

THE WORLD OF ELECTROMAGNETIC WAVES AND THE OZONE HOLE

Discipline	Enseignement scientifique	Niveau	Terminale
Thème	Thème 1 : Science, climat et société / L'atmosphère terrestre et la vie		1 à 2 séances

Compétences :

Écouter, visionner et comprendre des contenus disciplinaires dans le contexte linguistique et culturel de la section	✓
Lire et comprendre des contenus disciplinaires dans le contexte linguistique et culturel de la section	✓
Parler et interagir à l'oral en mobilisant des contenus disciplinaires dans le contexte linguistique et culturel de la section	✓
Écrire et interagir à l'écrit en mobilisant des contenus disciplinaires dans le contexte linguistique et culturel de la section	
Rechercher et exploiter des informations pour faciliter la coopération internationale dans le contexte linguistique et culturel de la section	

1. The electromagnetic spectrum

Watch the following video and try to answer the questions below.

https://science.nasa.gov/ems/01_intro

- What is the electromagnetic spectrum?
 - Which of the radiations are the shortest ones and the longest ones?
- Give examples of uses or origin of each range of wave in daily life.

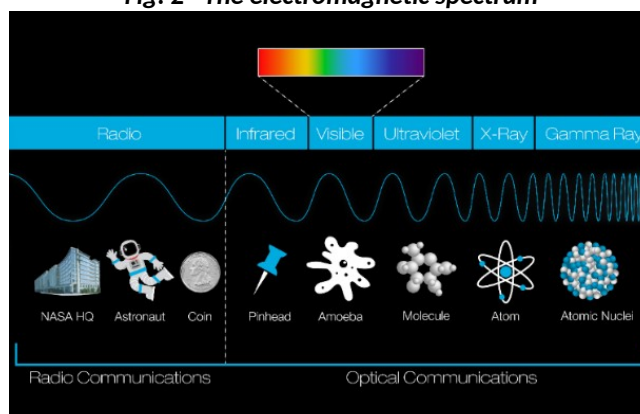
Radio	
Infrared	
Visible	
Ultraviolet	
Xray	
Gamma ray	

- What is the difference between ocean waves and electromagnetic waves?
- Give a definition of an electromagnetic wave. Which characteristics can we use to describe it?
- Complete sketch1 with all the characteristics of a wave.
- How can you define the frequency?
- What is the link between the wavelength and illustrations on sketch2?
- Complete the sketch with 3 axes and 3 characteristics.

Fig.1 - Sketch of a wave



Fig. 2 -The electromagnetic spectrum

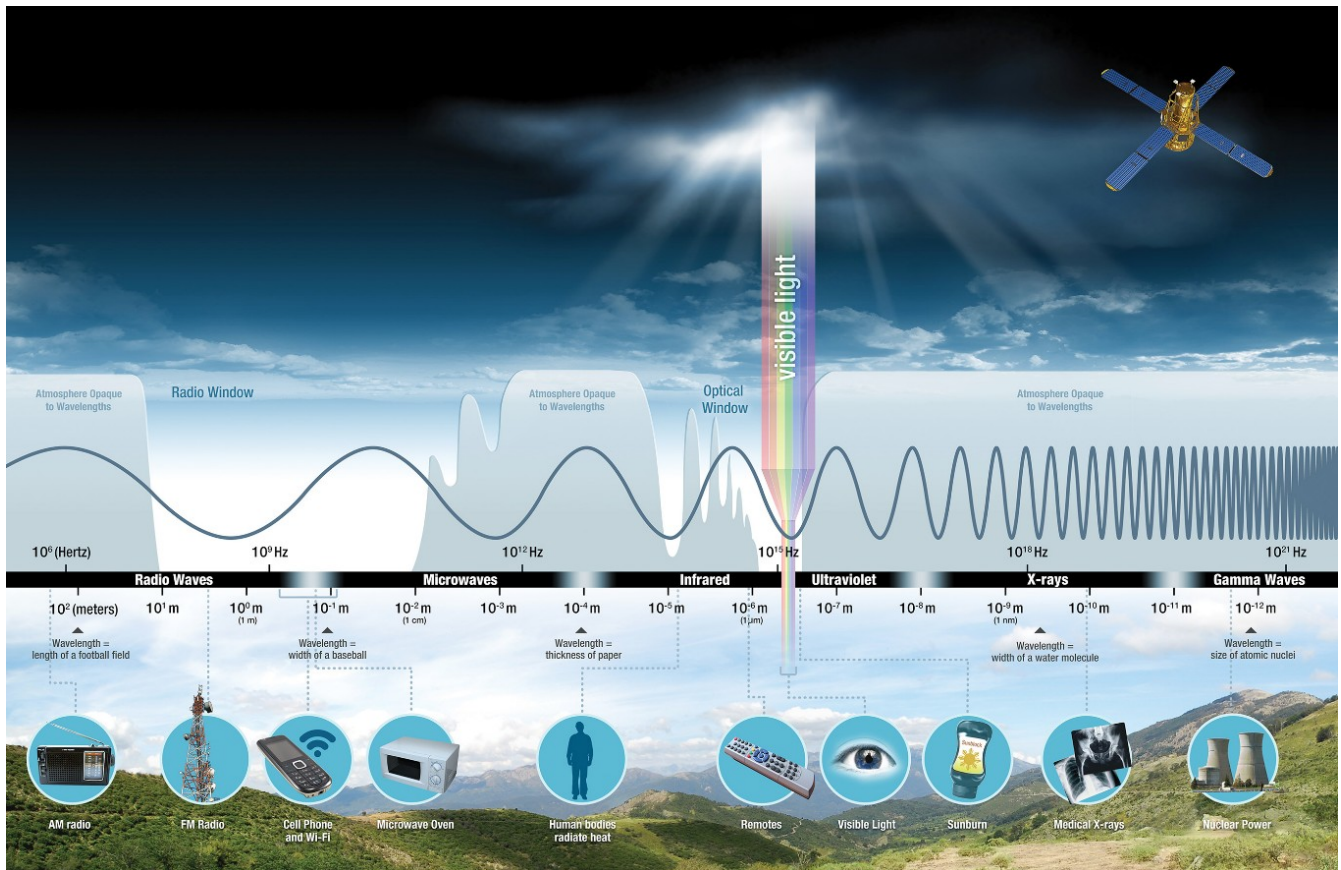


<https://www.nasa.gov/>

2. The role of atmosphere

1. With the illustration below, explain the effect of atmosphere on the different kinds of electromagnetic waves.
2. Justify why we send telescopes with satellites instead of using ground-based telescopes only.
3. Justify the place where ground-based telescopes are settled/installed.

Fig. 3 - Atmospheric absorption of radiations



<https://smd-prod.s3.amazonaws.com/science-red/s3fs-public/thumbnails/image/EMS-Introduction.jpeg>

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