

Astronomy Unit Organizer

6th Grade Crisafulli /Huey / Jordan

Previous Unit

Science Processes

Next Unit

Energy

Integrated Units

Energy

Core Knowledge Content (Knowledge)

♦ Gravity, attractive force between objects
• Newton's law
• Keeping planets in orbit
♦ Stars
• Our sun
• Kinds of stars: giants, dwarfs, pulsars
• Supernovas and black holes
• Apparent movement of stars caused by the earth's rotation
• Constellations
• Astronomical distance measured in light years
Galaxies
♦ The Milky Way
♦ Andromeda Galaxy
♦ Quasars

State and District Guidelines (Patterns)

6.4.I know that the path of a planet around the sun is due to the gravitational attraction between the sun and the planet
6.4.J know that the sun, an average star, is the central and largest body in the solar system and is comprised primarily of hydrogen and helium
6.4.G know that the Solar System forms part of the Milky Way Galaxy which is one of many galaxies that comprise the Universe

Standards for Achievement and Performance (Mental Mapping)

Students will -

Identify possible reasons why ancient people and modern astronomers study objects in space.

Describe the importance of the Sun to the development of life on Earth.

Describe the source of the Sun's Energy.
Draw a diagram of the Sun and label its layers.
Identify and measure wavelengths.
Demonstrate how shorter wavelengths carry more energy.
Identify ways we experience different wavelengths of the electromagnetic spectrum every day.
Observe a visible light spectrum produced by a prism
Describe how the color of a star can reveal its temperature and brightness.
Illustrate and label 5 stages in the formation of a star.
Interpret data about the magnitude and temperature of stars using the Hertzsprung-Russell Diagram.
Identify and describe stages in the death of a yellow dwarf star like our Sun.
Describe a supernova.
Describe a magnetar (neutron star).
Describe the formation of a black hole.
Demonstrate escape velocity.
Interpret data on planets from a table.
Demonstrate the combination of forces acting on orbiting celestial bodies.
Describe how gravity shapes the universe.
Describe aspects of microgravity experiments.
Read a star map and identify some constellations.
Demonstrate how the mass of celestial bodies might distort space-time.

Types of Assessments (Creativity)

Students will take a variety of quizzes over the content covered.
Students will demonstrate their understanding of the content through experiments and will record findings in an experiment log.
Students will review the content covered in a game of Jeopardy
Students will take a final exam