

Michael Shelinbarger

Junior Division Engineering

Fling, Flang, Flung

The purpose of this experiment was to see if the length of a lever arm used on a catapult affected the distance the lever arm launched an object. The catapult uses a counter weight system; therefore, the experiment will see how far a 60cm, 90cm, 120cm and 150cm arm will launch a baseball with 30 pounds of weight on the other side. For this experiment, first you have to build the catapult. Load the baseball into the catapult and launch using 60cm lever arm. Record distance baseball traveled. Repeat steps 2-3 two more times and find average distance for 60cm lever arm. Repeat steps 2-4 using 90cm lever arm, 120cm lever arm, and 150cm lever arm. The hypothesis is that the 60cm arm will through the baseball the farthest. The hypothesis was proven true. It was true because when the catapult was tested the 60cm arm through the ball the farthest. It had a distance of 496cm while the 90cm arm through an average of 433cm, the 120cm arm through an average of 260cm, and the 150cm arm through an average of 180cm. Some sources of error that could have occurred are that while the catapult was being built the measurements of everything were not right. Some additional experiments that could be conducted are with a different type of catapult or anything else with any of the three types of levers. This could be applied this experiment to any machine in any business.