CP Chemistry Name:_____-
Scientific Method Activity

Directions: Please identify the six (6) main steps of the scientific method AND the three important components of a properly designed experiment in the story below. Identify the different items by circling the phrase or sentence and then labeling what it represents.

AN ADVENTURE WITH PEAS

I wonder if pea plants will grow better under blue light? I go to the library and look up information on growing pea plants and also on characteristics of light. I think that pea plants will not grow better under blue light, but they would grow better under red light. I purchase several pea plants. Three pea plants are placed under natural light, three pea plants are placed under blue colored lights and three pea plants are placed under red lights. I measure the height of the pea plants weekly. The plants receive the same water and fertilizer. I graph my data at the end of 6 weeks and compare the graphs. I determine that pea plants will grow an average of 4 inches taller under red light than natural light and that the pea plants will be an average of 2 inches smaller if grown under blue light. I make a poster showing my experiment and graphs and explain my findings to my science class.

Scenario 2: Alka-Seltzer Speed Race

Franklin is curious if the temperature of the water will affect the ability of an Alka-Seltzer tablet to dissolve. He uses his phone to check Wikipedia, where he finds that most substances dissolve better in warmer water. Franklin predicts that the tablets will dissolve more rapidly when the temperature of the water is increased. In order to conduct his experiment, Franklin purchased a box of Alka-Seltzer tablets. He also gathered 6 coffee mugs to act as his "reaction vessels". He also borrowed a stopwatch from his soccer coach and a thermometer from his science teacher. Using ice and/or the microwave, he created three different temperatures of water to test his idea. Two mugs of water were cooled to 10°C, two mugs of water were kept at 25°C and two mugs of water were heated to 90°C. One whole tablet of Alka-Seltzer was dropped into each mug and the exact time in seconds for it to completely dissolve was recorded in a chart. Looking at the completed chart allowed Franklin to determine that warm water does cause the Alka-Seltzer tablet to dissolve more quickly. He "tweets" about his discovery to his friends on Twitter.