

The Electromagnetic Spectrum

Name: _____

Date: _____

The electromagnetic spectrum(EMS) includes all types of radiation (EMR) that are visible and invisible to humans. Research the EMS to find the answer to these questions. Use the internet to help you. Write the answers on loose-leaf.

- 1) What are the 7 types of EMR ?

- 2) Rank the 7 types of EMR according to the following:
 - a) The most energy to the least energy

 - b) The highest frequency to the lowest frequency

 - c) The longest wavelength to the shortest wavelength

- 3) What is the only type of EMR that humans are able to see ?

- 4) Which type of EMR does the following technologies use ?

a) Satellite dish	b) X-Ray Machine
c) Telescope	d) Motion Sensors
e) Microwave Ovens	f) Tanning Beds
g) Heat Lamps	h) Radar
i) Linear Accelerator	

5) Describe the positive and negative impacts of each type of radiation

Technology	Positive Impacts	Negative Impacts
Satellite Dish		
X - Ray Machine		
Telescope		
Motion Sensors		
Microwave Ovens		
Tanning Beds		
Heat Lamp		
Radar		
Linear Accelerators		

Grade 8 Science Presentations: THE ELECTROMAGNETIC SPECTRUM

You ~~and your partner~~ will research and present ONE technology that uses a type of electromagnetic radiation that we studied in class. They were:

- Radio Waves
- Microwaves (which are Radio waves with shorter wavelengths)
- Infrared
- Visible Light
- Ultraviolet Rays
- X-Rays
- Gamma Rays

The technology that you will research will be assigned to you by your teacher. The choices are:

AM/FM Radio Keetyn	Motion Sensors	GPS Sean
TV Elliott	Infrared Cameras	WII Remotes Alexa
Cell Phones Beth	Remote Controls	UV Lights Evan
Walkie-Talkie's Destiny	Binoculars	Toasters/Ovens
Microwave Ovens	Telescopes	
Radar (Speed Cameras)	Tanning Beds Riley	
Pagers	X-Ray Machines Seth	
Garage Door Openers Lukas	Cancer Treatment (radiation) Emily	

You will present your technology to your class in a PowerPoint. The internet will be your main source of information but you can also use other text (books, magazines, etc...) to help you. Your slideshow must have the following elements:

- 1) Start with an introductory slide with the name of the technology, a good picture of the technology and the presenters.
- 2) Discuss the history of the technology. Indicate when, who and where this technology was invented
- 3) You indicate what type of electromagnetic radiation that your technology uses and where this radiation lies in the spectrum. (Example: This radiation lies between X-Rays and visible light).
- 4) You describe how your technology works and how it uses the electromagnetic radiation.
- 5) You indicate the positive and negative impacts of using this technology.

Tips for the slideshow or video:

- Add illustrations, diagrams, graphs or other visuals that aid your descriptions and make the slideshow more appealing to your audience.
- Determine how good the website is. Ask yourself if the information is accurate, current, useful, and sufficient (is enough).
- Do not copy word for word – use your own words. Point form should be used to display your information as it is easier to look at.
- Use transitions or animations appropriately. They should not take your audience's attention away. They are not the focus of the show

Criteria for a Slideshow that is MEETING EXPECTATIONS

- The content is accurate, current, useful and sufficient.
- There are no errors in spelling, grammar and punctuation.
- There are illustrations, diagrams, graphs or visuals that are relevant and make the presentation more appealing.
- The slideshow is creative, making good use of themes, transitions animations and builds.

Criteria for a Presentation that is MEETING EXPECTATIONS

- The presenters speak loud and clear and with a good pace (are not speaking too fast or slow).
- The presenters speak fluently. They are well prepared to speak and have knowledge of their material.
- The presenters are making eye contact with the audience and not reading the slides to them.
- The presenters are using their body to focus audience attention. (Example: Move around or point to things you want the audience to look at at). You shouldn't be standing still !