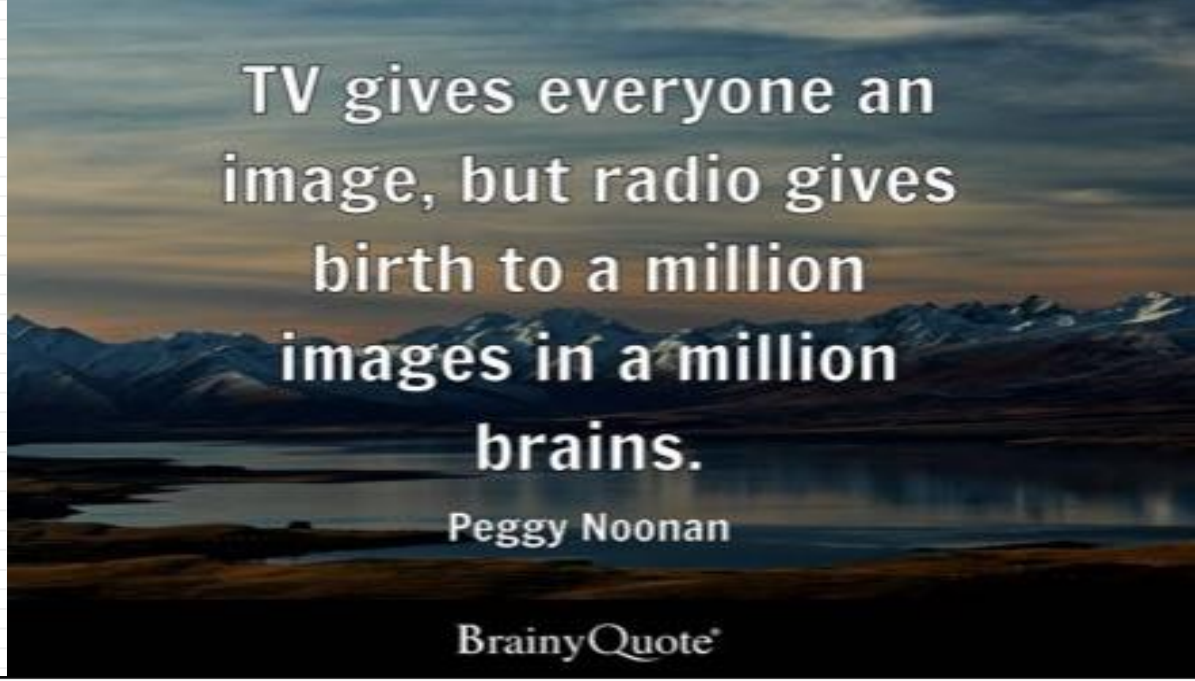
How radio waves changed the world

Student Objective:

- Students will be able to distinguish between a credible and non credible source by completing a worksheet.
- Students will use logic and evidence to construct arguments about how their application of radio waves would be the most beneficial for society.
- Students will create the most engaging and persuasive argument about the applications of radio waves through a digital platform and oral presentation.

What do you think the quotes mean?



I do not think that the radio waves I have discovered will have any practical application.

