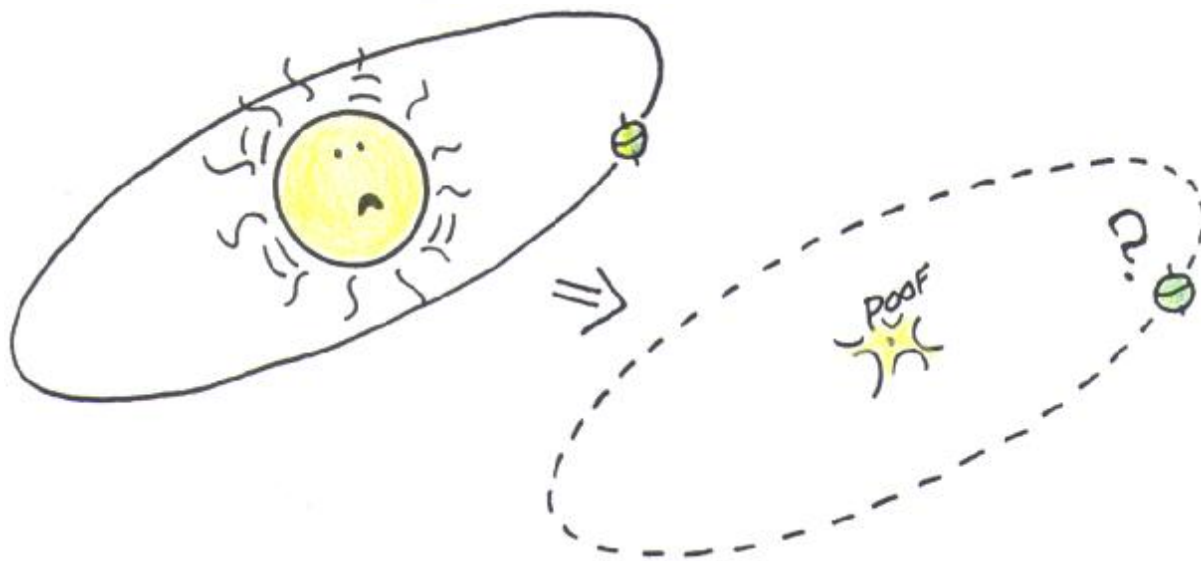


NEXT-TIME QUESTION



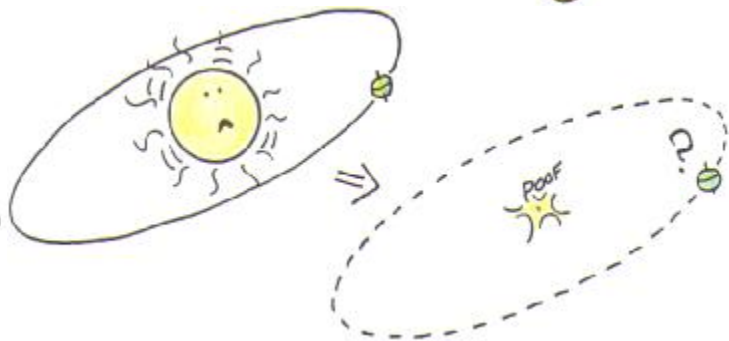
If the Sun suddenly collapsed to become a black hole, the Earth would

- a) leave the solar system in a straight-line path.
- b) spiral into the black hole.
- c) continue to circle in its usual orbit.



NEXT-TIME QUESTION

CONCEPTUAL Physics



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Answer: c, continue to circle in its usual orbit

We can see from Newton's equation, $F = G \frac{mM}{d^2}$ that the

interaction F between the mass of the Earth and the Sun doesn't change. This is because the mass of the Earth does not change, the mass of the Sun does not change even though it is compressed, and the distance from the centers of the Earth and the Sun, collapsed or not, does not change. Although the Earth would very soon freeze and undergo enormous surface changes, its yearly path would continue as if the Sun were its normal size.