

Name \_\_\_\_\_

## The Big Fascination Answer Key

1. A singularity forms when a massive star collapses under its own gravity into an infinitely dense point.
2. The event horizon marks the boundary beyond which nothing can escape the black hole's gravitational pull.
3. Supermassive black holes may influence the formation and structure of galaxies.
4. They may have grown from smaller black holes over time or formed directly in the early universe.
5. Gravitational waves are ripples in space-time caused by the merger of two black holes.
6. Einstein's theory of general relativity was confirmed by these observations.
7. The black hole information paradox questions whether information is lost forever in a black hole.
8. Studying black holes helps scientists understand extreme physics, gravity, and space-time.
9. Recent developments like the detection of gravitational waves and imaging black holes have significantly advanced our knowledge.
10. They raise more questions—such as those about the singularity and information loss—showing that there is still much we don't understand.