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| **Chapters** | | **Earth Science Standards** | **Vocabulary** | **Pacing** |
| **Unit 1: Exploring the Sky** | Chapter1: Here and Now  Chapter 2: A Users Guide to the Sky  Chapter 3: Cycles of the Sun and Moon | E5.p1A Describe the motions of various celestial bodies and some effects of those motions.  E5.p1B Explain the primary cause of seasons.  E5.p1C Explain how a light year can be used as a distance unit.  E5.p1D Describe the position and motion of our solar system in our  galaxy.  E5.1A Describe the position and motion of our solar system in our galaxy and the overall scale, structure, and age of the universe.  E5.1b Describe how the Big Bang theory accounts for the formation of the universe. | Field of View  Scientific Notation  Planet  Star  Solar System  Astronomical Unit  Light Year  Milky Way  Milky Way Galaxy  Galaxies  Spiral Arms  Scientific Method  Constellations  Asterisms  Magnitude Scale  Apparent Visual Magnitude  Flux  Celestial Sphere  Scientific Method  Zenith  Nadir  Circumpolar Constellations  Precession  Rotation  Revolution  Ecliptic  Vernal Equinox  Autumnal Equinox  Winter Solstice  Summer Solstice  Perihelion  Aphelion  Evening Star  Morning Star  Zodiac  Horoscope  Pseudoscience  Synodic Period  Sidereal Period  Eclipse  Penumbra  Umbra  Photosphere  Corona  Prominence  Apogee | 30 Days |
| **Assessments: Chapter Test, Quizzes, Worksheets, Labs, Constellation Poster Project, Guided Viewing, Guided Reading** |
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| **Chapters** | | **Earth Science Standards** | **Vocabulary** | **Pacing** |
| **Unit 1: Exploring the Sky** | Chapter 4: The Origin of Modern Astronomy  Chapter 5: Light and Telescopes  Chapter 7: The Sun | E5.1c Explain how observations of the cosmic microwave background have helped determine the age of the universe.  E5.1d Differentiate between the cosmological and Doppler red shift.  E5.2A Identify patterns in solar activities (sunspot cycle, solar flares, solar wind).  E5.2B Relate events on the Sun to phenomena such as auroras, disruption of radio and satellite communications, and power grid disturbances.  E5.2C Describe how nuclear fusion produces energy in the Sun.  E5.2D Describe how nuclear fusion and other processes in stars have led to the formation of all the other chemical elements. | Uniform Circular Motion  Geocentric Universe  Parallax  Epicycles  Retrograde Motion  \Heliocentric Universe  Ellipse  Semi major Axis  Eccentricity  Hypothesis  Theory  Natural Law  Closed Orbit  Open Orbit  Escape Velocity  Spring Tide  Neap Tide  Electromagnetic Radiation  Wavelength  Nanometers  Angstroms  Frequency  Photon  Spectrum  UV Light  Gamma Rays  Microwaves  Radio Waves  Refracting Telescope  Reflecting Telescopes  Primary Mirror  Chromatic Aberration  LGP  Resolving Power  Light Pollution  Equatorial Mount  Active Optics  Spectrographs  Interferometer  Granulation  Coronagraph  Solar Wind  Sunspots  Prominences  Coronal Hole  Filaments  Auroras  Nuclear Fission  Nuclear Fusion  Sun Layers | 45 Days |
| **Assessments: Chapter Test, Quizzes, Worksheets, Labs, Astronomical Sites/People Poster Project, Guided Viewing, Guided Reading** |
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| **Chapter** | | **Earth Science Standards** | **Vocabulary** | **Pacing** |
| **Unit 2: The Solar System** | Chapter 8: The Origin of the Solar System  Chapter 9: Earth and Moon, Bases for Comparative Planetology  Chapter 10: Mercury, Venus and Mars  Chapter 11: The Outer Solar System  Chapter 12: Meteorites, Asteroids and Comets | E5.p1D Describe the position and motion of our solar system in our  galaxy.  E5.1A Describe the position and motion of our solar system in our galaxy and the overall scale, structure, and age of the universe. | Evolutionary Hypothesis  Solar Nebular Theory  Terrestrial Planets  Jovian Planets  Kuiper Belt  Meteoroids  Meteors  Meteorites  Ice Line  Accretion  Planetesimals  Gravitational Collapse  Heavy Bombardment  Extrasolar Planets  P and S Waves  Plate Tectonics  Primary/Secondary Atmosphere  Ejecta  Terminator  Maria  Mare  Shield Volcanoes  Outflow Channels  Oblateness  Satellites  Magnetosphere  Tidal Heating  Roche Limit  Asteroid  Comet  Near Earth Objects  Asteroid Types C,S,M  Coma  Gas Tail  Dust Tail  Oort Cloud | 45 Days |
| **Assessments: Chapter Test, Quizzes, Worksheets, Labs, Astronomical Objects Poster Project, Guided Viewing, Guided Reading** |
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| **Chapter** | | **Earth Science Standards** | **Vocabulary** | **Pacing** |
| **Unit 3: The Stars** | Chapter 13: The Family of Stars  Chapter 14: The Formation and Structure of Stars  Chapter 15: The Death of Stars  Chapter 16: Neutron Stars as Black Holes | E5.2e Explain how the Hertzsprung-Russell (H-R) diagram can be used to deduce other parameters (distance).  E5.2f Explain how you can infer the temperature, life span, and mass of a star from its color. Use the H-R diagram to explain the life cycles of stars.  E5.2g Explain how the balance between fusion and gravity controls the evolution of a star (equilibrium).  E5.2h Compare the evolution paths of low-, moderate-, and high-mass  stars using the H-R diagram. | Stellar Parallax  Parsec  Magnitude  Spectral Class (Type)  Spectral Sequence  Brown Dwarfs  H-R Diagram  Main Sequence  Giant Star  Supergiant Star  Red Dwarf  White Dwarf  Luminosity  Interstellar Medium Nebula  Birth Line  Young Stellar Objects  Radiation  CNO Cycle  Zero Age Main Sequence  Globular Clusters  Lagrange Point  Type I & II Supernovas  Neutron Star  Pulsars  X-Ray Burst  Black Hole  Event Horizon | 42 Days |
| **Assessments: Chapter Test, Quizzes, Worksheets, Labs, Star Project, Guided Viewing, Guided Reading** |
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| **Chapter** | | **Earth Science Standards** | **Vocabulary** | **Pacing** |
| **Unit 4: The Universe and Galaxies** | Chapter 17: The Universe and Galaxies  Chapter 18: Galaxies; Normal and Active  Chapter 19: Modern Cosmology | E5.1A Describe the position and motion of our solar system in our galaxy and the overall scale, structure, and age of the universe. | Central Bulge  Galactic Corona  Dark Matter  Spiral Tracers  Population I & II Stars Elliptical, Spiral, Irregular Galaxies  Hubble’s Law  Cluster Galaxies  Ring Galaxies  Starburst Galaxies  Radio Galaxies  Seyfert Galaxies  Quasars  Cosmology  Olbers’s Paradox  Expanding Universe  Cosmic Microwave Background  Antimatter  Closed, Open & Flat Universe  Dark Energy  Big Rip  Super clusters  Filaments | 28 Days |
| **Assessments: Chapter Test, Quizzes, Worksheets, Labs, Star Project, Guided Viewing, Guided Reading** |