Grade: 7th

Program Title: Star ID

Related Iowa Core Performance Expectations:

MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. [Clarification Statement: Examples of models can be physical, graphical, or conceptual.]

MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. [Clarification Statement: Emphasis for the model is on gravity as the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them. Examples of models can be physical (such as the analogy of distance along a football field or computer visualizations of elliptical orbits) or conceptual (such as mathematical proportions relative to the size of familiar objects such as students' school or state).] [Assessment Boundary: Assessment does not include Kepler's Laws of orbital motion or the apparent retrograde motion of the planets as viewed from Earth.]

Future Considerations: Blend this program with the unit storyline developed by the classroom teacher.

Program alignment with the Iowa Science Standards:

Disciplinary Core Ideas (DCIs)	**Investigative Question**	**Investigative Phenomena**	**Practices (SEPs) Students will:**	**Cross Cutting Concepts (CCCs) Students will identify:**
ESS1.A: The Universe and Its Stars • Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. • Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe.	How would our star chart be different if we were in FL (closer to the equator)? In Brazil (southern hemisphere)?	Showing how the Star Chart for that month is used. And how the star chart changes.	**Use and construct models** that represent ideas and explanations by using the star chart and what constellations are close to each other. **Engage in reasoning and argument based on evidence** when they use the star chart, and learn more on how it is formed.	**Patterns** of constellations in the sky. **Systems and systems models,** use the model of the star chart and how it is used with star lab. Identify **stability and change** of the night sky

Program components: The presenter will have students use the CCCs, the SEPs and the phenomena to figure out how to answer the investigative question and to grasp the disciplinary core ideas.

Star chart. Skyview app. Star Lab.

Extension activities: Constellation presentations that touch on Native American and Greek/Roman constellation stories.