UNIT 3: The Study of the Universe

Chapter 7: The Night Sky

7.1: Ancient Astronomy

- Calendar
- Early Astronomers
- Early Clocks
- Inferring Earth's Spherical Shape
- Earth's Curved Shadow

7.2: The Constellations

- Constellation
- Patterns in the Night Sky
- Light-year
- Apparent Magnitude
- Names of Constellation and Big Dipper
- Viewing Different Constellations
- Latitude

7.3: Movements of Earth and the Moon

- Earth's Motions
- Why do we experience seasons
- Tides
- Ellipse and Eclipse
- phases of the Moon
- lunar and solar eclipse
- gravitational force

7.4: Meet Your Solar System

- The Planets
- Solar System
- Retrograde motion
- Astronomical unit and orbital radius
- Comets and Asteroids

Chapter 8: Exploring Our Stellar Neighbourhood

8.1: Exploring Space

- Electromagnetic radiation
- Refracting telescope
- Reflecting telescope
- Satellite
- Planetary orbiters and landers
    - Landers and satellites

8.2: Exploring the Sun

- Solar nebula theory
- Star
- Nebula

- Protostar
- Nuclear fusion
- Photosphere
- Sunspot
- Solar wind
- A growing sun, features of the sun, the importance of the sun

8.3: Exploring other stars

- Luminosity
- Absolute magnitude
- Spectroscope
- Spectral lines
- Super nova
- How stars evolve
- Black holes

Chapter 9: The Mysterious Universe

9.1: Galaxies

- Discovery of the galaxies
- Milky way
- Galaxy
- Star cluster
- Open cluster
- Globular cluster
- Local group
- Supercluster

9.2: The Universe

- Edwin Hubble
- The Doppler Effect
- Redshift and Blueshift
- The Big Bang Theory
- The James Webb Space Telescope
- Dark Matter and Dark Energy (9.3)

Review Exercises:

- Chapter 7 Review: pg.312 – 313 #1-21
- Chapter 8 Review: pg.356 # 1- 18
- Chapter 9 Review: pg.386 – 387 #1 – 19

Unit Review: pg. 392-393 #1-33 (complete all questions that apply to concepts mentioned above)