

## Internet Exploration

# --ELECTROMAGNETIC WAVES--

Name \_\_\_\_\_ Block \_\_\_\_\_ Date \_\_\_\_\_

Go to Ms. Alvarez' classroom website! In the table of LINKS at the bottom of the page, you will find a link to the University of Colorado's Physics 2000 Project. Click on the link.

⇒ Click on *Einstein's Legacy*

### 1. Choose X-RAYS:

- Play with the Fluoroscope!
- Click on Electromagnetic Radiation (wait for the images to load).
- List **5 types** of Electromagnetic waves?

1.) \_\_\_\_\_ 2.) \_\_\_\_\_ 3.) \_\_\_\_\_

4.) \_\_\_\_\_ 5.) \_\_\_\_\_

- Electromagnetic waves are special. They are the only type of wave that is able to travel \_\_\_\_\_ (click on the smoking Einstein.)
- Using your mouse, adjust the different wavelengths of electromagnetic waves. List the types of waves **in order from LARGEST wavelength to SHORTEST wavelength**.
  - Radio and Television waves
  - 
  - 
  - 
  - 
  - 
  - X-Ray
  -
- Explore the links for Water Waves and Stadium Waves.

### 2. Choose CAT Scans:

- Read the conversation between the two people then go to the NEXT page.
- Read the conversation continued on the next page.
- Play with the spotlight demonstration. Without clicking on the answer first, try to figure out the question in the "By the way..." box to the left.  
What did you find out?

### 3. Choose MICROWAVES:

- Click on OVERVIEW and cook some marshmallows!
- Why do some marshmallows cook faster than others?

**4. Choose LASERS:**

a. List FOUR uses of lasers.

1.

2.

3.

4.

b. Play with the different sources of light.

c. Which color of light has the shortest wavelength? \_\_\_\_\_

d. Which type of light source emits light waves with all the crests and troughs lining up together?  
\_\_\_\_\_

**5. Choose TV Screens:**

a. Click on The Big Picture.

b. Read the page and try out the two demonstrations.

c. In your own words, describe how your television makes one big picture?

d. Read the Black and White TV Screens page. What does the screen at the bottom of the page show?

**6. Choose Laptop Screens:**

a. Click on Polarization.

b. How do polarizing filters work?

c. Look at the page for calculator displays. Each big line that makes up the numbers is called a \_\_\_\_\_? (Hint: "8" has seven of them.)

d. Click on "NEXT" at the bottom of the calculator page and go to Laptop Screens

d. Play with the display that shines different colors of light and fill in the blanks below.

○ Red + Green = \_\_\_\_\_

○ Blue + Green = \_\_\_\_\_

○ Red + Blue = \_\_\_\_\_

○ Red + Blue + Green = \_\_\_\_\_