**Mini Research Project – Wave-Particle Duality**

While studying wave-particle duality, we use the concepts of light behavior to better understand how many everyday technologies work. In this project, you will choose one of the “every day applications” that uses electromagnetic radiation and research what it is, what type of frequency, energy, and wavelengths used, why it is used, and the pros and cons for the use of electromagnetic radiation. Make sure to include specifics on how light is moving: wave behavior or particle behavior. You can display this information through the project in any of three “project choices.”

*Project Choice (choose one):*

Children’s Story (Informational with Fiction)

Brochure (Informational)

Newspaper Article (Informational with a Position)

*Every day Applications (choose one):*

Use of Radar in military operations

Medical imaging: x-ray, CAT scan, radiation therapy (choose one)

Solar panels, Solar lights, or Solar calculators (choose one)

Cell phone radiation, 5G technology, Wifi, or Bluetooth

Radiobroadcasting

TV remotes or Garage door remotes

Irradiating food

UV exposure

**Project Rubric**

|  |  |  |
| --- | --- | --- |
|  | Points Earned | Points Possible |
| Accurate Science Understanding |  | 10 |
| Grammar, Punctuation, etc. |  | 3 |
| Creativity |  | 5 |
| 2 Reliable resources |  | 2 |
| **Total Points** |  | **20** |