U. S. Curriculum Correlations by State

Pennsylvania

Physical Science, Chemistry and Physics (D. Astronomy)	Starry Night Lesson Plans *In order of relevance*
3.4.10. Grade 10 **D. Explain essential ideas about the composition and structure of the Universe.**	
1. Compare the basic structures of the Universe (e.g., galaxy types, nova, black holes, neutron stars).	H1 H2 H3 G1 G2
2. Describe the structure and life cycle of a star, using the Hertzsprung-Russell diagram.	G2 F1 F2
3. Describe the nuclear processes involved in energy production in a star.	F1
4. Explain the "red-shift" and Hubble's use of it to determine stellar distance and movement.	H3 H2
5. Compare absolute versus apparent star magnitude and their relation to stellar distance.	G1 G2
6. Explain the impact of the Copernican and Newtonian thinking on man's view of the Universe.	C2
7. Identify and analyze the findings of several space instruments in regard to the extent and composition of the Solar System and Universe.	C1 C3 D1-D3 I1-I2 H1
3.4.11. Grade 12 **D. Analyze the essential ideas about the composition and structure of the Universe.**	
1. Analyze the Big Bang Theory's use of gravitation and nuclear reaction to explain a possible origin of the Universe.	H1 H2 H3
2. Compare the use of visual, radio and x-ray telescopes to collect data regarding the structure and evolution of the Universe.	I1-I2 H1 F1 F2
3. Correlate the use of the special theory of relativity and the life of a star.	F1 G2