**Sticky Tape Experiment**

**Real Life Problem:**  The day of the school dance is finally here!  You and a few friends are hanging signs in the school gym.  You suddenly notice that you're running out of tape. So, you call everyone together and ask them to look around the school building for more tape. Everyone returns a few minutes later with many different kinds of tape. You wish you knew how "sticky" these tapes are so the posters won’t fall down!

Which one should you use?  Are they all made the same? Do they all have the same stickiness? How could you find out? In this experiment, you will be examining the stickiness of various kinds of tape by doing a simple test, the kind of testing that inventors and manufacturers use when they are working with new products. You should be able to determine how well the tape performs if you wanted to use the tape to hang something on a wall.

1.  What materials do we already have to conduct this sticky tape experiment?

2. What are some factors that might affect the stickiness of the tape?

3. How can we set up/design this experiment?  Draw a sketch of how you plan to set up the materials.

4.  What data will we collect to get the answer to our question? What will we measure?

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**Title of the Experiment**

**Question**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Testable Hypothesis:**

(An educated guess/prediction about what will happen based on what you already know and what you have already learned from your research.)

If\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials:**

duct tape, clear packing tape, masking tape, meter sticks, stopwatches,

rulers (with groove in the center), marbles, textbooks

**Procedure:**

1. Gather all materials.
2. Stack 3 textbooks on top of each other.
3. Lean the ruler against the text books, creating a ramp. Make sure the ruler is secured with tape.
4. Place the tape (sticky side up) on the floor at the end of the ruler. Get the stopwatch ready.

Roll the marble down the ruler. Record the time it took the marble to stop and how far

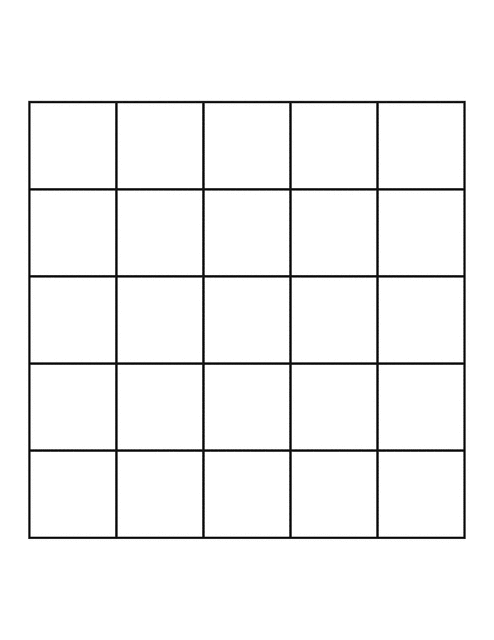
it traveled.

1. Perform 3 trials for each type of tape. Record results in the chart below. Then find the averages.

**Results:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Tape | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Tape | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Tape |
| Trial  1 |  |  |  |
| Trial  2 |  |  |  |
| Trial  3 |  |  |  |
| **Mean (Average)** |  |  |  |

Graph of the Results:



**Conclusions:**

(A summary statement based on the results of the experiment.  Scientific conclusions are based on

verifiable - true or accurate - observations)

1.  According to your data, which type of tape was the stickiest?

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2.  Was your **hypothesis** (educated guess/prediction) correct?  Why or why not?

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3.  If you could go back and do this experiment again, what is one thing that you would change or do differently in order to make the experiment run better?

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4. What was the **independent variable** in this experiment? (the factor in the experiment that was purposely changed/altered/manipulated by the experimenter)

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5.  What was the **dependent variable** in this experiment? (the factor that changed as a result of the manipulation of the independent variable)

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6.  Name a few **constants** in this experiment. (things that are purposely kept the same during the experiment)

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