Short Performance Assessment: **HS-PS4-4**

Grade Level: **High School**

Adapted from SNAP[1]

Title	**Electroscope**		
Designed by		Course(s)	**High School**

Performance Expectation	**HS-PS4-4**: Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter. **Clarification Statement**: Emphasis is on the idea that photons associated with different frequencies of light have different energies, and the damage to living tissue from electromagnetic radiation depends on the energy of the radiation. Examples of published materials could include trade books, magazines, web resources, videos, and other passages that may reflect bias. **Assessment Boundary**: Assessment is limited to qualitative descriptions.

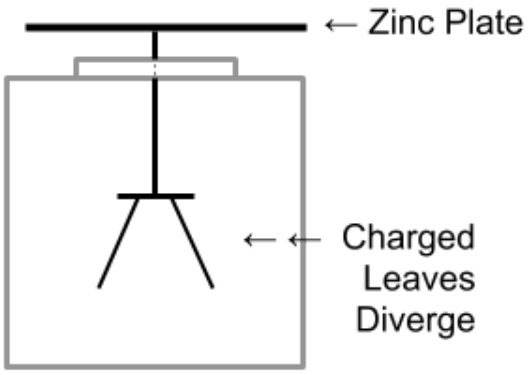
Science and Engineering Practice	**Obtaining, Evaluating, and Communicating Information** • Evaluate the validity and reliability of multiple claims that appear in scientific and technical texts or media reports, verifying the data when possible.
Disciplinary Core Ideas	**PS4.B: Electromagnetic Radiation** • When light or longer wavelength electromagnetic radiation is absorbed in matter, it is generally converted into thermal energy (heat). Shorter wavelength electromagnetic radiation (ultraviolet, X-rays, gamma rays) can ionize atoms and cause damage to living cells.
Crosscutting Concept	**Cause and Effect** • Cause and effect relationships can be suggested and predicted for complex natural and human-designed systems by examining what is known about smaller scale mechanisms within the system.

Student Performance	1. Obtaining information 2. Evaluating information

[1] The Short Performance Assessment (SPA) and the Assessment Rubric adapted from the Stanford NGSS Assessment Project http://snapgse.stanford.edu/

Name_____

Alice fixes a zinc plate to the tops of an electroscope. She then charges the scope so the leave diverge. Finally she shines various light sources on the zinc plate and observes the leaves.



Scope Charge	Light	Observation
+	fluorescent	No change
-	fluorescent	No change
+	UV	No change
-	UV	Converge
+	IR	
-	IR	

Noah claims that “Light that is outside the visible spectrum is electromagnetic, which caused the leaves to converge when the Ultraviolet (UV) light was shined on the neg electroscope.”

1. Evaluate the claim. Is Noah right or not?

2. Predict the Infrared (IR) results.

Assessment Rubric* - Question 1				
	Emerging	Developing	Approaching Proficiency	Excelling
Description of performance				
Sample student responses				

Assessment Rubric* - Question 2				
	Emerging	Developing	Approaching Proficiency	Excelling
Description of performance				
Sample student responses				

Insert additional Assessment Rubrics (if needed) here.