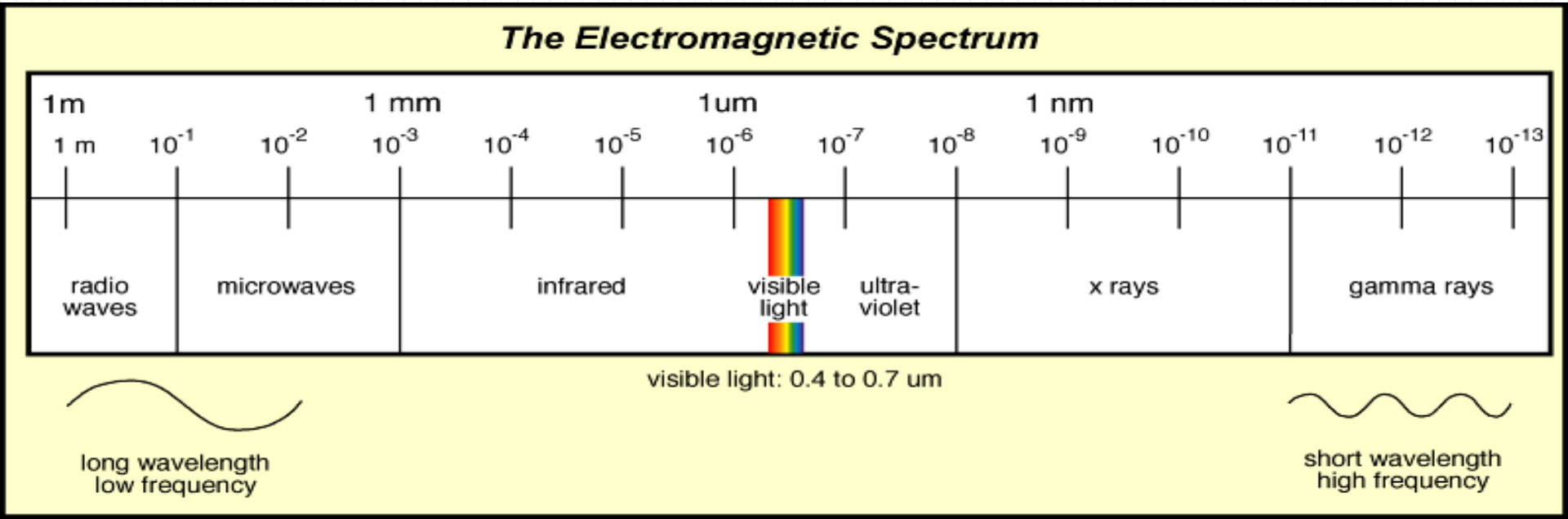
— Heinrich Hertz —

Help Needed!!!!

You are on an airplane traveling to your favorite destination when something starts to fail. You are stranded on a deserted island. You must find a way to communicate with the outside world for help. You have very limited supplies and time is of the essence.

In order to avoid the impending storm we need to figure out which part of the electromagnetic spectrum will be the key to getting off the island.

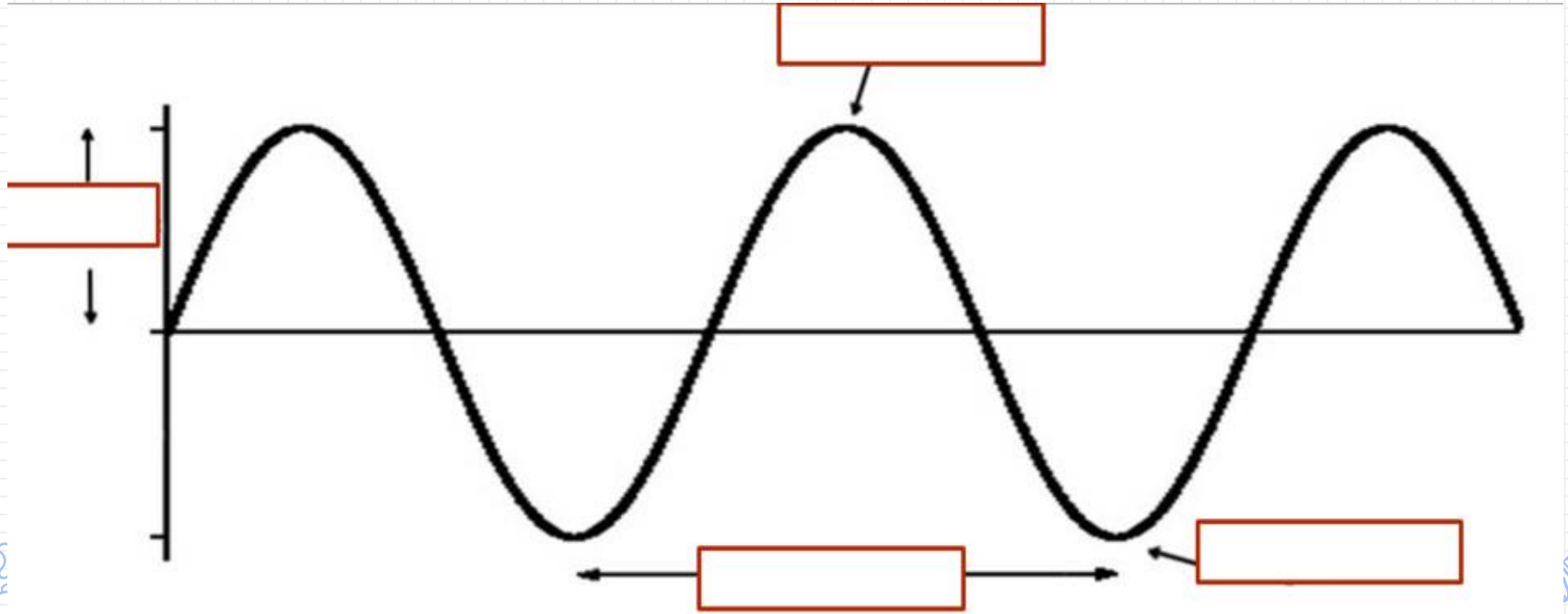
Which part of the electromagnetic spectrum do you believe will be the key to communicate for help?



