TAG - Astronomy Learning Targets

Use the table below to keep track of your learning of each of the sub-targets. Place a check mark in the appropriate column. If you do not place a check mark in the "M' column, you should determine what the necessary next step should be to "master" that target (re-read the book/class notes, see the teacher, go to the Point, etc.). ALL sub-targets should have an "X" in the "M" column PRIOR to you taking the quiz/test!

M - Indicates that you have "**m**astered" the learning target.

P - Indicates that you have "**p**artially **m**astered" the learning target, but need to PRACTICE to work toward complete mastery.

NY - Indicates "**n**ot **y**et." You have not yet addressed the learning target.

You can use the notes section below to write down questions you have, or ideas to help you remember the concepts above.

General Topics: Electromagnetic Waves, Mechanical Waves, Doppler Effect, Moon Phases, Eclipses, Star Cycle, Origin of the Universe, Seasons, Tides and Galaxy Classification

M	P	NY	Learning Sub-Targets
			1. I can provide examples and differentiate between the properties of mechanical and electromagnetic waves. (8c)
			2. I can explain the difference between a transverse and a compressional wave and relate these forms to mechanical and/or electromagnetic waves. I understand how different mediums affect the speed of waves.
			3. I can diagram and label a transverse and compressional wave (rarefraction, compression, wavelength, crest, trough, amplitude)
			4. I can explain the term frequency relative to waves and interpret how amplitude affects the energy level. I understand the relationship between velocity, frequency and wavelength using $V = f\lambda$
			5. I understand what a harmonic wave is and how to use **n th Harmonic:** $L = \frac{n}{2}\lambda$ to calculate frequency, period, wave length and wave speed.
			6. I can identify phases of the moon. I can clearly explain the difference between a lunar and solar eclipse. I can diagram or interpret diagrams that show the relative positions of the Earth, Moon and Sun and predict the next phase of the moon for all seasons on Earth. (7b)
			7. I can compare / contrast light & sound waves relative to the Doppler Effect.
			8. I understand and can explain the life cycle of a star and know the classification of the Sun as a medium sized star. I understand the relationship between temperature, color and size (Hertsprung Russell diagram) (8a, 8b)
			9. I understand the concept of a light year and can explain how this is used to calculate distance in space. (8c, 8d)
			10. I can explain different historical scientific theories of the origin of the universe. I know what a spectroscope is and can differentiate between emission and absorption spectra (8e, 8.8c)
			11. Students can explain how the position of Earth, Moon and Sun impact day vs night, seasons and tides on Earth. (7a,7c)
			12. I can describe the three different shapes of Galaxies and understand the Milkyway (our galaxy) is a spiral galaxy. . Understand relationship between galaxies, universe, solar systems, stars and planets (8b)

Essential Questions:

How are distances measured in space?
Why are there different seasons on Earth?
How do stars differ?
How does energy differ along the Electromagnetic Spectrum?
What different theories exist about the origin of the universe?
What objects make up the universe?
What is the relationship between the Earth, Moon and Sun?

Notes: