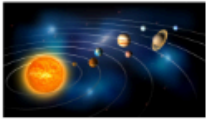


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Crash Course Astronomy #33: Black Holes

Name: _____ Date: _____

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1. If a star's core is less than 1.4 times the mass of the Sun, it becomes a _____.
2. A neutron star forms when the stellar core is between 1.4 and 2.8 times the Sun's mass and is supported by _____ pressure.
3. A black hole forms when nothing can stop a core from collapsing because its mass exceeds _____ times the Sun's mass.
4. The speed needed to escape a celestial body's gravity is called _____ velocity.
5. The surface around a black hole where the escape velocity equals the speed of light is called the _____.
6. A black hole with at least 3 times the Sun's mass is called a _____ black hole.
7. Gravity gets stronger the closer you are to a massive object, which is why a black hole's gravity is only intense when you're _____ to it.
8. The extreme stretching caused by gravity near a black hole is called _____.
9. The concept that space and time are interconnected is known as _____.
10. Time slows down near a black hole due to the warping of _____.
11. Light trying to escape a black hole loses energy, an effect known as gravitational _____.
12. A black hole with millions of solar masses found at the center of galaxies is called a _____ black hole.
13. The mass of the black hole at the center of the Milky Way is about _____ million times the mass of the Sun.
14. Gravity becomes weaker the farther you are from the _____ of a massive object.
15. Scientists are still studying black holes because their behavior involves complex physics including _____ mechanics.

Crash Course Astronomy #33: Black Holes KEY

1. If a star's core is less than 1.4 times the mass of the Sun, it becomes a **white dwarf**.
2. A neutron star forms when the stellar core is between 1.4 and 2.8 times the Sun's mass and is supported by **neutron degeneracy** pressure.
3. A black hole forms when nothing can stop a core from collapsing because its mass exceeds **2.8** times the Sun's mass.
4. The speed needed to escape a celestial body's gravity is called **escape** velocity.
5. The surface around a black hole where the escape velocity equals the speed of light is called the **event horizon**.
6. A black hole with at least 3 times the Sun's mass is called a **stellar-mass** black hole.
7. Gravity gets stronger the closer you are to a massive object, which is why a black hole's gravity is only intense when you're **close** to it.
8. The extreme stretching caused by gravity near a black hole is called **spaghettification**.
9. The concept that space and time are interconnected is known as **space-time**.
10. Time slows down near a black hole due to the warping of **space-time**.
11. Light trying to escape a black hole loses energy, an effect known as gravitational **redshift**.
12. A black hole with millions of solar masses found at the center of galaxies is called a **supermassive** black hole.
13. The mass of the black hole at the center of the Milky Way is about **4.3** million times the mass of the Sun.
14. Gravity becomes weaker the farther you are from the **center** of a massive object.
15. Scientists are still studying black holes because their behavior involves complex physics including **quantum** mechanics.

15 Questions

Answer Key Included

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