

Name _____

What Is A Supermassive Black Hole?

Short Answer Key

1. The event horizon of a black hole is the boundary beyond which nothing, not even light, can escape due to the black hole's gravitational pull.
2. Supermassive black holes are believed to form through processes like the accretion of gas and the merger of smaller black holes. They continue to grow by consuming nearby gas, stars, and even other black holes.
3. Astronomers calculate the mass of supermassive black holes by tracking the orbits of stars and gas around them. By studying these orbital dynamics, they can determine the black hole's mass.
4. An active galactic nucleus (AGN) is a galaxy hosting a supermassive black hole that emits powerful jets of particles and intense radiation. Galaxies with AGNs are of interest because they are some of the most energetic objects in the universe.
5. Understanding the role of supermassive black holes in galaxy evolution is essential because these black holes can regulate star formation rates and influence the distribution of stars and gas within a galaxy. This interaction is fundamental to unraveling the mysteries of galaxy formation and evolution.

