

What Is a Black Hole?

National Aeronautics and
Space Administration



A black hole is an area of such immense gravity that nothing—not even light—can escape from it.

The material left over after the explosion falls into an infinitely small point.

This small point is called a singularity.

The area around a singularity where nothing—including light—is able to escape is called an event horizon. That's probably what you are thinking of when you think of a black hole.

Black holes can form at the end of some stars' lives.

Once all of a star's material is used up, it no longer has the energy to support itself and it collapses.

All of that collapsing matter creates a magnificent explosion.

Black holes can form in many ways and have a range of masses. Stellar black holes have as much matter as a bunch of our suns. Supermassive black holes, on the other hand, have the mass of 1,000 million suns, all trapped within a tiny singularity.

What would happen if you took a spaceship near a black hole's event horizon? The end closer to the black hole would experience so much more gravity than the other end that it would stretch out like a piece of spaghetti. What's the scientific term for this? Spaghettification!



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