The electromagnetic spectrum

General Atomics Fusion Education

Units	Applications	Natural Phenomena	Properties of the wave model	Things to do with an EM wave
10	10	10	10	10
20	20	20	20	20
30	30	30	30	30
40	40	40	40	40
50	50	50	50	50

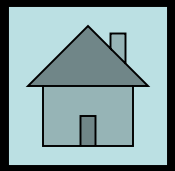
There are 10^{10} of these in a meter.

It is the “Crown” unit of energy.

It is an energy density
but we first learn it as
“force per area.”

It is the Greek letter for wavelength

It describes the number of cycles per second of a periodic function.



It allows us to send and receive information from a distance

It is an instrument that uses lenses or mirrors to receive light from a great distance.

You use this lens-based instrument to view bacteria.

Students use this device to heat food by exciting the bonds in water molecules.

It is a salve used by beachgoers to reduce UV damage to their skin.

The portion of the spectrum seen by a human eye.

Your skin sensors can detect this EM radiation.

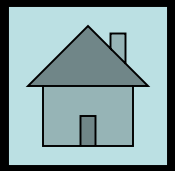
The sun radiates in these portions of the EM spectrum.

The 3K background of the universe is measured in this narrow spectral range.

Our primary, some could say only, source of information about stars.

A mathematical construct having electric and magnetic field vectors at right angles to each other; their cross product pointing in the direction of energy flux.

This trigonometric term is often used when referring to EM waves.



It is the distance between two similar phase locations of two adjacent sine waves.

In vacuum, it is the product of wavelength and frequency.

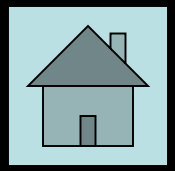
It is the addition of sine waves, whether or not they’re in phase.

It is the redirection of the wavefront at the interface of two materials.

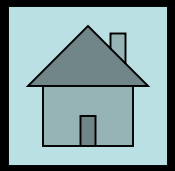
The angle the incoming and outgoing rays make with a normal are the same, by law.

It allows em energy having a specific E-vector orientation to pass.

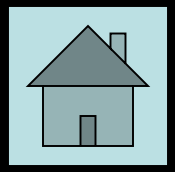
It allows for the separation of em energy by wavelength.



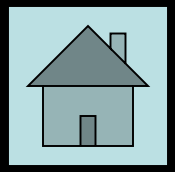
It is the origin (process) of the continuous spectrum emitted from an Edison-style light bulb.



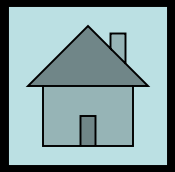
What is an Angstrom?



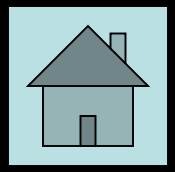
What is a Joule?



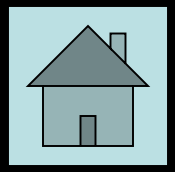
What is pressure?



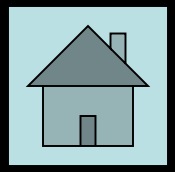
What is lambda, λ ?



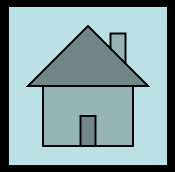
What is Hertz?



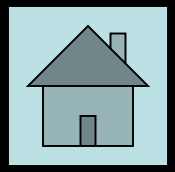
What is radio (microwaves)?



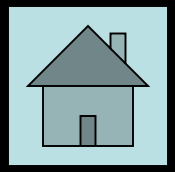
What is a telescope?



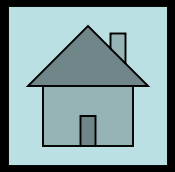
What is a microscope?



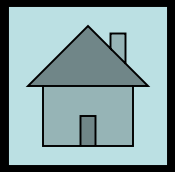
What is a microwave oven?



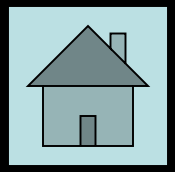
What is sunscreen?



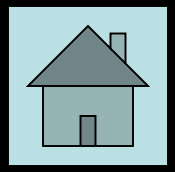
What is visible light ?



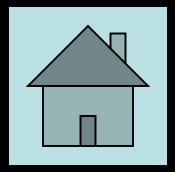
What is infrared?



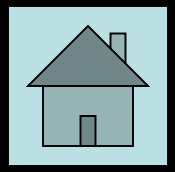
What are radio, infrared, visible light, uv, x-rays?



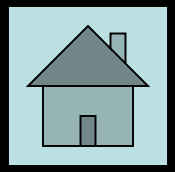
What is the hydrogen microwave signal?



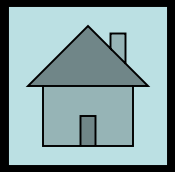
What is the electromagnetic spectrum?



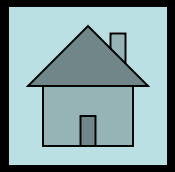
What is the Poynting vector?



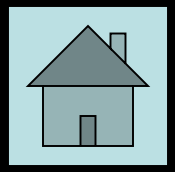
What is a sine wave?



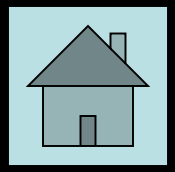
What is wavelength ?



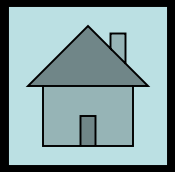
What is c, the speed of light ?



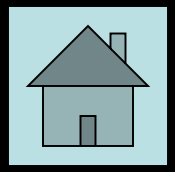
What is superposition?



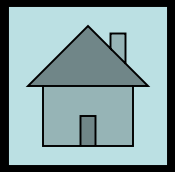
What is refraction?



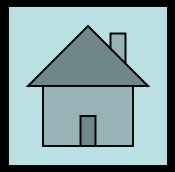
What is the Law of Reflection?



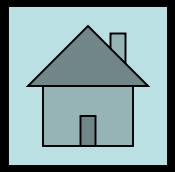
What is a polarizer?



What is a diffraction grating (prism)?



What is incandescence?



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