Science Explorations

Grade 4 Name: _____

Read each passage and decide: did the author write to Persuade, Inform, or Entertain? Answer the questions in complete sentences.

The Life Cycle of Stars

Did you know that the stars we see twinkling in the night sky are not forever? Just like living things, stars have a life cycle, being born, living for billions of years, and eventually dying. This incredible process takes a very long time.

A star begins as a giant cloud of dust and gas, mostly hydrogen. Gravity pulls this material together, making it denser and hotter. When the center reaches about 15 million degrees Celsius, nuclear fusion begins. This is when hydrogen atoms combine to form helium, releasing huge amounts of energy and making the star shine brightly. Our own Sun is a star in this main part of its life.

For most of its life, a star like our Sun is called a "main sequence star." It balances the inward pull of gravity with the outward push of energy from fusion. But eventually, it runs out of hydrogen fuel in its core. Then, it expands into a "red giant," becoming much larger and cooler.

After the red giant phase, smaller stars like the Sun shed their outer layers, forming a cloud called a planetary nebula. What's left is a tiny, super-dense core called a "white dwarf." Scientists study star life cycles to understand the universe's past and future, and how elements essential for life were created inside stars .

COMPREHENSION QUESTIONS

(1) What is the MAIN purpose of this passage?

(A) To convince readers that studying stars is the most important science.

(B) To tell a fictional story about a star's adventure in space.

(C) To teach readers about the different stages in a star's life.

(D) To explain why stars are better than planets.

(2) The author wrote this passage mainly to _____ the reader.

continue writing on the lines below

(3) Which detail from the passage BEST shows the author's purpose?

(A) Did you know that the stars we see twinkling in the night sky are not forever?

(B) This is when hydrogen atoms combine to form helium, releasing huge amounts of energy and making the star shine brightly.

(C) Our own Sun is a star in this main part of its life.

(D) Scientists study star life cycles to understand the universe's past and future...

(4) How do you know the author's purpose? Use TWO details from the passage to support your answer.

(5) If you were writing about the same topic, which purpose would YOU choose — to persuade, inform, or entertain? Explain why.