Day	**1**	**2**	**3**	**4**	**5**
Lesson Question	How does an airbag work?	How can we model how an airbag works?	What is the difference between a chemical and physical change?	Is matter conserved in a chemical reaction?	What is a chemical reaction and how do we classify them?
Phenomena	Airbags	Airbags	Phase Changes and Chemical Reactions	Elephant Toothpaste Demo	Chemical Reaction Test Tube Demos
Main Activities	Initial Hypotheses List	Initial Models Gotta Have Checklist	Physical and Chemical Change Card Sort	Open vs. Closed System Lab (baking soda and vinegar)	Types of Chemical Reactions Card Sort
Day	**6**	**7**	**8**	**9**	**10**
Lesson Question	How do we balance chemical equations based on the law of conservation of mass?	How can we modify or revise our initial models to better represent how an airbag works?	What is stoichiometry and why is it important in chemistry?	How can we determine the limiting and excess reactants in a chemical reaction?	How can we determine theoretical, actual and percent yield using stoichiometric calculations?
Phenomena	Elephant Toothpaste	Airbags	Making a Sandwich	Creating a Goody Bag	Observing a Percent Yield that is Less Than 100%
Main Activities	PhET Balancing Chemical Equations Simulation	Revise Initial Models	Stoichiometry Escape Room	Cookie Stoichiometry Activity	Salt Recovery Lab
Day	**11**	**12**	**13**	**14**	**15**
Lesson Question	Are we all on the same page?	How can we design an airbag to inflate with just the right amount of gas so as to not cause harm?	How can we design an airbag to inflate with just the right amount of gas so as to not cause harm?	How can we model how an airbag works?	
Phenomena	N/A	Acid/Base Reactions	Acid/Base Reactions	Airbags	
Main Activities	Review Quiz Exit Ticket	Engineering Design Part 1	Engineering Design Part 2	Final Model Evidence-based Explanations	