

1 ☐ **Unit 2****Astronomy**

Test:

2 ☐ **What is Astronomy?**

The study of celestial objects as well as the physics, chemistry, geology, etc. of these objects

3 ☐ **Earth is an Oblate Spheroid**

It bulges in the middle because it is spinning

5 ☐ **Our Cosmic Address**

- Earth
- Solar System
- Milky Way Galaxy
- Local Group
- Virgo Supercluster
- Observable Universe

6 ☐ **Before we could travel into space, or put up satellites, how did we know Earth was round(ish)?**

- Ships disappeared over the horizon
- Curved shadow across the moon

7 ☐ **How do we observe the Universe?**8 ☐ **1. We use our eyes**

- Heliocentric vs Geocentric model of the Universe (solar system)
- Apparent daily motion
- Plato, Aristotle, & Ptolemy (Geocentric)
- Copernicus & Galileo (Heliocentric), supported by the works of Kepler & Newton

11 ☐ **2. Telescopes (Electromagnetic Spectrum)**

- X-Ray
- Gamma Ray
- Radio
- Visual
 - Reflecting
 - Refracting

12 ☐ **3. Unmanned Missions**

Orbiters, Satellites, Probes

15 ☐ **3. Manned Missions**

Shuttles, ISS, Apollo Missions, etc.

16 ☐ **Electromagnetic Spectrum**

The range of frequencies or wavelengths over which electromagnetic radiation extends.

- Helps us understand stars by evaluating:
 - Composition

- Temperature
- Size & Mass
- Motion (Doppler Effect)

19 ☐ **Hubble's Law**

- Edwin Hubble found that all galaxies (except the few closest to us) present a red shift in their spectra
- The *greater* the shift, the *faster* the motion
 - Furthest galaxies show the greatest shift (are moving the fastest)!

21 ☐ **Cosmic Background Radiation**

- Low levels are distributed evenly throughout the Universe provide evidence of the Big Bang Theory
- Detected by radio telescopes
- Originated shortly *after* the Big Bang

22 ☐

Galaxies

23 ☐ **Gravity**

Newton's Law of Gravitation: Two bodies are attracted to each other by a gravitational force, directly proportional to their masses, and inversely proportional to their distance from each other

- To increase the gravitational pull you need to: increase the mass of one or both, *OR* decrease the distance between objects

25 ☐ **Types of Galaxies**

Galaxies shapes are a result of gravity

- Irregular galaxies are young
- Spiral galaxies are middle-aged
- Elliptical galaxies are old