**Electromagnetic Spectrum**

<https://science.nasa.gov/ems>

*Go to this website and read the Nasa lessons on the electromagnetic spectrum. On the right, you will see all the topics; make sure you read through every one. For each section listed below, write a 1-2 sentence summary of the section.*

**Introduction to The Electromagnetic Spectrum**

Electromagnetic Energy

Our Protective Atmosphere

Atmospheric Windows

**Anatomy of an Electromagnetic Wave**

What are Waves?

Electromagnetic Waves

Waves or Particles? Yes!

Polarization

Describing Electromagnetic Energy

Frequency

Wavelength

Energy

**Wave Behaviors**

Reflection

Absorption

Diffraction

Scatter

Refraction

**Visualization: From Energy to Image**

How Do We Visualize Light We Can’t See?

Digital Camera

Natural Color Images

False Color Images

Data from Multiple Sensors

Color Maps

**Radio Waves**

What are Radio Waves?

Radio Emissions in the Solar System

Radio Telescopes

A Very Large Telescope

The Radio Sky

**Microwaves**

Microwaves

Microwave Bands

Active Remote Sensing

Passive Remote Sensing

Clues to the Big Bang

**Infrared Waves**

Infrared Energy

Discovery of Infrared

Thermal Imaging

Cool Astronomy

Seeing through Dust

Monitoring the Earth

**Reflected Near-Infrared Waves**

Near Infrared Radiation

Healthy Vegetation

Infrared Film

Spectral Signatures of Vegetation

Assessing Vegetation from Space

Soil Composition

Planets in Near-Infrared

**Visible Light**

Wavelengths of Visible Light

The Sun’s Corona

Color and Temperature

Spectra and Spectral Signatures

Active Remote Sensing—Altimetry

**Ultraviolet Waves**

Ultraviolet Light from our Sun

Discovery of Ultraviolet

Ultraviolet Astronomy

The Ozone “Hole”

Ultraviolet Light from Stars

Aurorae

**X-Rays**

X-Rays and Energy

Discovery of X-Rays

Temperature and Composition

Supernova

Earth’s Aurora in X-Rays

**Gamma Rays**

Sources of Gamma Rays

Detecting Gamma Rays

Gamma Ray Bursts

Composition of Planets

Gamma Ray Sky

**The Earth’s Radiation Budget**

Incoming Solar Radiation

Absorbed Energy

Emitted Longwave Radiation

Greenhouse Effect

Radiation and the Climate System