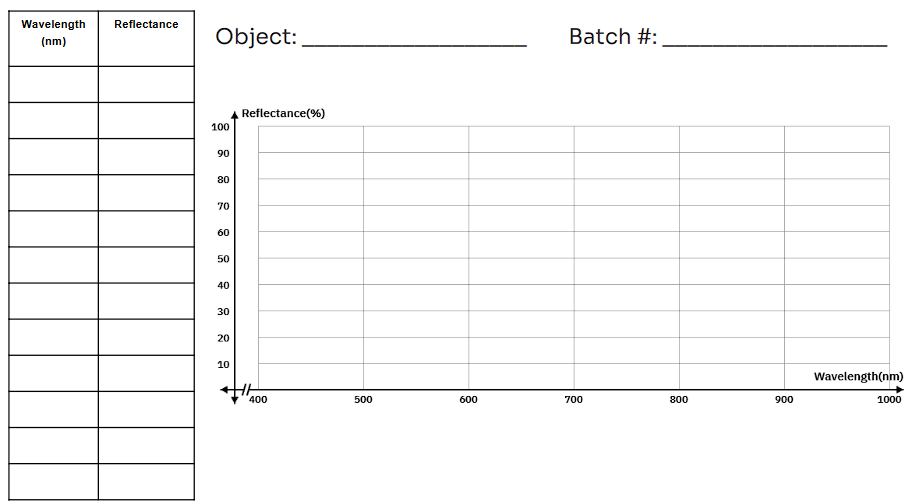
**SPECTROSCOPIC MYSTERY**

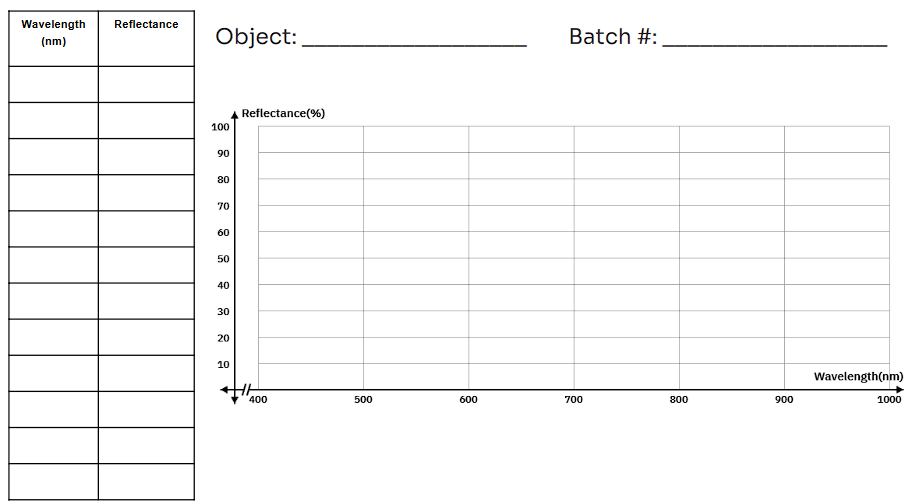
**Decoding Materials with the STELLA Spectrometer**

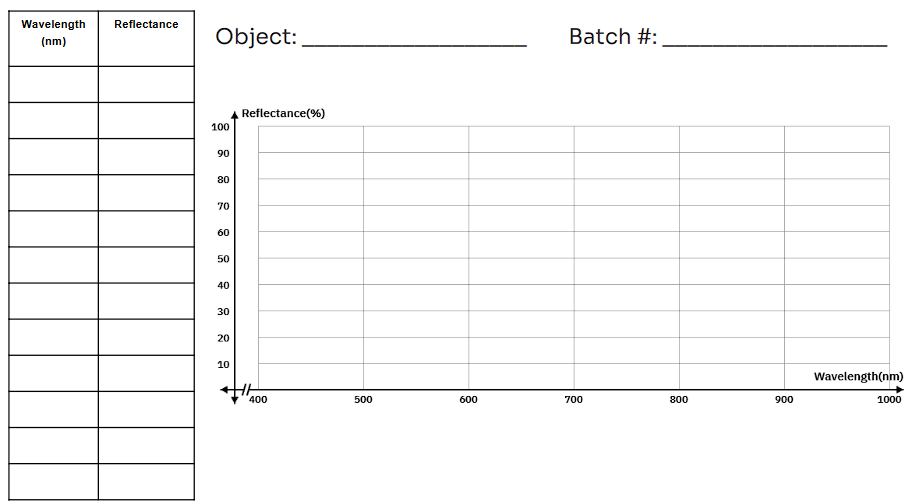
STELLA spectrometers measure light as irradiance (uW/cm2) which we then need to convert to reflectance using the following formulas:

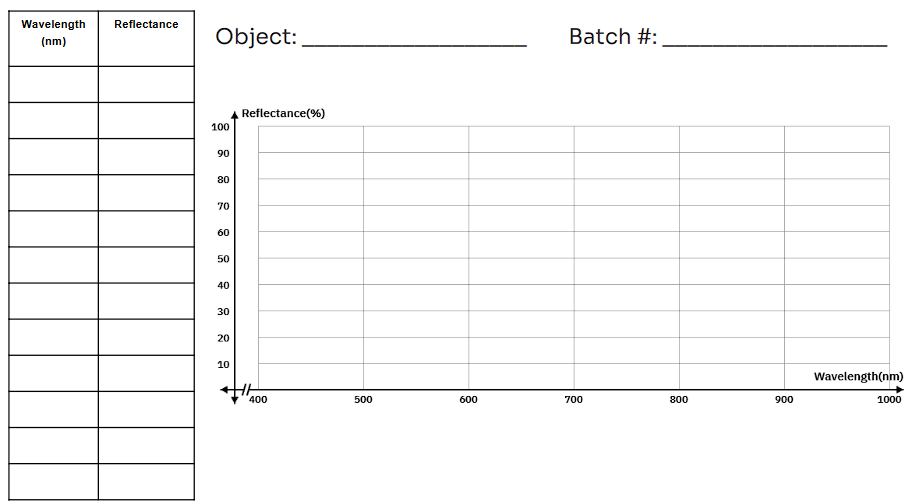
To save time, this calculation will be done for you when you upload your data from the SD card.

