Brunswick School Department
Science
Grade 8: Astronomy

Adopted:

Unit Overview

Our solar system orbits a G type star in the Milky Way Galaxy. It is one of billions of galaxies and follows specific laws about mass and gravity. Mass and gravity determine the interactions between objects in the solar system, galaxy, and in other galaxies in the universe. Scale properties are universally used to determine relationships in our solar system and in our galaxy and other galaxies.

Essential Understandings

- Gravity plays a fundamental role in galaxy and solar formation and, also, life span and stars.
- Lighter elements form heavier elements inside stars.
- Stars have "life" cycles.
- When heavier elements are formed, some mass is converted to energy.
- Scale is necessary for the study of astronomy.
- Scientists use various tools to learn about and explore objects in outer space.
- Objects in space rotate and revolve around other objects based on mass and gravitational forces.

Priority Standards and Performance Indicators

(as based on Next Generation Science Standards)

P.S.S.4 Understand cause and effect.
d. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

BJHS P. S. 1 Recognize how scale, proportion and quantity affect a system's structure.
b. Analyze and interpret data to determine scale properties of objects in the solar system.

Next Generation Science Standards Addressed in this Unit

- 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.
- MS-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

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Examples of Formative / Summative Assessments

- How Do Planets Orbit the Sun? Probe
- Design Your Own Solar System
- Labs
- Classwork
- Teacher Observations

Sample Texts and Materials/Resources

Astrobiology Text (required)