**Unit 2 – Learning Goals for Formation of the Universe**

|  |  |  |  |
| --- | --- | --- | --- |
| **Big Picture**: Students should understand the role of energy in the formation of the universe, stars, and the solar system, and explain the evidence supporting these events. | | | |
| **Content Goals** | | **Skills Goals** | |
| Students will be able to:   * Differentiate between a scientific law and a scientific theory * Summarize the Big Bang theory and describe the scientific evidence * Explain how elements in universe are formed * Describe the formation of galaxies and solar systems and describe the scientific evidence * Explain how fusion produces heat and electromagnetic radiation in stars * Explain how rates of contraction and expansion determine the behavior of a star * Describe similarities and differences between stages in the life cycle of a star | | Students will be able to:   * Make a time-scale for significatnt events in the history of the universe * Use factor-label method to convert from one unit of measure to another * Use information provided in charts and graphs to analyze patterns in data * Identify the topic, summarize the main idea, and identify the key supporting statements in a scientific article | |
| **Assessment**: How will mastery of content and skills be assessed?   * History of Universe Booklet will provide evidence of: * Ability to make a time scale * Basic knowledge of formation of universe, galaxies, solar systems, and earth * Article evaluation will show whether students can identify topic and summarize main idea * Quizzes and tests will show if students have mastered the content goals. | | | |
| **Content Vocabulary:**  Universe / cosmos  Big Bang Theory  Galaxy  Interstellar  Light year  Fusion  Gravity  Element  Planet | Nebula  Protostar  Main sequence star  Red giant / super giant  White dwarf  Black dwarf  Neutron star  Super nova  Black hole  Fission | | **Core Vocabulary:**  Theory  Law  Hypothesis  Rate  Estimate  Mass  Matter  Evidence  Expansion  Contraction |