Electromagnetic Spectrum: Radio Waves

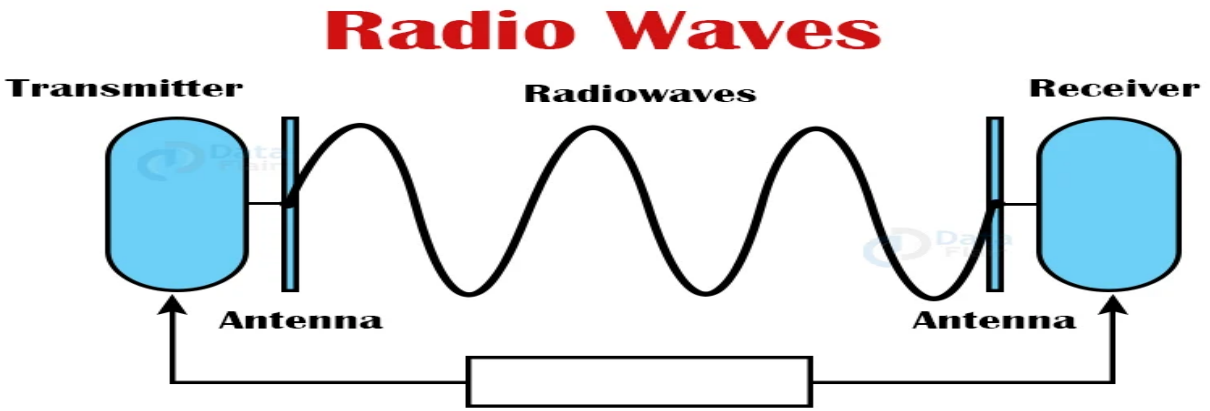
- http://www.youtube.com/watch?v=al7sFP4C2TY

Based on the image below, try to identify as many different parts of the wave as possible?



How do radio waves work?

- Radio waves carry information in a wave that is transmitted and will be detected by a receiver
- An antenna is a device that helps the radio transmitter send information to space and then back to the receiver



Credible or Non-Credible Sources

What is Credibility?

- Credibility is defined as a source that has information that is backed up with evidence and lacks bias.
- Some resources are credible while others may have incorrect information or opinions.
- In scientific research, it is important that you are only using credible sources to support your argument.

- With all the information available we need to find a way to help filter through what is reliable and not reliable information.

Evaluating Sources for Credibility

- https://www.youtube.com/watch?v=PLTOVoHbH5c

Summarize what you've just learned:

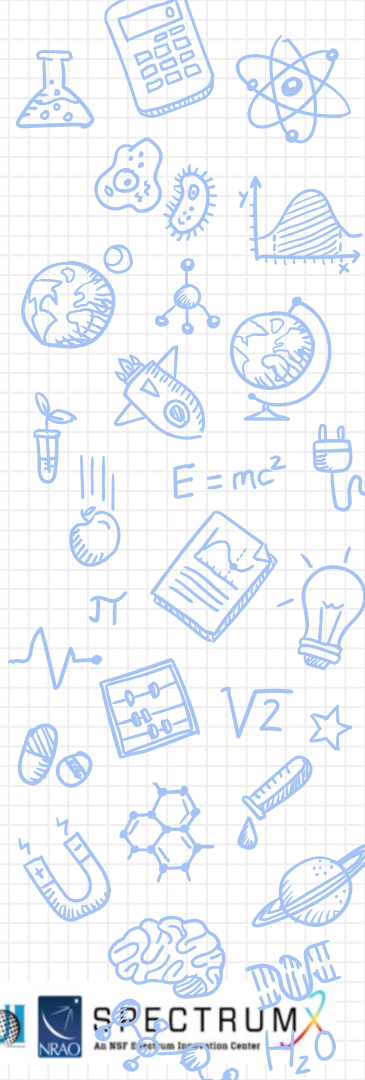
What is Credibility?

Credibility

- ✗ Journals by experts in the field
- ✗ Materials published in the last 5 years
- ✗ Websites from institutions, such as, NASA, JPL, universities, etc
- ✗ Websites that end in .gov or .edu

Non-Credibility

- ✗ Research articles with no citations
- ✗ Blogs, Wikipedia, Facebook, or any social media that is self authored



1. What does credibility mean?

2. What are some examples of credible sources?

3. What are some examples of non-credible sources?

4. Why should the material be recent?

5. Does it matter who your audience is?

Credible or Non-Credible?

- http://www.youtube.com/watch?v=tVo_wkxH9dU

Credible or Non-Credible?

http://www.dhmo.org/

https://zapatopi.net/treeoctopus/

MLA Citation

Free MLA Citation Machine to cite your research.

