**Standards and Goals**

* The student uses critical thinking and scientific problem solving skills to make informed decisions.
* The student knows how mathematical models, computer simulations, and exploration can be used to study the universe.
* The student knows the scientific theories of the evolution of the universe.
* The structure and composition of the universe can be learned from studying stars and galaxies and their evolution.

*Students will be able to...*

* Describe components of the universe including stars, nebulae and galaxies, and use models such as the Hertzsprung-Russell diagram for classification
* Describe characteristics of galaxies
* Research and describe the history of astronomy and contributions of scientists
* Interpret data concerning the formation of galaxies and our solar system

Students will know…

* How to read the HR diagram
* Influential astronomers in the past
* The life cycle of stars
* The different types of galaxies

*Students will understand….*

* The early history of astronomy
* How models are used to study the universe
* Early theories of astronomy
* How ancient astronomers studied the universe
* How galaxies are formed
* The composition of the early universe
* The life cycle and characteristics of stars in the universe

**Essential Questions:**

1. Why do you suppose it is important to include astronomy as part of Earth Science?
2. What is the life cycle of our own star?
3. What are the characteristics of different types of stars according to the HR diagram?
4. How does energy flow throughout our galaxy?
5. Why are other stars compared to the Sun?
6. How do astronomers classify information collected from billions of stars?
7. What patterns are evident when studying stars?

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**Self Assessment Activities:**

Student’s will self assess through warm ups which review prior knowledge and allow students to use strategies to come up with solutions. Students will also self assess through, research based projects, think pair share, cooperative learning activities and use of technology.

**Performance Tasks:**

What are the big assessments that will assess student learning? Ex. Test, projects, etc.

**Tests:**

Test 1: Introduction to Astronomy

**Major Projects:**

Famous astronomer research projects

**Other Evidence:**

* Weekly topic assessment quizzes
* Exit slips
* Daily Warm Ups
* Powerpoint notes check
* Identifying galaxies activity
* Note/Binder check