Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Electromagnetic Spectrum & Light - Webquest

Electromagnetic Spectrum

<http://imagine.gsfc.nasa.gov/docs/science/know_l1/emspectrum.html>

Click on the link above and answer the following questions:

1. What is the electromagnetic spectrum? (Hint: Roll over the word to see the definition)

2. What is radiation?

3. While at the website, roll the mouse over each of the following words and write what comes up in the box to describe each.

a. visible light

b. microwaves

c. gamma-rays

d. infrared

e. ultraviolet light

f. X-rays

g. radio waves

4. What is the order of the electromagnetic spectrum from **highest to lowest energy**?

**Use the visual below to answer question 5.**



(a) Longer wavelength; (b) shorter wavelength

5. Which has more energy, A or B? Explain your reasoning.

6. Define a wavelength.

7. What is a frequency of a wavelength?

Visible Light

<http://science.hq.nasa.gov/kids/imagers/ems/visible.html>

Click on the link above and answer the following questions.

8. What makes each color of visible light different?

9. What makes up white light?

10. For visible light (ROYGBIV), which has the shortest wavelength? Which has the longest? Place all the other colors in order based on their wavelength.

11. What determines the color of an object we see? What happens to all other colors?

**Electromagnetic Spectrum**

<http://www.lbl.gov/MicroWorlds/ALSTool/EMSpec/EMSpec2.html>

Click on the link above to answer the following questions:

12. What kind of electromagnetic radiation has the shortest wavelength? The longest?

13. What kind of electromagnetic radiation could be used to “see” molecules? A cold virus?

14. Why can’t you use visible light to “see” molecules?

15. Some insects, like bees can see light of shorter wavelengths than humans can see. What kind of radiation do you think a bee sees?

**Uses of Light**

<http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/electromagnetic_spectrum/electromagneticspectrumrev4.shtml>

Click on the link above and fill out the chart below:

|  |  |
| --- | --- |
| **Electromagnetic Radiation** | **Uses** |
| Radiowaves |  |
| Microwaves |  |
| Infrared Rays |  |
| Visible |  |
| Ultraviolet Rays |  |
| X Rays |  |
| Gamma Rays |  |