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| **Chapters** | **Earth Science Standards** | **Vocabulary** | **Pacing** |
| **Unit 1: Exploring the Sky** | Chapter1: Here and NowChapter 2: A Users Guide to the SkyChapter 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 ViewScientific NotationPlanetStarSolar SystemAstronomical UnitLight YearMilky WayMilky Way GalaxyGalaxiesSpiral ArmsScientific MethodConstellationsAsterismsMagnitude ScaleApparent Visual MagnitudeFluxCelestial SphereScientific MethodZenithNadirCircumpolar ConstellationsPrecessionRotationRevolutionEclipticVernal EquinoxAutumnal EquinoxWinter SolsticeSummer SolsticePerihelionAphelionEvening StarMorning StarZodiacHoroscopePseudoscienceSynodic PeriodSidereal PeriodEclipsePenumbraUmbraPhotosphereCoronaProminenceApogee | 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 AstronomyChapter 5: Light and TelescopesChapter 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 MotionGeocentric UniverseParallaxEpicyclesRetrograde Motion\Heliocentric UniverseEllipseSemi major AxisEccentricityHypothesisTheoryNatural LawClosed OrbitOpen OrbitEscape VelocitySpring TideNeap TideElectromagnetic RadiationWavelengthNanometersAngstromsFrequencyPhotonSpectrumUV LightGamma RaysMicrowavesRadio WavesRefracting TelescopeReflecting TelescopesPrimary MirrorChromatic AberrationLGPResolving PowerLight PollutionEquatorial MountActive OpticsSpectrographsInterferometerGranulationCoronagraphSolar WindSunspotsProminencesCoronal HoleFilamentsAurorasNuclear FissionNuclear FusionSun 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 SystemChapter 9: Earth and Moon, Bases for Comparative PlanetologyChapter 10: Mercury, Venus and MarsChapter 11: The Outer Solar SystemChapter 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 HypothesisSolar Nebular TheoryTerrestrial PlanetsJovian PlanetsKuiper BeltMeteoroidsMeteorsMeteoritesIce LineAccretionPlanetesimalsGravitational CollapseHeavy BombardmentExtrasolar PlanetsP and S WavesPlate TectonicsPrimary/Secondary AtmosphereEjectaTerminatorMariaMareShield VolcanoesOutflow ChannelsOblatenessSatellitesMagnetosphereTidal HeatingRoche LimitAsteroidCometNear Earth ObjectsAsteroid Types C,S,MComaGas TailDust TailOort 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 StarsChapter 14: The Formation and Structure of StarsChapter 15: The Death of StarsChapter 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-massstars using the H-R diagram. | Stellar ParallaxParsecMagnitudeSpectral Class (Type)Spectral SequenceBrown DwarfsH-R DiagramMain SequenceGiant StarSupergiant StarRed DwarfWhite DwarfLuminosity Interstellar MediumNebulaBirth LineYoung Stellar ObjectsRadiationCNO CycleZero Age Main SequenceGlobular ClustersLagrange PointType I & II SupernovasNeutron StarPulsarsX-Ray BurstBlack HoleEvent 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 GalaxiesChapter 18: Galaxies; Normal and ActiveChapter 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 BulgeGalactic CoronaDark MatterSpiral TracersPopulation I & II StarsElliptical, Spiral, Irregular GalaxiesHubble’s LawCluster GalaxiesRing GalaxiesStarburst GalaxiesRadio GalaxiesSeyfert GalaxiesQuasarsCosmologyOlbers’s ParadoxExpanding UniverseCosmic Microwave BackgroundAntimatterClosed, Open & Flat UniverseDark EnergyBig RipSuper clustersFilaments | 28 Days |
| **Assessments: Chapter Test, Quizzes, Worksheets, Labs, Star Project, Guided Viewing, Guided Reading** |