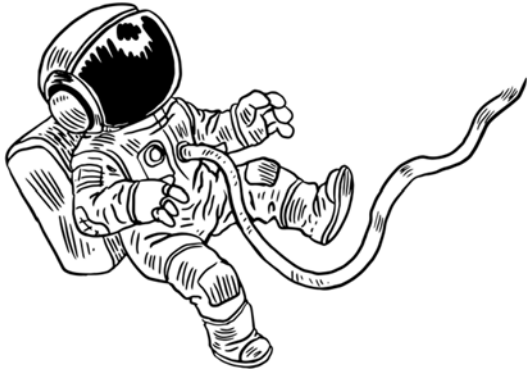


Name _____

The Cosmic Puzzle: Different Types of Black Holes



Black holes, the mysterious cosmic objects known for their immense gravitational pull, come in various types and sizes. In this passage, we will explore the different types of black holes, including stellar-mass, intermediate-mass, and supermassive black holes, each with its unique characteristics and role in the universe.

Stellar-Mass Black Holes

Stellar-mass black holes are the most common type of black holes found in the universe. They typically form when massive stars reach the end of their life cycle and undergo a violent supernova explosion. What remains after the explosion is a dense core that can collapse into a black hole. The mass of these black holes ranges from three to twenty times that of our sun, making them relatively small in comparison to other types.

Intermediate-Mass Black Holes

Intermediate-mass black holes occupy a middle ground between stellar-mass and supermassive black holes. Their existence is still a subject of ongoing research, and their formation mechanisms remain a mystery. These black holes have masses ranging from hundreds to thousands of times that of our sun, making them larger than stellar-mass black holes but significantly smaller than supermassive ones.

Supermassive Black Holes

At the centers of most galaxies, including our own Milky Way, reside supermassive black holes. These cosmic giants are characterized by their enormous size, with masses ranging from millions to billions of times that of our sun. Unlike stellar-mass black holes, which form from the remnants of massive stars, the origin of supermassive black holes is less well understood. One prevailing theory suggests that they may grow over time by accreting matter and merging with other black holes.

Primordial Black Holes

Primordial black holes are a theoretical type of black hole that could have formed in the early universe. Unlike other black holes, they would not be the result of stellar evolution. The existence of primordial black holes is still uncertain, and they would have a wide range of possible masses, from tiny to supermassive.

Microscopic Black Holes

Microscopic black holes are another hypothetical type of black hole that could be much smaller than other known black holes. These tiny black holes would be on a minuscule scale, and their existence is purely theoretical. Scientists continue to investigate whether microscopic black holes could exist and what their properties might be.

