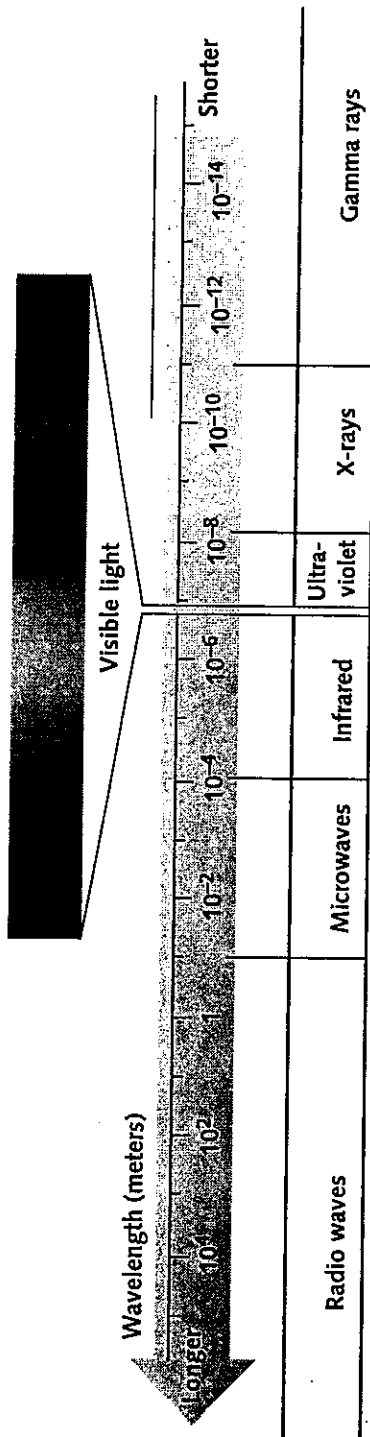


Teaching Transparency 32

Science Through Visuals

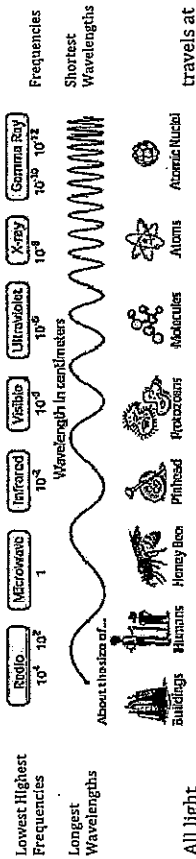
The Electromagnetic Spectrum



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Electromagnetic Energy (Radiation)

Outer space is not empty. It is filled with Electromagnetic Radiation that travels across space in the form of waves. Only a small portion of the spectrum is visible light - the part most familiar to humans.



All light travels at the same speed, known as c .

Electromagnetic radiation (light waves) differ from sound waves because:



Wavelength is λ , the Greek letter lambda

It is defined as:

Frequency is f . It is defined as:

Frequency is related to the Energy of electromagnetic radiation. For example:

For all electromagnetic radiation $C = \lambda f$
This is a(n) _____ mathematical relationship.
So when wavelength is long, frequency is _____; and conversely

C is defined as:

We only see a small part of the Electromagnetic Spectrum (the full range of electromagnetic radiation). What we see is known as the _____.

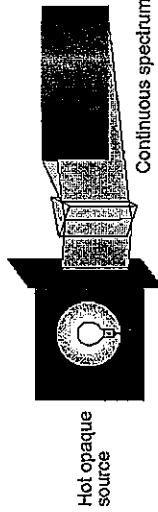
The light we see can be divided further into the individual colors that comprise white light. They are:

Where _____ has the longest wavelength, and _____ has the shortest.

There are 3 spectral types.

Basic Spectral Types

Continuous spectrum is:



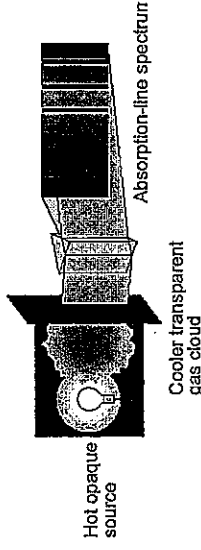
Examples are:

Bright-line spectrum is:



Examples are:

Absorption line spectrum is:



Examples are: