

Name _____

Galaxy Formation and Types: A Cosmic Kaleidoscope

Open-Ended Response Answer Key

1. When studying distant irregular galaxies, challenges may include limited data due to their chaotic structures, difficulty in determining their exact shape, and the need for specialized observation techniques to understand their properties fully.
2. Studying galaxies is essential because they serve as cosmic laboratories, providing insights into the history of our universe, the nature of dark matter and dark energy, and the life cycle of stars. Understanding galaxies helps us piece together the story of the cosmos and its evolution.
3. Spiral galaxies have spiral arms, contain young stars, and exhibit ongoing star formation, while elliptical galaxies lack spiral arms, are often oval or round, and contain older stars with less ongoing star formation.
4. During a collision between two galaxies, gravitational interactions would distort their shapes, and stars and gas within them might collide. After the collision, the galaxies could merge to form a new, larger galaxy or become disrupted and change their structures. The collision can significantly impact the structure and appearance of the galaxies involved.