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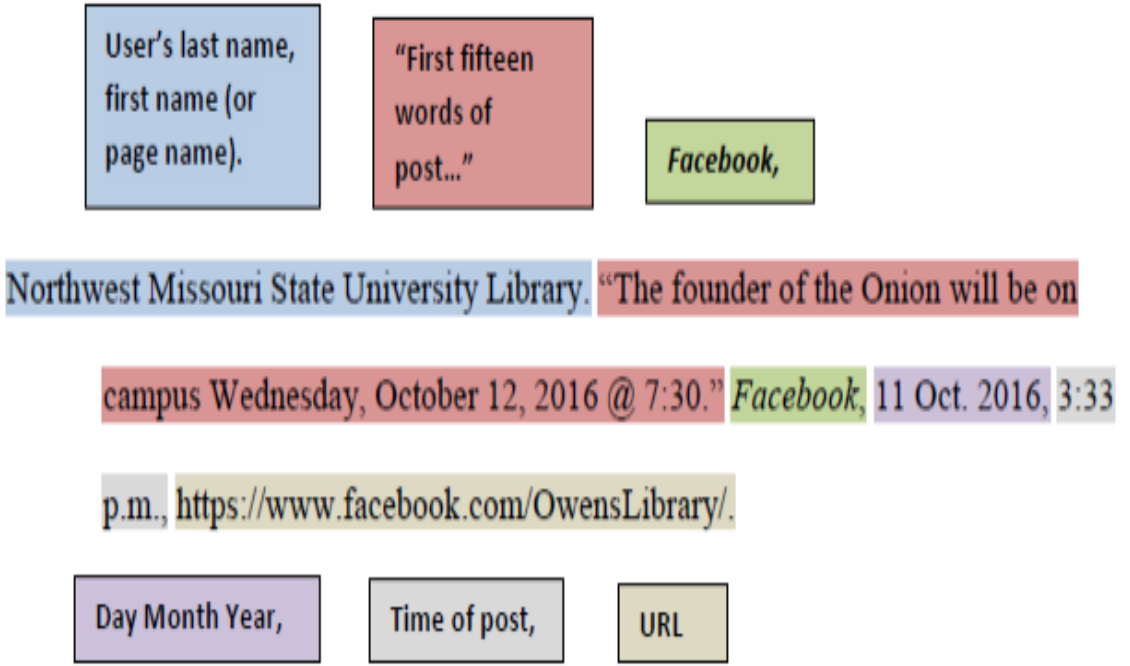

Connect to your own life:

What's something interesting you learned today?

Can you relate this to something in your own life?
(How is it similar, different, or helpful to events in your life?)

Exploring the different applications of radio waves

Radio Waves Applications

1. Cellular Network
2. Remote Controlled Devices
3. Ship Navigation/Submarines
4. GPS Systems
5. Navigation and Air Traffic Control
6. Military Communication
7. MRI/Tire Pressure Sensor
8. Radio Broadcasting
9. RADAR
10. Radio Astronomy
11. Satellite Communication
12. Radio Telemetry

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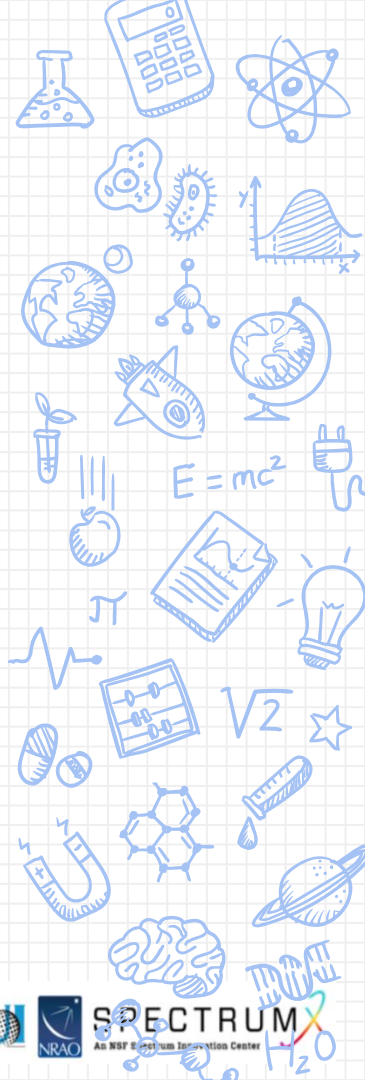
An NSF Spectrum Innovation Center

THANKS!

Credits

Special thanks to all the people who made and released these awesome resources for free:

- ✗ Presentation template by SlidesCarnival
- ✗ Photographs by Unsplash