FLINN SCIENTIFIC

Name_____

Digestion Connection Worksheet

Data Table 1. Stomach Digestion of Food

Time (minutes)	Temperature (°C)	Food Items				Changes to stomach juices
		Flour Item	Corn Starch Item	Oil Item	Sugar Item	
5						
10						
Gently swirl the 250-mL beaker.						
15						
20						
Gently swirl the 250-mL beaker.						
25						
30						
Gently swirl the 250-mL beaker.						
35						
40						

Data Table 2. Enteric-Coating Recipe, Trial 1

Ingredient	Initial Amount Used (g or mL)	Additional Amount (g or mL)	Total Amount Used (g or mL)
Flour			
Corn starch			
Sugar			
Olive oil			
Water			

Data Table 3. Enteric-Coated Pill in Stomach Acids, Trial 1

Time (minutes)	Temperature, °C	Observations
0		pH of stomach juices =
5		
10		
Gently swirl the 100 mL beaker.		
15		
20		

Data Table 4. Enteric-Coating Recipe, Trial 2

Ingredient	Initial Amount Used (g or mL)	Additional Amount (g or mL)	Total Amount Used (g or mL)
Flour			
Corn starch			
Sugar			
Olive oil			
Water			

Data Table 5. Enteric-Coated Pill in Stomach Acids, Trial 2

Time (minutes)	Temperature, °C	Observations
0		pH of stomach juices =
5		
10		
Gently swirl the 100 mL beaker.		
15		
20		

Post-Lab Questions

1. During Part A, what observations were made about the different food items tested?

2. Of the possible ingredients used in Data Table 2, predict the order the ingredients will dissolve, fastest to slowest, based on data collected from Part A.

3. How did the information from Part A assist in the design of the enteric coating for your pill?

4. Explain the recipe you used for the enteric coating for your pill. Describe what ingredients were used, why each was chosen and how the product performed as a pill coating.

5. What changes did you make to the recipe to improve upon your enteric coating recipe? Why?

6. What other variables could impact the longevity of the enteric coating on the pill? Explain your reasoning.

7. If you were asked to design an enteric coating for a medication to be taken with food, how would you alter your recipe?

8. Pepsin is an enzyme that actively breaks down protein within the stomach. If you were required to use protein in the enteric coating of your pill, explain how this would change the effectiveness of your pill coating.