Name _____

From Stellar Endings to Cosmic Mysteries: Can a Star Turn into a Black Hole?

Short Answer Key

1. Depending on its mass, a massive star can either become a supernova and potentially form a black hole or expand into a red giant and eventually become a white dwarf.
2. A star's mass is the primary factor that determines whether it can become a black hole. If a massive star has a core mass exceeding about three times the mass of our Sun, it can undergo core collapse and become a black hole.
3. The event horizon is the boundary surrounding a black hole beyond which nothing, not even light, can escape. It is the point of no return in the gravitational grip of a black hole.
4. Black holes formed from the remnants of massive stars are referred to as "stellar-mass" black holes to distinguish them from other types of black holes, such as supermassive black holes found in the centers of galaxies.