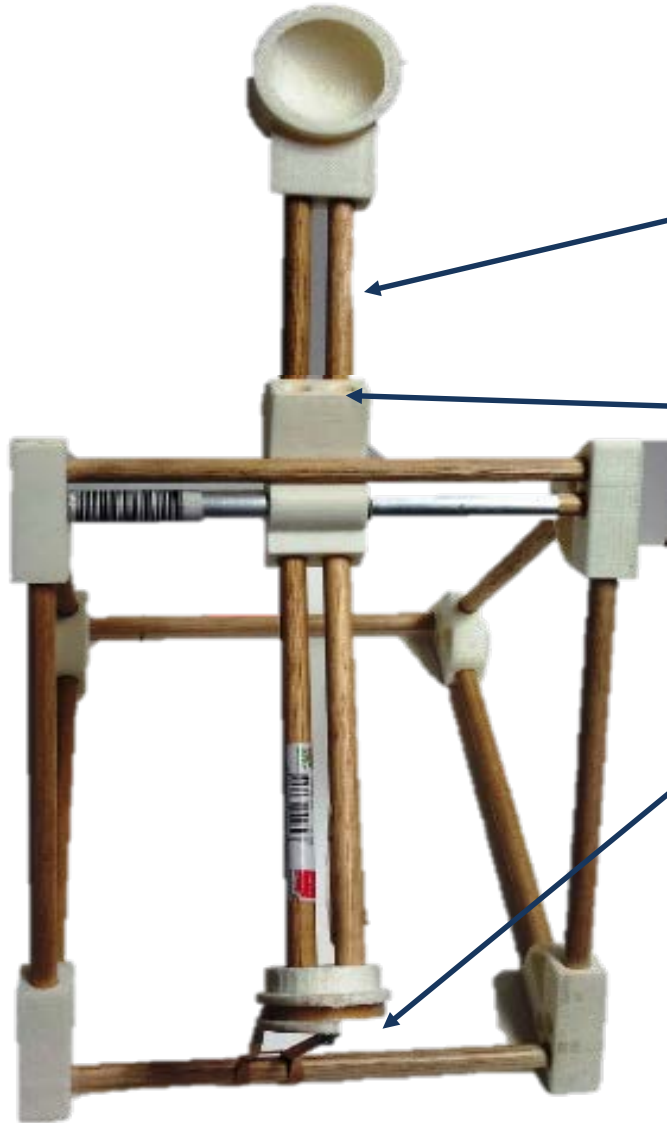
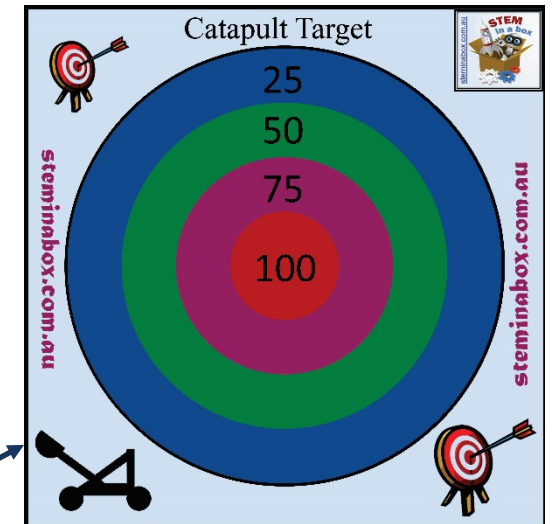


Catapult Scientific Investigations



- **Effect of Throw Arm Length on Projectile Displacement**
- **Effect of Launch Angle on Projectile Displacement**
- **Effect of Launch Power on Projectile Displacement**
- **Optimal Catapult Configuration for Desired Projectile Displacement & Accuracy**



Effect of Throw Arm Length on Projectile Displacement



Aim: To determine the influence of Throw Arm length on projectile displacement.

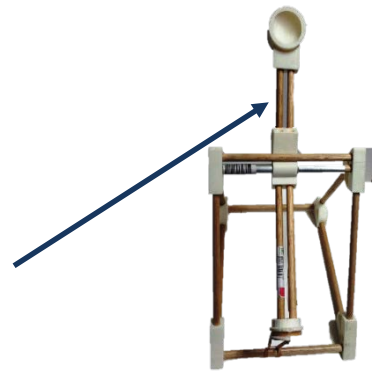
Hypothesis:

Method: Using a “fair test method” alter the Throw Arm length and record resultant horizontal projectile displacement .

