

Name _____

What Happens When Galaxies Collide?

Short Answer Key

1. Tidal distortions during galactic encounters can stretch galaxies into elongated shapes, create tidal tails of stars and gas, and stimulate bursts of star formation.
2. Galactic mergers involve two galaxies of similar size merging to form a new, larger galaxy. They are significant in studying galaxy evolution as they can transform the structure, appearance, and properties of galaxies.
3. Supermassive black holes in the centers of galaxies can merge during galactic collisions. Scientists are interested in this process because it generates gravitational waves, allowing us to study black hole mergers and test Einstein's theory of general relativity.
4. Star formation during a galactic collision occurs as gas clouds compress, leading to the birth of new stars. This can illuminate the galaxies involved, creating a display of celestial fireworks.
5. The study of gravitational waves generated by merging black holes during galactic collisions is important for astrophysics because it provides direct evidence of these waves and offers insights into the extreme conditions and phenomena in the universe.

