

Name \_\_\_\_\_

## What Is The Largest Known Galaxy?

### Open-Ended Response Answer Key

1. Answers will vary, but potential observations and experiments might include studying IC 1101's structure, composition, star formation history, interactions with neighboring galaxies, and the distribution of dark matter. Insights sought may include understanding its formation, evolution, and the role it plays within the cluster.
2. IC 1101's existence challenges our current theories by raising questions about how such a massive galaxy formed and grew in the early universe. Its presence suggests that our understanding of galaxy evolution and the role of central galaxies in clusters may need refinement.
3. If IC 1101 were to collide with another galaxy, it could lead to significant disruptions, alterations in its structure, and potential star formation. The event could also influence the dynamics of the entire galaxy cluster, affecting the motions and interactions of other galaxies.
4. Dark matter within IC 1101 is of particular interest because its colossal mass provides an opportunity to study the influence of dark matter on galactic dynamics at an extreme scale. Understanding dark matter's role within IC 1101 can contribute to our broader understanding of the universe's mysterious dark matter component.

