Bishop Heber High School

Subject	Year	Term
Astronomy	10	2

Topic

Chapters 8-16: Stars, Starlight, Galaxies, The Universe

Content (Intent)

Prior Learning (Topic) **Modules 1-7 of Astronomy GCSE**

Planetary Motion and Gravity - 8.1. Orbits and Kepler's first and second laws, 8.2. Kepler's third law & 8.3. Gravitation
Solar Astronomy - 10.1. Observing the Sun, 10.2. The Sun's interior, 10.3. The Sun's atmosphere, 10.4. The solar wind
The Earth, Moon, Sun System - 3.1. Eclipses, 3.2. Tides and precession, 3.3. The Earth, Sun and Moon, 3.4. Diameters and distances
Time and The Earth, Moon, Sun Cycles - 4.1. Sidereal and synodic time, 4.2. Lunar phases, 4.3. The Equation of Time, 4.4. Sundials and shadow sticks & 4.5. Longitude and time zones
Formation of Planetary Systems - 12.1. Interactions, 12.2. Formation of planets and moons, 12.3. Exoplanets & 12.4. Extra-terrestrial life
Exploring Starlight - 13.1. Magnitudes, 13.2. Spectroscopy and the H-R diagram, 13.3. Stellar distances, 13.4. Variable stars, 13.5. Radio telescopes, 13.6. Observing in other wavelength regions
Stellar Evolution - 14.1. Nebulae and Clusters, 14.2. Evolution of solar-mass stars, 14.3. Evolution of massive stars & 14.4. Evolution on the H-R diagram
Our Place in the Galaxy - 15.1. The Milky Way, 15.2. Groupings of galaxies, 15.3. Classification of galaxies, 15.4. Active galaxies
Cosmology - 16.1. Red-Shift, 16.2. Hubble's law, 16.3. The Big Bang & 16.4. Dark matter and dark energy

Future Learning (Topic) **Astrophysics (A-level)**

What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)
Knowledge Kepler's 3 Laws of Astronomy Structure of the Sun Tidal Forces Sidereal and Synodic Time Roche Limit and Lagrangian Points Absolute and Apparent Magnitude Star Lifecycles Big Bang Theory	**Mock Exams** – December and March 45-minute assessments to confirm understanding of knowledge. December will happen in lesson, March will take place as part of the formal mock timetable. **Practice Exam Questions** - using the Pearson online system to use prior exam questions at the start of each lunchtime session.
Maths Skills – Angles, Longitude, Latitude, Proportionalities, Kepler's 3rd Law, Magnification, Equation of Time, Stellar Distances **Practical Skills** – Using telescopes, Making astronomical observations, sundials, shadow sticks, pinhole projection	Interleaving Topic – Topics will be interleaved throughout, the scheme naturally recalls knowledge as the learners depth of Astronomy both broadens and strengthens.

How can parents help at home?

Support with unaided/aided observations
Textbooks
BBC Sky at Night website
Show an interest at looking up at the night sky and asking questions

Helpful further reading/discussion (including Reading and Vocabulary Lists)

Reading
BBC Sky at Night
GCSE Astronomy (9-1) by Nigel Marshall 5th Edition
Stellarium App
Stargazing by Royal Observatory Greenwich
Night Sky Almanac (yearly releases)

Vocabulary Lists

Magnification	Solar
Mean Solar Time	Supergiant
Parallax Angle	Tidal
Redshift	Time Zones
Sidereal	Year