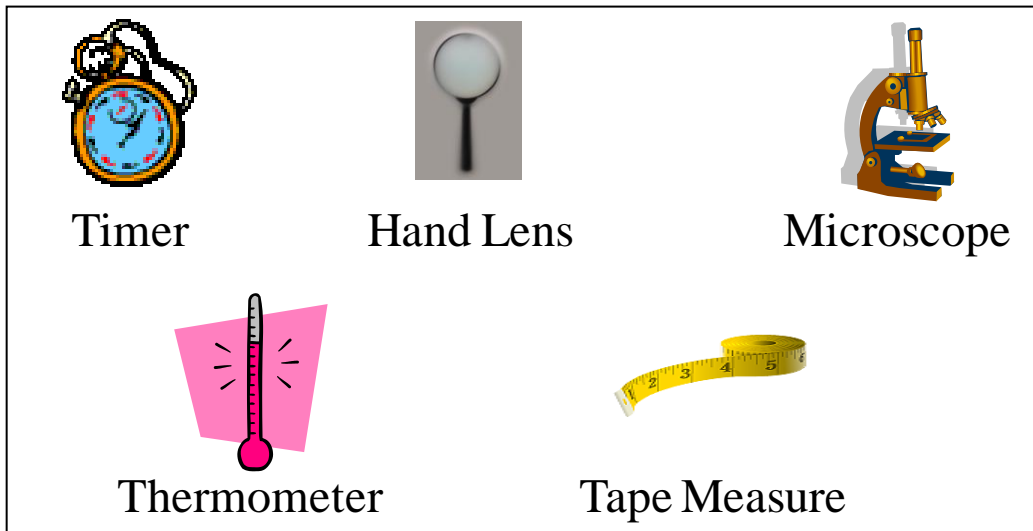


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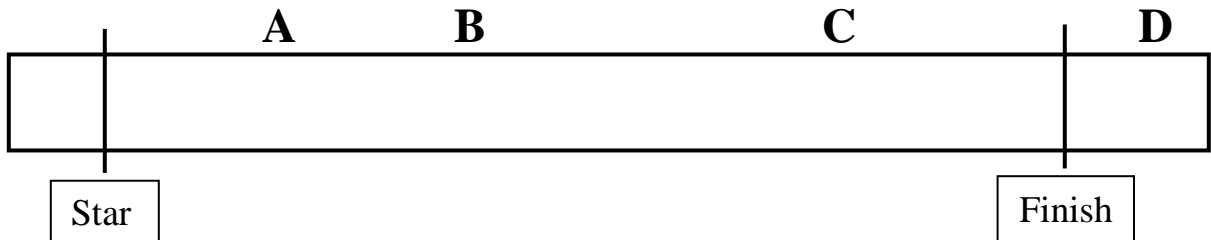
“Motion and Design” Summative Assessment



1. Which **two tools** could be used to collect the data needed to calculate the average speed? **Describe how each tool is used.**

A standard race car was tested using 2, 4, and 8 turns on a rubberband to measure the distance it would travel. The distances were labeled A, B and C.

The track looked like this:



2. Which letter best represents the distance the racecar traveled when the rubber band was wound two times? _____

Explain your choice.

3. About how many turns of the rubber band would it take for the racecar to travel across the finish line and stop at letter D? _____

Explain your answer.

Qualifying Trial Data

		Plan 1	Plan 2	Plan 3	Plan 4
Variables	Number of turns on the rubber band	8	10	10	12
	Number of blocks carried	2	2	3	3
	Total distance racecar traveled (cm)	379 cm	490 cm	410 cm	445 cm
Results	Time to cross the finish line at the 400 cm mark (rounded to the nearest second)	Did not cross the finish line	3 seconds	5 seconds	4 seconds

