

## Build a Model Catapult Worksheet

## Data Table A. Mass of Projectile

Projec- tile	Rubber Stopper Mass:	Cork Mass:	Observations
Trial	Distance (m)		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Avg.			

## Data Table B. Length of Lever Arm

Projec- tile:	Lever Arm: cm	Lever Arm: cm	Lever Arm: cm
Trial	Distance (m)		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Avg.			

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## **Post-Lab Questions**

- 1. Consider the model catapult from Part 1.
  - *a*. What acts as the fulcrum?
  - b. When the lever arm is released, what is the load that is being moved?
  - c. When the lever arm is released, what provides the applied force that moves the load?
- 2. How did the mass of the projectile affect the distance it traveled in Part IIA?
- 3. How did the length of the lever arm affect the distance the projectile traveled in Part IIB?
- 4. How does the relationship between the fulcrum and the load explain the results from Part IIB?
- 5. List the modifications made to the model catapult in Part III and the reason for each.
- 6. Explain why you chose the projectile used for the Design Challenge.
- 7. Which was more important in redesigning the model catapult-accuracy, precision, or both equally important?
- 8. Did the redesigned catapult achieve the desired results? If not, what other improvements might be made?