

Spectra Analysis

GLE 0607.6.1 Analyze information about the major components of the universe.

Supplies:

- 6 sets of laminated cards
 - Rainbow Spectrum
 - Absorption Spectra Helium
 - Absorption Spectra Hydrogen
 - Absorption Spectra Sodium
 - Absorption Spectra Neon
- Flash Drive with Spectra Power points
- Lesson notebook

This is a short activity (i.e. not a whole lab period) that lets students see how astronomers use a spectrograph. A spectrograph is an instrument that separates light into a frequency spectrum and records the signal using a camera. Students will have 4 different absorption spectra cards that they can layer over the full spectrum (rainbow card) to figure out what element(s) are being represented in the given spectrum. The Teacher will use the Power point presentation to bring up the different absorption spectra and introduce the topic to the students. Students will circle on their worksheet which element or elements they think are present in the spectrum. The point of this activity is to allow students to see how complicated it can get for astronomers to discover which elements are located on a planet or in a star. Teachers can tell the students that the lines given are only a few of the actual spectral lines for each element.

Spectra Worksheet

Name: _____

Next to the number, list what element is found in each spectra. The procedure and questions will be on the board and we will go over them together. You have four choices listed below for each question. Circle which elements can be found in the spectra. Use your cutouts to make that determination. You can select anywhere from one of the elements up to all four or anything in between.

1. **Hydrogen** Helium Neon Sodium

2. Hydrogen **Helium** Neon Sodium

3. Hydrogen Helium **Neon** Sodium

4. Hydrogen Helium Neon **Sodium**

5. **Hydrogen** **Helium** Neon Sodium

6. Hydrogen Helium **Neon** **Sodium**

7. Hydrogen **Helium** **Neon** Sodium

