

## P2 Stars Quiz Answers

1. What happens to cause the stable period in the life cycle of a star to end?

It runs out of hydrogen so nuclear fusion slows down

2. What will happen to the Sun after the stable period ends?

Temperature decreases and change to red giant, temperature increases and change to white dwarf

3. What happens to the elements produced in a supernova?

They are distributed through the universe

4. Why are stars able to give out energy for millions of years?

Hydrogen is turned to helium by nuclear fusion. Stars have a massive supply of hydrogen

5. Why does the Sun remain stable for millions of years?

Inward force of gravity is equal to the outward force of radiation pressure for millions of years

6. How did the elements come to be formed?

Nuclear fusion of hydrogen forms helium; heavy elements are formed by the fusion of lighter elements during a supernova

7. Describe how a star forms.

Dust and gas is pulled together by gravity

8. What happens to massive stars after the red super giant stage?

Outer layers are thrown into space which scatters gas and dust into space and distributes the elements throughout space. The core left behind forms a neutron star or black hole if sufficient mass is left behind

9. Why do scientists believe the Solar System was formed from the material produced when earlier stars exploded?

Solar System contains elements heavier than hydrogen and helium which were formed by nuclear fusion in a supernova

10. What is a black hole?

Matter with such high density that light is pulled in

11. What is produced as the gases from a star spiral into a black hole?

X-rays

12. Why are fusion reactors not used to generate electricity?

They currently are only experimental and use more energy than they release

13. Why do scientists continue to try and develop nuclear fusion power plants?

They could provide unlimited energy, there is no radioactive waste produced and they also want to show that it can be done