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Life Cycle of Stars

Stars are born in nebulae, huge clouds of dust and gas that collapse under gravitational forces, forming protostars. These young stars undergo further collapse, forming main sequence stars like our Sun that fuse hydrogen into helium. Stars expand as they grow old. As the core runs out of hydrogen and then helium, the core contracts, and the outer layers expand, cool, and become less bright. This is a red giant or a red supergiant (depending on the initial mass of the star). The star will eventually run out of fuel. Its fate is determined by the original mass of the star; it will become either a white dwarf, neutron star, or black hole

Using your Student Reference Sheet, complete the following:

1. Draw a diagram showing the life cycle of a medium-mass star.
2. Draw a diagram showing the life cycle of a high-mass or massive star.
3. How does the scale or size of a star affect the life-cycle of the star?

1. How does nuclear fusion affect the life cycle of a star.
2. Why is the life cycle of stars significant for our solar system?
3. Can the life cycle of a star be studied directly? Explain.