Danville Area School District
Course Overview and Scope and Sequence

Course Title: Astronomy
Content Area: Science
Grade Level: 8th
Date Developed: Fall 2023

COURSE OVERVIEW: The purpose of this course is to enable students to develop and apply knowledge of the universe and compare conditions, properties, and motions of objects in space. This course introduces students to the composition and structure of the universe. Astronomy is the scientific study of the contents of the entire Universe. The content of this course includes: Earth, Moon, and Sun, the Solar System, space exploration, and the Universe beyond our Solar System.
ANCHOR STANDARDS: 1. The Universe and It's Stars 2. Earth and The Solar System 3. Nature and Characteristics of Technology and Engineering 4. Applying, Maintaining, and Assessing Technological Products and Systems
KEY COURSE TEXT AND MATERIALS: Teacher Created Materials, Labs and Supplies
KEY ASSESSMENTS: Diagnostic: CDT, 8th Grade PSSA Formative: Labs and activities, simulations and model construction, Gizmo, bell ringers, exit tickets, CER and class discussions Summative: Projects, Unit Test

SCOPE AND SEQUENCE

Unit	PRIORITY STANDARDS	SUPPORTING STANDARDS	ASSESSMENT	MATERIALS	TIMEFRAME
Earth as a System	3.3.6-8.A 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. 3.3.6-8.H Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. 3.3.6-8.I Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climate	3.5.6-8.F Analyze examples of technologies that have changed the way people think, interact, live, and communicate. 3.5.6-8.BB Demonstrate how knowledge gained from other content areas affects the development of technological products and systems. 3.2.6-8.J Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	CER, Response Sheet, Labs,Projects, Quizzes and Tests	Teacher created resources. In addition to lab/project supplies, materials are posted in Google Classroom	6 Weeks
Moon Study	3.3.6-8.B Develop	3.5.6-8.F Analyze	CER, Response	Teacher created	3 Weeks

	and use a model to describe the role of gravity in the motion within galaxies and the solar system.	examples of technologies that have changed the way people think, interact, live, and communicate. 3.2.6-8.J Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	Sheet, Labs,Projects, Quizzes and Tests	resources. In addition to lab/project supplies, materials are posted in Google Classroom	
Solar System	3.3.6-8.C Analyze and interpret data to determine scale properties of objects in the solar system. 3.5.6-8.FF Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the	3.5.6-8.F Analyze examples of technologies that have changed the way people think, interact, live, and communicate. 3.5.6-8.BB Demonstrate how knowledge gained from other content areas affects the development of technological products and systems.	CER, Response Sheet, Labs,Projects, Quizzes and Tests	Teacher created resources. In addition to lab/project supplies, materials are posted in Google Classroom	3 Weeks

	environment in which it is used.	3.2.6-8.J Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.			
Space Exploration	3.5.6-8.CC Consider historical factors that have contributed to the development of technologies and human progress. 3.5.6-8.DD Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements. 3.5.6-8.G Analyze how an invention or innovation was influenced by the context and	3.5.6-8.F Analyze examples of technologies that have changed the way people think, interact, live, and communicate. 3.5.6-8.BB Demonstrate how knowledge gained from other content areas affects the development of technological products and systems.	CER, Response Sheet, Labs,Projects, Quizzes and Tests	Teacher created resources. In addition to lab/project supplies, materials are posted in Google Classroom	3 Weeks

	circumstances in which it is developed.				
Orbits and New Worlds	3.5.6-8.FF Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.	3.5.6-8.F Analyze examples of technologies that have changed the way people think, interact, live, and communicate. 3.5.6-8.BB Demonstrate how knowledge gained from other content areas affects the development of technological products and systems. 3.2.6-8.Q Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.	CER, Response Sheet, Labs,Projects, Quizzes and Tests	Teacher created resources. In addition to lab/project supplies, materials are posted in Google Classroom	3 Weeks