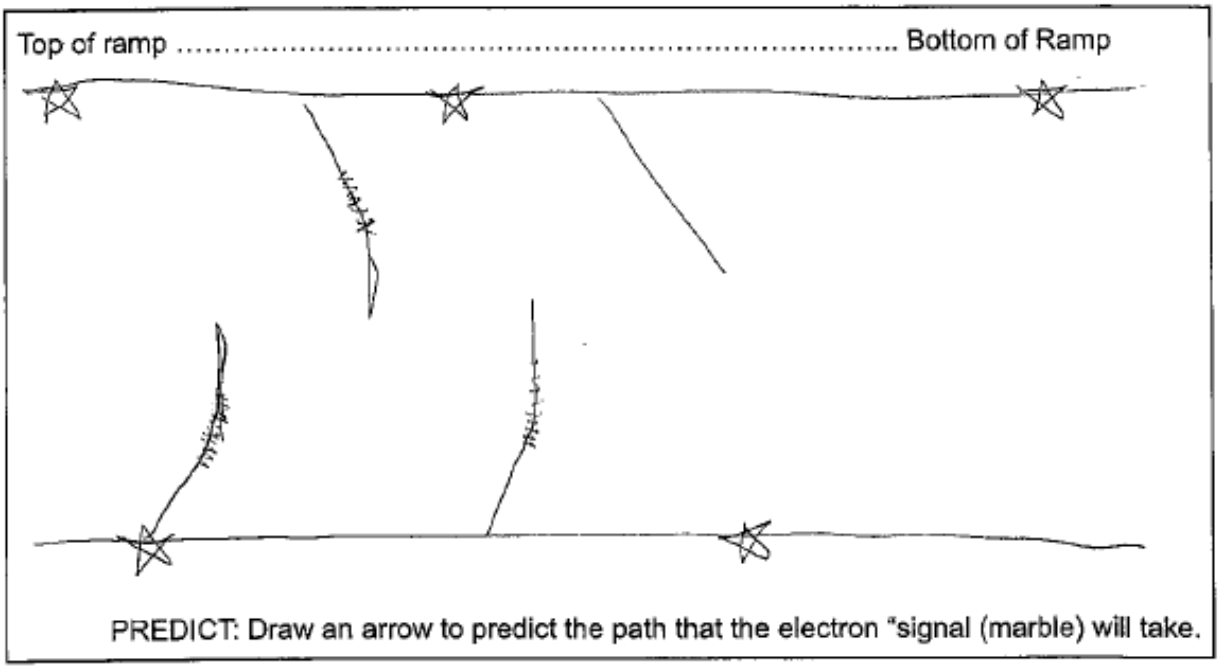
IMAGINE & PLAN: Memristor Model Plan Sketch

Your model should show the atomic scale structure of a material that can act as a memristor, where the configuration of the atoms inside is what determines the rate of signal transmission. In your model, the time it takes the marble to go down the ramp represents the signal transmission rate.

Your initial desired signal transmission rate is 3.5 seconds (+/- 0.5 seconds)

Examine the materials available for construction, then sketch your plan here: **Label all materials.**



TEST

Set up your model on the testing station in the classroom. Use the timer to measure the amount of time needed for the marble to travel down the ramp, simulating the signal transmission. Perform three trials, record your results, and then determine your average signal transmission time:

	Trial 1	Trial 2	Trial 3	Average
Time (sec)	3.47	3.43	3.63	3.57

IMPROVE

Discuss as a team: Was your time too high? Too low? What could you change to make your model fit the desired criteria more closely (smaller size or marble time closer to the specified desired time? ***Adjust your design based on your new plan. Update your sketch above.***

