

Name: _____ Date: _____

Stellar Cartography: Mapping Cosmic Structures for 9th Graders

Analyze the distribution of dark matter and galactic morphology across 10 critical thinking questions focusing on the Large Scale Structure of the cosmos.

1. Which component acts as the invisible 'scaffolding' of the universe, providing the gravitational pull necessary for galaxies to cluster along filaments?

- A. Interstellar dust
- B. Dark matter
- C. Supernova remnants
- D. Solar wind

2. Edwin Hubble's observations of the 'Redshift' in distant light spectra confirmed that the universe is currently static and unchanging.

- A. True
- B. False

3. The Andromeda Galaxy is currently on a collision course with our Milky Way; this type of galaxy interaction is known as a galactic _____.

- A. Evaporation
- B. Merger
- C. Tidal wave
- D. Nebula

4. Which of the following galaxy types is characterized by an older population of stars and a lack of active star-forming gas and dust?

- A. Lenticular galaxies
- B. Barred spiral galaxies
- C. Elliptical galaxies
- D. Protogalaxies

5. A Light Year is a measurement of time, representing the duration it takes for a star to complete its life cycle.

- A. True
- B. False

6. What is the primary force responsible for pulling gas and dust together to initiate the birth of the very first galaxies?

- A. Magnetism
- B. Gravity
- C. Centrifugal force

Name: _____ Date: _____

D. Radiation pressure

7. Dark _____ is the mysterious form of energy that astronomers believe is causing the expansion of the universe to accelerate.

- A. Matter
- B. Force
- C. Energy
- D. Plasma

8. The Sombrero Galaxy (M104) is an example of an Irregular galaxy because it lacks a clear nucleus.

- A. True
- B. False

9. What do astronomers call the vast, empty spaces in the cosmic web that contain very few, if any, galaxies?

- A. Black holes
- B. Superclusters
- C. Voids
- D. Nebulae

10. The Milky Way is classified specifically as a _____ spiral galaxy because of the straight line of stars and gas cutting through its center.

- A. Lenticular
- B. Barred
- C. Flocculent
- D. Elliptical