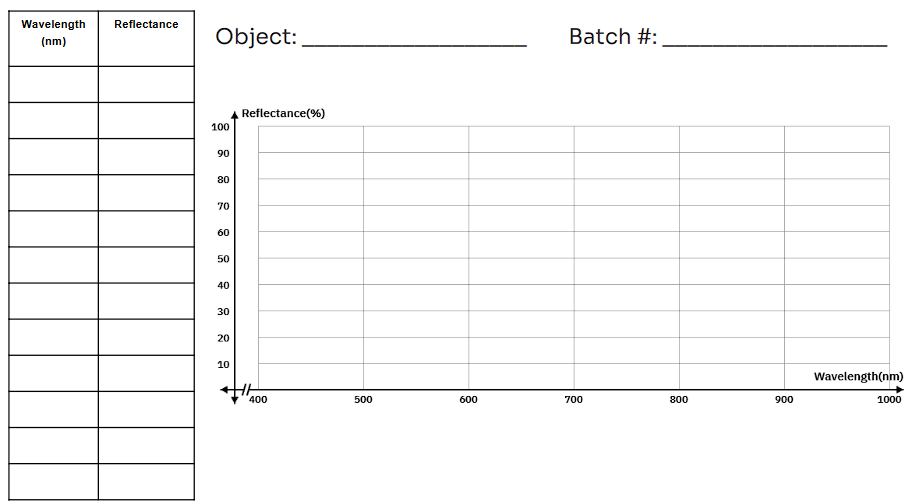
1.) Using the STELLA spectrometers take spectral readings for each object and graph the reflectance with respect to the wavelength. Make sure to take a calibration reading using the blank white sheet of paper both **BEFORE** and **AFTER** each material’s measurement. Remember to write down the batch number when measuring a material:

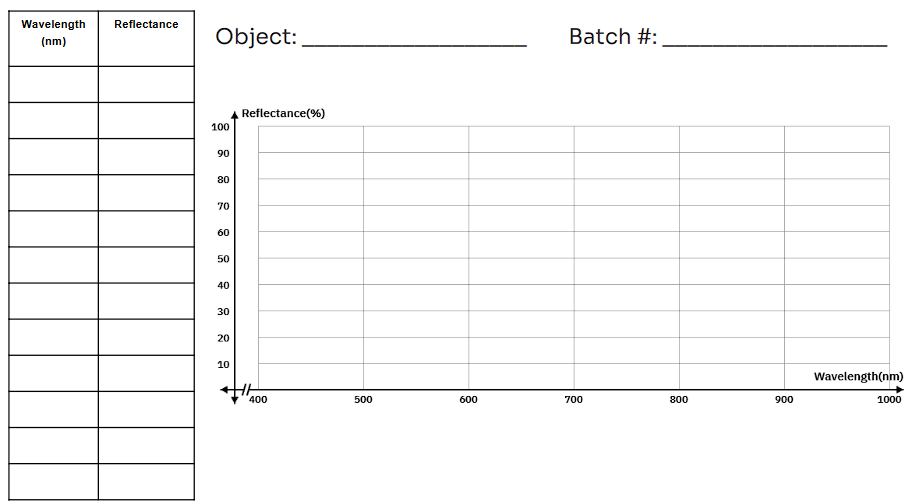


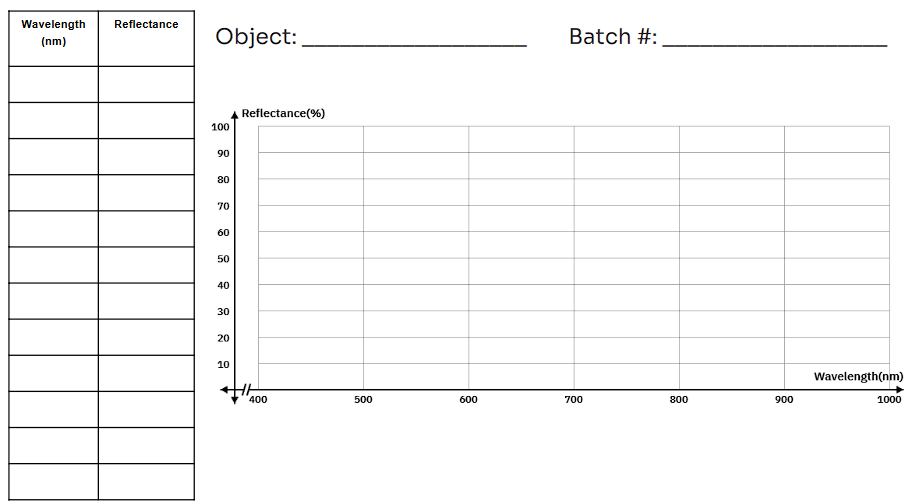












3.) Now that you have your own observations and data, use them to determine which material is which based

only on its spectral signature. Write down your guesses below:

**Material #1: Material #2:**

Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Material #3: Material #4:**

Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Material #5: Material #6:**

Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Material #7:**

Guess: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_