

# THE BIRTH OF A BLACK HOLE

## Main Formation Process:

Step 1 (Star Image): "A main sequence star more than 10 times the mass of the sun, will use up its fuel and start fusing elements up till iron, until it cannot sustain the balance between gravity and radioactivity"

Step 2 (Explosion): "In less than a second the star will implode into itself and cause an explosion larger than the solar system."

Step 3 (Anomaly): "However the gravity can be so strong that it can create an anomaly in physics."

Step 4 (Black Hole Image): "This is called a black hole. They're extremely dense, with such strong gravitational attraction that even light cannot escape their grasp if it comes near enough. Albert Einstein first predicted the existence of black holes in 1916, with his general theory of relativity. The first physical black hole ever discovered was spotted in 1971."

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## TYPES OF BLACK HOLES

### Stellar Black Holes:

- "Black holes formed by the collapse of individual stars are relatively small, but incredibly dense."
- "One of these objects packs more than three times the mass of the sun into the diameter of a city."
- "This leads to a crazy amount of gravitational force pulling on objects around the object."

- "Stellar black holes then consume the dust and gas from their surrounding galaxies, which keeps them growing in size."

## Supermassive Black Holes:

- "These enormous black holes are millions or even billions of times as massive as the sun, but are about the same size in diameter."
- "Such black holes are thought to lie at the center of almost every galaxy, including the Milky Way."
- "Once these giants have formed, they gather mass from the dust and gas around them, material that is plentiful in the center of galaxies, allowing them to grow to even more enormous sizes."

## Intermediate Black Holes:

- "Scientists once thought that black holes came in only small and large sizes, but recent research has revealed the possibility that midsize, or intermediate, black holes could exist."
- "Such bodies could form when stars in a cluster collide in a chain reaction."
- "Newer research, from 2018, suggested that these IMBHs may exist in the heart of dwarf galaxies"