

Name \_\_\_\_\_

## Cosmic Cities in the Night Sky

### Open-Ended Response Answer Key

1. Answers will vary, but students might describe star clusters within the galaxy, the Milky Way's spiral shape with its arms, and signs of past or ongoing galaxy interactions, such as distorted shapes or starbursts.
2. Galaxies and cities on Earth both have organized structures, neighborhoods, and interactions. However, galaxies are on a much larger scale and are composed of stars and cosmic elements. The term "cosmic cityscape" highlights the ordered and interconnected nature of galaxies in the universe.
3. Dark matter is important because it affects a galaxy's mass and gravitational interactions. Supermassive black holes influence the dynamics of galaxies and play a role in controlling star formation in their vicinity.
4. As an astronomer, one might want to investigate the formation of specific types of galaxies, the role of supermassive black holes in galaxy evolution, the distribution of dark matter in galaxies, and the effects of galaxy interactions. Tools like telescopes, simulations, and observational data would be used to explore these areas of research.

