

Name _____

Black Hole Anatomy Challenge

Scenario: Imagine you're reading a field journal entry written by an astronaut orbiting a black hole. The astronaut describes each part of the black hole as they observe it from a safe distance. Your mission is to **identify and label** each numbered part of the black hole based on the description.

Observation Log Entry

"From my view on the ship, the black hole looks like a glowing whirlpool in space. Around the edge, I see a **bright, spinning disk of hot gas and dust**—it's swirling like a storm. Just inside that, there's a **dark, spherical boundary**—that's the point where not even light can escape. At the very core, where no signals return and the laws of physics seem to break down, lies the **infinitely dense center**.



Above and below this whole structure, I notice **two beams of energy shooting outward**, possibly from magnetic interactions. Strangely, my instruments also detect that **light from stars behind the black hole is being bent**, creating a distorted ring. Near the outer region of the disk, I can detect the presence of **intense heat and radiation**, but that zone is still technically outside the event horizon."

Your Task

Below are **6 labeled parts** of the black hole. Based on the astronaut's description, identify **each part to its correct name** from the **word bank**.

Parts to Label:

1. _____ – The bright, spinning ring of gas and dust
2. _____ – The point of no return
3. _____ – The core where gravity becomes infinite
4. _____ – Beams of energy that shoot out from the black hole's poles
5. _____ – The bending of light around the black hole
6. _____ – The hot, outer region where X-rays may be emitted

Word Bank

- Event Horizon
- Accretion Disk
- Singularity
- Relativistic Jets
- Gravitational Lensing
- Corona