4. Look at the data chart above. What force causes the vehicle to move?

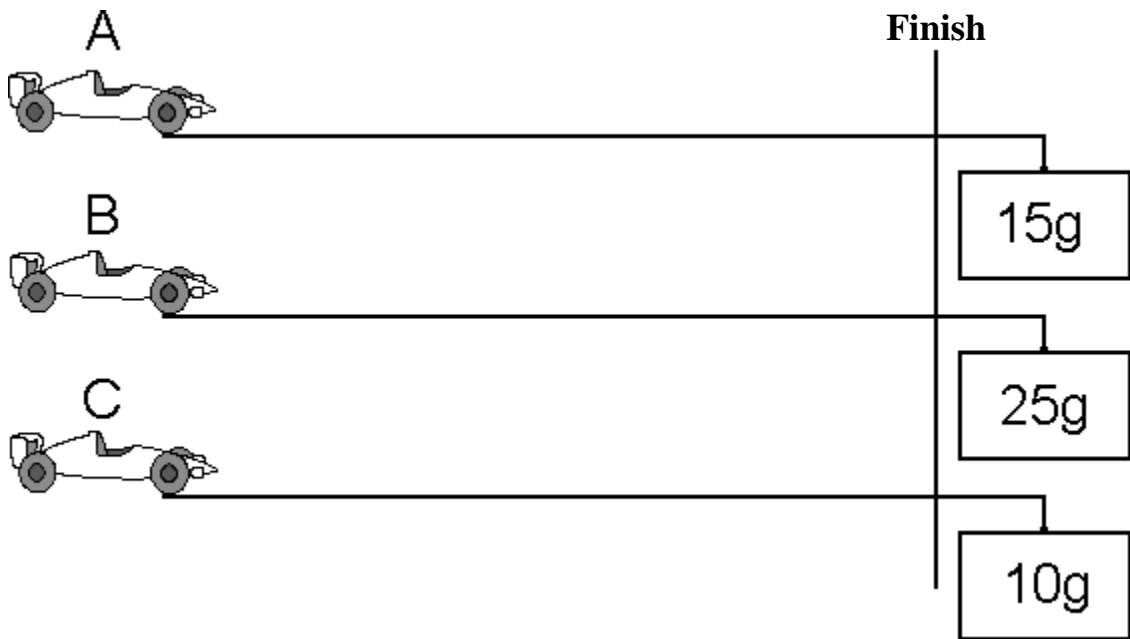
5. Analyze the data from the Plans in the chart above.

a. Describe **one difference between Plans**. Explain why the difference changed the race results.

b. Describe **another difference between Plans**. Explain why this difference changed the race results.

c. How are the rubber band energy and the distance the car travels related to each other?

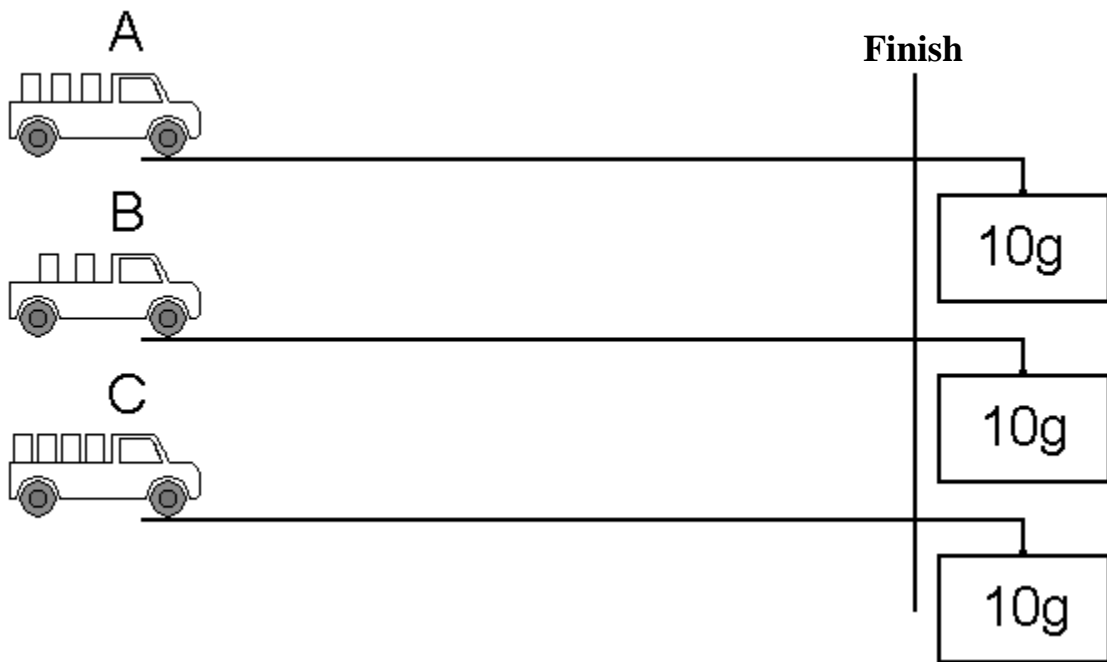
Falling Weight System 1



6. Which racecar would cross the finish line first? _____

Explain your answer.

Falling Weight System 2



7. Which truck will cross the finish line first? **Explain why.**