Results:

Discussion:

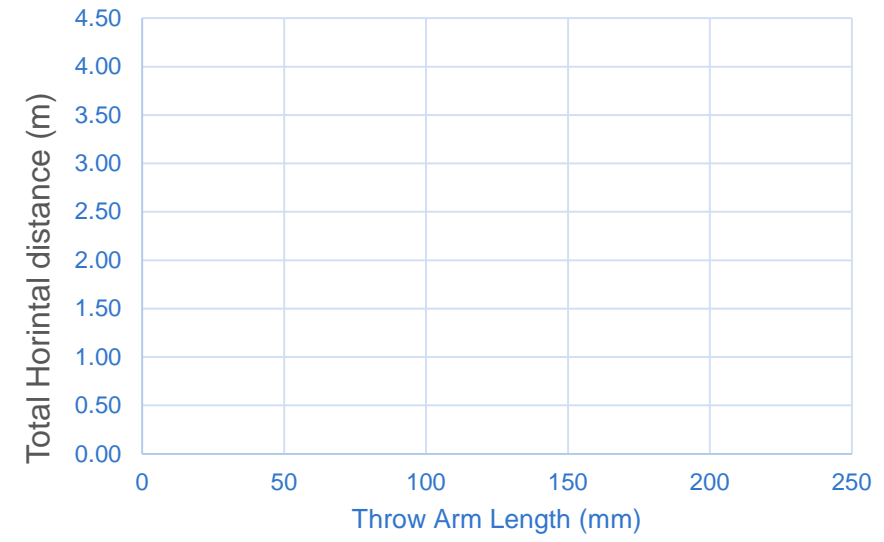
Conclusion:



Throw Arm Length (mm)	Total Horizontal Distance (m)			
	Trial 1	Trial 2	Trial 3	Av
55				
105				
155				
205				

Controlled Variables: Launch angle, launch power, wind conditions

Fig 1. Effect of Throw Arm Length on Projectile Displacement



Effect of Launch Angle on Projectile Displacement



Aim: To determine the influence of launch angle on projectile displacement.

Hypothesis:

Method: Using a “fair test method” alter the launch angle and record resultant horizontal projectile displacement .

Results:

Discussion:

Conclusion:

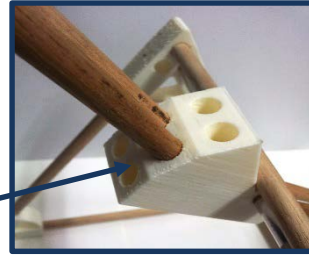
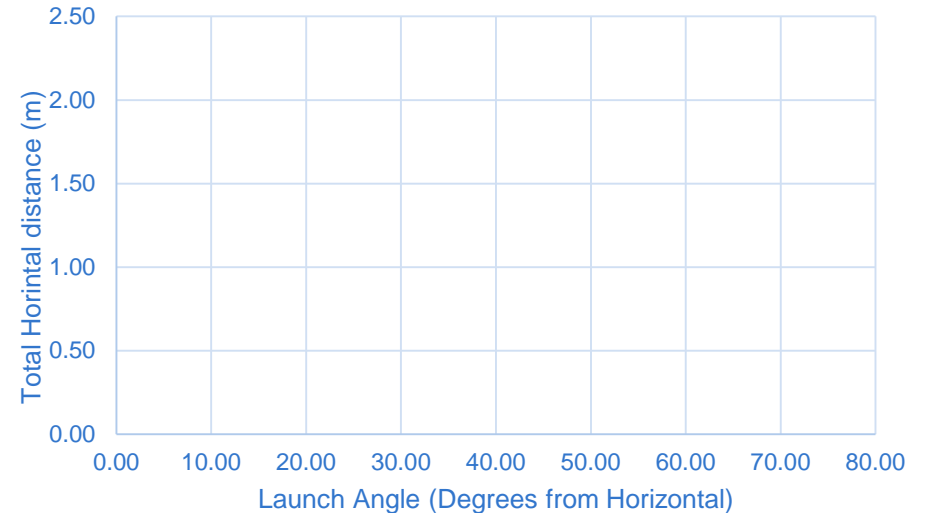


Table 2. Effect of Launch Angle on Projectile Displacement

Launch Angle (Degrees from Horizontal)	Total Horizontal Distance (m)			
	22.50			
45.00				
67.50				

Controlled Variables: Throw arm length, launch power, wind conditions



Effect of Launch Power on Projectile Displacement



Aim: To determine the influence of launch power on projectile displacement.

Hypothesis:

Method: Using a “fair test method” alter the launch power and record resultant horizontal projectile displacement .



Results:

Discussion:

Conclusion:

Table 3. Effect of Launch Power on Projectile Displacement

Launch Power (No. of Rubber Bands)	Total Horizontal Distance (m)			
	Trial 1	Trial 2	Trial 3	Av
1				
2				
3				

Controlled Variables: Launch angle, throw arm length, wind conditions

Fig 3. Effect of Launch Power on Horizontal Projectile Displacement

