

## Student Exploration: Star Spectra

**Vocabulary:** absorption spectrum, binary star, blueshift, Cepheid variable, emission spectrum, giant star, nebula, redshift, spectrum, star

**Prior Knowledge Questions** (Do these BEFORE using the Gizmo.)

1. What happens when light goes through a prism? Light bends and we can see a rainbow of colors.

This band of colors is called a **spectrum**.

2. A rainbow is an example of a spectrum. What is the sequence of colors in a rainbow?

Red, orange, yellow, green, blue, indigo, and violet.

### Gizmo Warm-up

The interior of a **star** produces a continuous spectrum of light, like a rainbow. Cooler gases in the outer layers of the star absorb certain wavelengths of light, causing dark lines to appear in the spectrum. The resulting **absorption spectrum** can tell astronomers a great deal about the star.

1. On the *Star Spectra* Gizmo, turn on **Show labels**. Select **star 1** to see its absorption spectrum.

How many lines do you see in the spectrum? **10**

2. Drag the **Hydrogen** spectrum next to the **Star spectrum** so that the edges line up. Do some of the lines on the two spectra match up? **yes**
3. Drag the **Helium** spectrum next to the **Star spectrum**. Do some lines match? **yes**
4. Try out the other available spectra. Do any others have lines that match? **no**
5. Which elements have contributed to the spectrum of **star 1**? **hydrogen and helium**

*Note: The elements in a star's spectrum do not necessarily reflect what the star is made of. The absorption spectrum is mostly determined by the surface temperature of the star.*



# Star Spectra Explore Learning

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## **Star Spectra Explore Learning:**

## Reviewing **Star Spectra Explore Learning**: Unlocking the Spellbinding Force of Linguistics

In a fast-paced world fueled by information and interconnectivity, the spellbinding force of linguistics has acquired newfound prominence. Its capacity to evoke emotions, stimulate contemplation, and stimulate metamorphosis is actually astonishing. Within the pages of "**Star Spectra Explore Learning**," an enthralling opus penned by a very acclaimed wordsmith, readers set about an immersive expedition to unravel the intricate significance of language and its indelible imprint on our lives. Throughout this assessment, we shall delve to the book is central motifs, appraise its distinctive narrative style, and gauge its overarching influence on the minds of its readers.

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























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