Louisiana Grade 8 GLEs addressed by STEM Field Trip

Science as Inquiry	
2. Identify problems, factors, and questions that must be considered in a scientific investigation (SI-M-A1)	Using WWII as a scenario for real-world scientific application
4. Design, predict outcomes, and conduct experiments to answer guiding questions (SI-M-A2)	STEM Field trip contains a contest involving students designing, hypothesizing, and testing a vehicle
5. Identify independent variables, dependent variables, and variables that should be controlled in designing an experiment (SI-M-A2)	Design contest stresses variables and the proper method of change and testing
27. Recognize that science uses processes that involve a logical and empirical, but flexible, approach to problem solving (SI-M-B1)	Under the stress of WWII, flexibility was key to meet time constraints
33. Evaluate models, identify problems in design, and make recommendations for improvement (SI-M-B4)	Students evaluate WWII-era Higgins Boats, identify limitations, and pose modifications/improvements
34. Recognize the importance of communication among scientists about investigations in progress and the work of others (SI-M-B5)	The Manhattan Project was the largest-scale example of scientific collaboration up to that point
Physical Science	
1. Determine that all atoms of the same element are similar to but different from atoms of other elements (PS-M-A2)	While examining the atomic bomb, students learn how the properties of uranium made it suitable for use in nuclear weaponry and energy.
14. Explain the relationships among force, mass, and acceleration (PS-M-B5)	While determining the features that allow a glider to fly, students look for design elements that meet force, mass, and acceleration.
Mathematics	
11. Translate real-life situations that can be modeled by linear or exponential relationships to algebraic expressions, equations, and inequalities (A-1-M) (A-4-M) (A-5-M)	Students are posed several real life situations where they must solve for x in finding production numbers, firing distances, and recruitment numbers.
31. Use area to justify the Pythagorean theorem and apply the Pythagorean theorem and its converse in real-life problems (G-5-M) (G-7-M)	Pythagorean theorem is used to calculate the range of a target based on given points.
46. Distinguish between and explain when real-life numerical patterns are linear/arithmetic (i.e., grows by addition) or exponential/geometric (i.e., grows by multiplication) (P-1-M) (P-4-M)	In determining the growth rate of bacteria, students determine whether it grows in a linear pattern or exponentially.