

Name _____

The Electromagnetic Spectrum: Unveiling the Colors of Light

Open-Ended Response Answer Key

1. Answers may vary but should include discussions of UV benefits, such as vitamin D production, and risks, like skin damage and the importance of protective measures. Research would likely involve controlled exposure studies on organisms and the monitoring of biological responses.
2. The discovery of X-rays revolutionized medicine by allowing non-invasive visualization of internal structures. Ethical considerations include patient consent, radiation safety, and balancing diagnostic benefits with potential risks.
3. Visible light in art impacts the way artists create color, depth, and emotion in their work. Artists use properties like color temperature, contrast, and complementary colors to evoke specific feelings. Color symbolism varies across cultures and can carry cultural or emotional significance.
4. Gamma rays have high energy and can damage living tissue. Researchers must use controlled radiation therapy for cancer treatment while minimizing harm to healthy cells. Safety measures include precise targeting and dose management.

