

Electromagnetic Spectrum and Space (Radio Astronomy)

Learning objectives:

- The student will be able to describe the purpose of using radio telescopes
- the student will be able to define radiation
- The student will be able to define the electromagnetic spectrum?

Materials:

- ◆ Colors we See activity (spectrum, stickers?)
- ◆ EM Spectrum Worksheet
- ◆ Colored Pencils/crayons- Red, Blue, Yellow, Green, Purple
- ◆ Manipulative Terms

1. "Colors" we see Activity

a. Background

- i. How do we "see" colors?
 1. Reflected vs. Absorbed
- ii. Different Colors have Different properties
 1. Mix Red and Yellow= Orange
 2. Mix Yellow and Blue-=Green
- iii. Property=wavelength

b. Procedure:

- i. Head to head competition
- ii. Students race to place sticker on portion of spectrum that we "see"
 1. Green Absorbed-students place stickers on green area of spectrum
 2. Yellow, Blue, Green-Reflected-students would place stickers on red, orange, purple,
 3. All colors reflected- white
 4. All colors absorbed-black

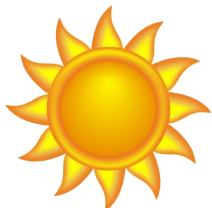
Transition-->small to large scale

2. Studying Space

- a. Space Studied?
- b. Telescopes
 - i. Special Telescope- Radio Telescope

3. What is being "viewed/studied" for space?

- a. Sun
 - i. Heat
 1. Heat=tells us Energy is present
- b. Energy-Radiation
- c. Cartoon Drawing of Sun



4. Organizing Space Information

- a. Electromagnetic Spectrum
 - i. Electro-Electricity

- ii. Spectrum-arranges it
- iii. Magnetic-magnetism
- b. Everything in space= gives off Radiation (ENERGY)

5. Electromagnetic Spectrum

- a. Manipulative
- b. Students color visible light portion