Name _____

Into the Cosmic Abyss: Exploring the Mysteries of Black Holes

Short Answer Key

1. Black holes are usually detected by the effects they have on nearby objects, such as stars and gas clouds. These effects include changes in the orbits of objects and the emission of X-rays and other radiation.
2. When a massive star exhausts its nuclear fuel, it collapses under its own gravity, triggering a supernova explosion. After the explosion, the core of the star can collapse further, forming a black hole.
3. The event horizon is the boundary beyond which nothing, not even light, can escape the black hole's gravity. It marks the point of no return for any object or radiation falling into the black hole.
4. Stellar-mass black holes are formed from remnants of massive stars and are relatively smaller in size. Supermassive black holes, on the other hand, are much larger and likely form through a different process that is still being studied.
5. Scientists find black holes fascinating and intriguing because they challenge our understanding of the fundamental laws of physics. They also play a crucial role in the evolution of galaxies and the structure of the universe.