STARS

WORKSHEET

While stars look like tiny dots in our night sky that are actually huge glowing balls of hot gas. Varying in their mass, size, temperature, colour, luminosity, age, distance from Earth and orbit all stars started as swirling clouds of hydrogen.

Eventually the hydrogen atoms collide and fuse which produces helium. When hydrogen and helium produce a gravitational pull space dust is attracted and the now swirling cloud or nebulae has its own gravity which causes the gas cloud to draw in on itself. As more gas gathers at the center, it becomes denser and the pressure increases which causes it to heat up and glow.

Its gravity continues to attract more gas and space dust which makes it grow even further and this produces more gravitational pressure and rises in temperature. Eventually, the center temperature is so hot that nuclear fusion occurs.This fusion produces high levels of energy and heat is generated which makes the gas at the center of the star expand. This radiation of heat forces the gases to expand but the gravitation pull of the star pulls them back in until they reach an equilibrium.

At this point a star is born and the energy generated by the star escapes into space as light energy that we see here on Earth. This burning of fuel and expelling of energy continues for billions of years until the star runs out of gas to burn. There are hundreds of billions of stars in the Milky Way Galaxy the closest of which is our sun.

1. WHICH 2 ELEMENTS MAKE UP STARS?

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2. LIST 4 WAYS IN WHICH STARS VARY FROM EACH OTHER?

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3. WHY DOES THE CLOUD OF GAS DRAW IN ON ITSELF?

4. WHY DO STARS PRODUCE LIGHT?

5. STARS LIVE FOR BILLIONS OF YEARS BUT WHY DO THEY EVENTUALLY DIE?

6. WHICH STAR IS CLOSEST TO EARTH?

7. LIST 2 THINGS THIS STAR GIVES EARTH?

8. DRAW A PICTURE OF A STAR BELOW WITH A CENTRE OF HELIUM AND HYDROGEN, DUST AND LIGHT ENERGY RADIATING FROM IT.

ANSWERS

1. WHICH 2 ELEMENTS MAKE UP STARS?

Hydrogen and Helium

2. LIST 4 WAYS IN WHICH STARS VARY FROM EACH OTHER?

Any 4 of mass, size, temperature, colour, luminosity, age, distance from Earth.

3. WHY DOES THE CLOUD OF GAS DRAW IN ON ITSELF?

Gravity.

4. WHY DO STARS PRODUCE LIGHT?

The nuclear fusion reaction is so hot that it makes the star glow as excess heat energy is converted to light energy.

5. STARS LIVE FOR BILLIONS OF YEARS BUT WHY DO THEY EVENTUALLY DIE?

They use up all of their hydrogen fuel.

6. WHICH STAR IS CLOSEST TO EARTH?

The Sun

7. LIST 2 THINGS THIS STAR GIVES EARTH?

Any 2 of heat, light and gravity.

DRAW A PICTURE OF A STAR BELOW WITH A CENTRE OF HELIUM AND HYDROGEN, DUST AND LIGHT