## **Forces in Baseball**

**GRADES** 6-8

	Throw 1 = 10 meters			Throw 2 = 10 meters		
Mass of ball: 0.145kg	Time(s)	Velocity (m/s)	Kinetic Energy (Joules)	Time(s)	Velocity (m/s)	Kinetic Energy (Joules)
Student 1						
Student 2						
Student 3						
Student 4						
	Thi	row 3 = 10 me	ters	Th	row 4 = 10 me	ters
Mass of ball: 0.145kg	Thı Time(s)	row 3 = 10 me Velocity (m/s)	ters Kinetic Energy (Joules)	Thr Time(s)	row 4 = 10 me Velocity (m/s)	ters Kinetic Energy (Joules)
Mass of ball: 0.145kg Student 1	Thı Time(s)	row 3 = 10 met	ters Kinetic Energy (Joules)	Thr Time(s)	row 4 = 10 met	ters Kinetic Energy (Joules)
Mass of ball: 0.145kg Student 1 Student 2	Thı Time(s)	row 3 = 10 met	ters Kinetic Energy (Joules)	Thr Time(s)	row 4 = 10 met	ters Kinetic Energy (Joules)
Mass of ball: 0.145kg Student 1 Student 2 Student 3	Thı Time(s)	row 3 = 10 met	ters Kinetic Energy (Joules)	Thr	row 4 = 10 met	ters Kinetic Energy (Joules)

1. What percent of the Aroldis Chapman throw (105.1 MPH) was your fastest pitch? Example: If you threw at 45 MPH/150 MPH = .3 or 30%, your fastest throw was only 30% as fast as Aroldis Chapman's throw.



Class:
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Graph the kinetic energy vs. your velocity for each throw from slowest to fastest.



2. Based on your data/graph, explain the relationship between velocity and kinetic energy by making a claim about the relationship. Support your claim with evidence and reasoning.

Claim: What is the relationship between velocity and kinetic energy?

**Evidence:** Record and reference in words any data that supports your claim.

**Reasoning:** Explain why your claim is supported by evidence and scientific ideas. Use the kinetic energy equation to support you.



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