Student Handouts:

Name: _____

Instructions: Your teacher is going to conduct a few demonstrations. Write down your observations below:

Flame test:

Sketch:	
I notice…… • • •	I wonder…. • • •

Burning Magnesium:

Sketch:	
I notice…… • • •	I wonder…. • • •

Station 1: Effect of Particle Size on Reaction Rates

Trial	Conditions	Predictions	Launch time (s)	Launch Height (cm)
1	½ tablet	It is predicted that the time will be _____ seconds and the height will be _____ meters.		
2	½ tablet			
3	½ tablet			
Average time and height For whole table Trials:				
4	½ tablet crushed	It is predicted that the time will (increase, decrease) and the height will (increase, decrease) as surface area increases.		
5	½ tablet crushed			
6	½ tablet crushed			
Average time and height for crushed tablet trials:				

Analysis: Create a **bar graph** for your data. Be sure to label your axis and give your graph a title.

Conclusion: I notice that the whole tablet had a _____ (faster/shorter) reaction time and launched height is _____ (higher/lower) compared to the crushed tablet. The reason for this is because _____

_____

_____.

Station 2: Effect of Temperature on Reaction Rates

Trial	Conditions	Predictions	Dissolve time (s)
1	Cold Water	It is predicted that the time will be _____ seconds.	
2	Cold Water		
3	Cold Water		
Average time for cold water Trials:			
4	Hot water	It is predicted that the time will _____ (increase, decrease) as temperature increases.	
5	Hot water		
6	Hot water		
Average time hot water trials:			

Analysis: Create a **bar graph** for your data. Be sure to label your axis and give your graph a title.

Conclusion: I notice that the cold water dissolved _____ (faster/shorter) compared to the hot water. The reason for this is because _____

_____

_____.

Station 3: The Effect of Catalyst on Reaction Rates

Trial	Solution	Predictions	Float time (s)
1	Catalase	It is predicted that the time will be _____ seconds.	
2	Catalase		
3	Catalase		
Average time for catalyst Trials:			
4	Water	It is predicted that the time will _____ (increase, decrease) with water.	
5	Water		
6	Water		
Average time water trials:			

Analysis: Create a **bar graph** for your data. Be sure to label your axis and give your graph a title.

Conclusion: I notice that the discs with catalase (which has a catalyst) had a _____

(faster/shorter) reaction time than our control group, water. The reason for this is because

_____

_____

_____.

Station 4: Effect of Concentration on Reaction Rates

Trial	Conditions	Predictions	Launch time (s)
1	Solution 1A	It is predicted that the time will be _____ seconds.	
2	Solution 1A		
3	Solution 1A		
Average time for cold water Trials:			
4	Solution 2A	It is predicted that the time will _____ (increase, decrease) as concentration decreases.	
5	Solution 2A		
6	Solution 2A		
Average time hot water trials:			

Analysis: Create a **bar graph** for your data. Be sure to label your axis and give your graph a title.

Conclusion: I notice that solution 1A that has a higher concentration had a _____

(faster/shorter) reaction time than solution 2A which has a lower concentration. The reason for this is because

_____

_____

_____.