

**Worksheet: Electromagnetic Waves (EM Wave)**

Name \_\_\_\_\_ Grade and Section \_\_\_\_\_ Score \_\_\_\_\_

Teacher \_\_\_\_\_ School \_\_\_\_\_ Date \_\_\_\_\_

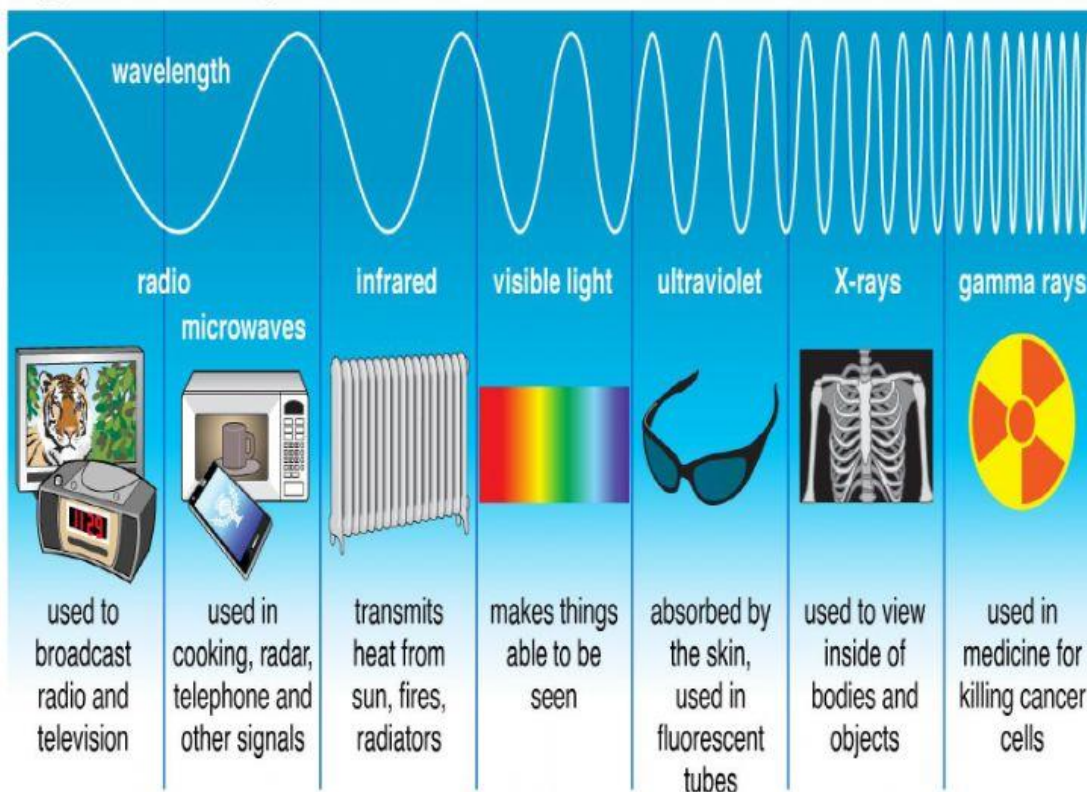
**OBJECTIVE:**

Cite examples of practical applications of the different regions of EM waves such as the use of radio waves, infrared and microwaves

**BIG IDEAS:**

- All electromagnetic waves travel in a vacuum with the speed of light. These waves transport energy and momentum from some sources to a receiver. Heinrich Hertz successfully generated and detected the radio-frequency electromagnetic waves predicted by Maxwell. Maxwell himself had recognized the infrared radiation discovered by William Herschel as electromagnetic waves. It is now known that the forms of electromagnetic waves do exist. Nowadays, electromagnetic waves like radio waves, microwaves and infrared have many useful applications.

**Types of Electromagnetic Radiation**



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## Activity 1: Fill-in the Table

Knowing the many practical applications of radio waves, microwaves and infrared, fill-in the table by the type of electromagnetic wave used in each application is **(a) radio wave;** **(b) microwave;** and **(c) infrared.** Write only the letter corresponding to each application.

| Types of EM Waves | Useful Applications  |
|-------------------|--|
| _____             | 1. long ranger communication                                       |
| _____             | 2. car central locking systems                                     |
| _____             | 3. electrical heaters and cookers                                  |
| _____             | 4. fixed and mobile communication systems                          |
| _____             | 5. home security systems   |
| _____             | 6. wireless LAN protocols such as Bluetooth                        |
| _____             | 7. radar for aircraft navigation systems                           |
| _____             | 8. autofocus camera  |
| _____             | 9. wireless fidelity   |
| _____             | 10. wireless computer networks                                     |
| _____             | 11. remote controls  |
| _____             | 12. air-traffic control  |
| _____             | 13. global positioning system                                      |
| _____             | 14. fiber optic cables   |
| _____             | 15. military applications like night vision and target acquisition |