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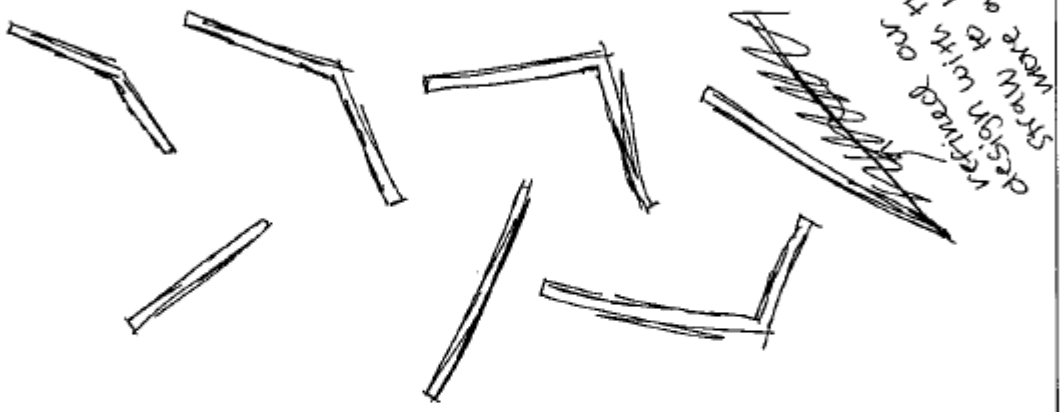
Top of ramp ..... Bottom of Ramp



PREDICT: Draw an arrow to predict the path that the electron "signal (marble) will take.

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	Trial 1	Trial 2	Trial 3	Average
Time (sec)	3.5 s	3.37 s	3.36 s	3.41 s

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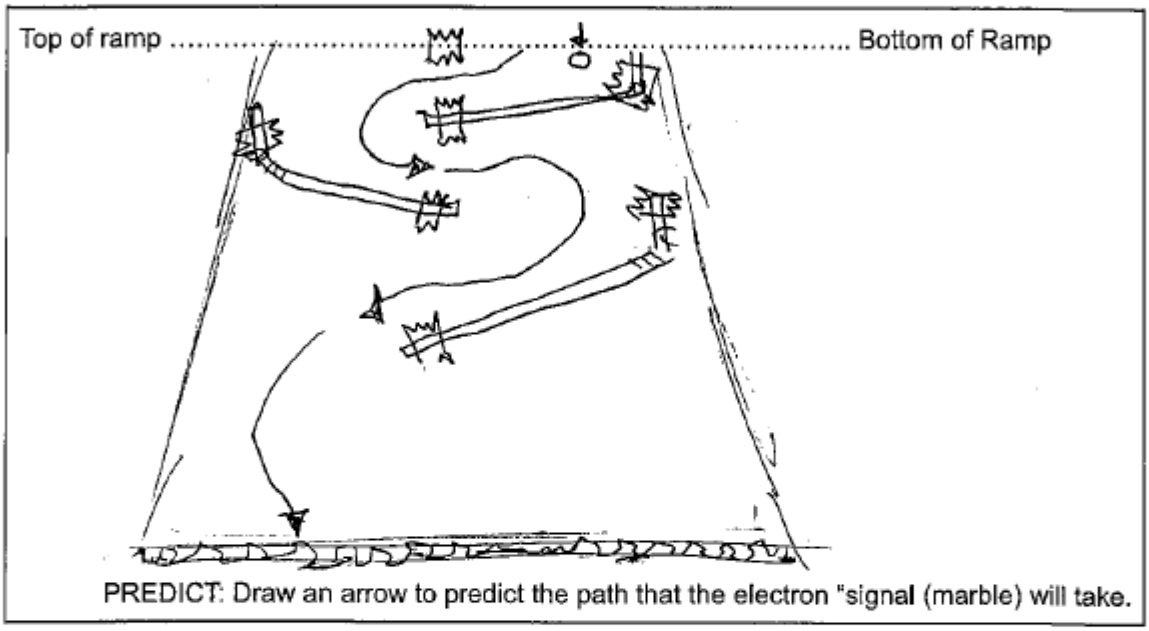

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	Trial 1	Trial 2	Trial 3	Average
Time (sec)	3.61	3.40	3.56	3.42

IMPROVE

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