🚀 Big Discoveries

Grade 4 Name: _____

Read the story carefully. Then answer each question below in a full sentence.

Big discoveries happen through chains of events. Identify every cause and effect in the story, and think about how one change could have altered history.

The Unexpected Glow

Dr. Anya Sharma was a chemist known for her persistent work on new materials. One Tuesday, she was attempting to synthesize a super-strong adhesive, hoping to create a glue that could hold anything. After hours of precise measurements and careful mixing, her experiment failed. Instead of the clear, fast-drying glue she expected, a thick, gooey residue remained in the beaker, completely useless as an adhesive. Frustrated, she left the beaker on her bench, planning to clean it later.

Later that evening, as the lab lights dimmed, Dr. Sharma noticed a faint, almost magical glow coming from the "failed" beaker. The residue, which had seemed so disappointing earlier, was softly emitting light it had absorbed from the overhead lamps. Intrigued, she decided to investigate this unexpected property rather than simply discarding the failed batch.

Over the next few weeks, Dr. Sharma meticulously studied the glowing substance. She discovered it was a unique compound that could absorb light energy and release it slowly over many hours. She named her accidental discovery "Luminite." She published her findings in a scientific journal, detailing how this new material worked.

Other scientists and engineers quickly recognized Luminite's potential. Within a few years, it was being incorporated into emergency exit signs, making them visible even during power outages. It was also used in glow-in-the-dark toys and clothing, adding a fun

and safe element to everyday items. Dr. Sharma's "failed" experiment had illuminated the path to a brighter, safer future.

COMPREHENSION QUESTIONS

(1) Which of these BEST explains why Dr. Sharma investigated the gooey residue instead of throwing it away? Circle the correct answer.

(A) The residue smelled unusual, which suggested a new element.

(B) She was curious about the faint glow it emitted in the dark.

(C) Her lab assistant told her it might be valuable.

(D) She needed to reuse the beaker for another experiment.

(2) Complete the sentence: Because Dr. Sharma published her findings in a scientific journal, _____.

(3) What did Dr. Sharma name the light-storing compound she discovered?

(4) Describe how Dr. Sharma's failed adhesive experiment led to the discovery of Luminite and its broader impact.

(5) What might have happened if Dr. Sharma had simply cleaned the beaker and discarded the residue without noticing the glow? Explain.