

A Study of the Stars: How Everything in Sight Came from the Stars

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This unit is intended for high school science teachers to use in a ninth-grade Physical Science course. Throughout this unit, students will investigate the life cycles of various stars to determine how the mass of a star impacts the elements formed, with an emphasis on hydrogen fusion and the process of nucleosynthesis. Supernovae will be discussed and used to explain the concept that all matter on Earth can be traced to elements created during these colossal explosions. Finally, students will discover how studying spectral lines and understanding absorption spectra of elements can indicate the composition of stars. Inquiry-based activities aligning with Next Generation Science Standards (NGSS) will be the driving force behind the unit, and students will be in charge of directing their own learning. Twenty-first century learning skills will be utilized in addition to literacy components that reinforce reading, writing, listening, and speaking skills.