



Name: _____

Sticking Together

A Little More About KMT

All matter is made up of molecules and those molecules are constantly in motion. This theory is called _____
_____.

A **FORCE** is a _____ or a _____ that causes
_____.

Just as **GRAVITY** draws all bodies in the universe towards each other unless another force acts upon them, molecules are drawn to each other as well. Another part of Kinetic Molecular Theory states that there is a **FORCE OF ATTRACTION** between molecules that make up matter. We call this attractive force **COHESION**.

COHESION: The attractive forces among particles of a substance. Cohesion increases when the molecules are closer together.

PART 1: Penny Pinchers

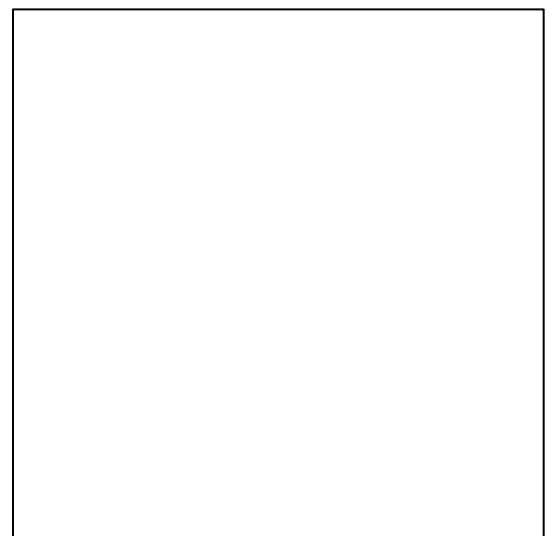
MATERIALS

- Penny
- Eye Dropper
- Beaker
- Water



PROCEDURE

1. Place penny on flat surface.
2. Count the number of drops of water that you can drip onto the penny before it overflows
3. In the space at the right draw and label a **scientific diagram** of the penny after dripping the water onto it.
4. How many drops were you able to get onto the penny?



5. Why does the water stay on the penny the way that it does?

PART 2: Let it Slide

VISCOSITY: The resistance of a fluid to flowing and movement

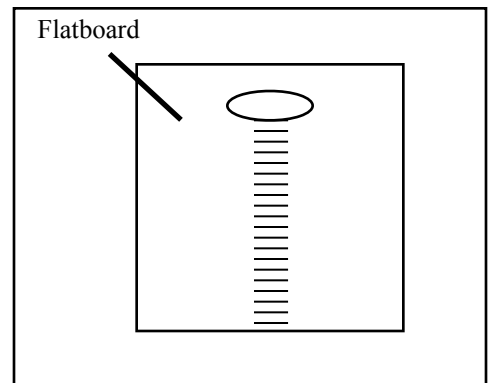


MATERIALS

- Water
- Corn syrup
- Chocolate Sauce
- Honey
- Marker
- 3 Science Probe 8 Text Books
- Paper Towel
- 15 ml Measuring Spoon
- Flatboard
- Timer
- Tape Measure

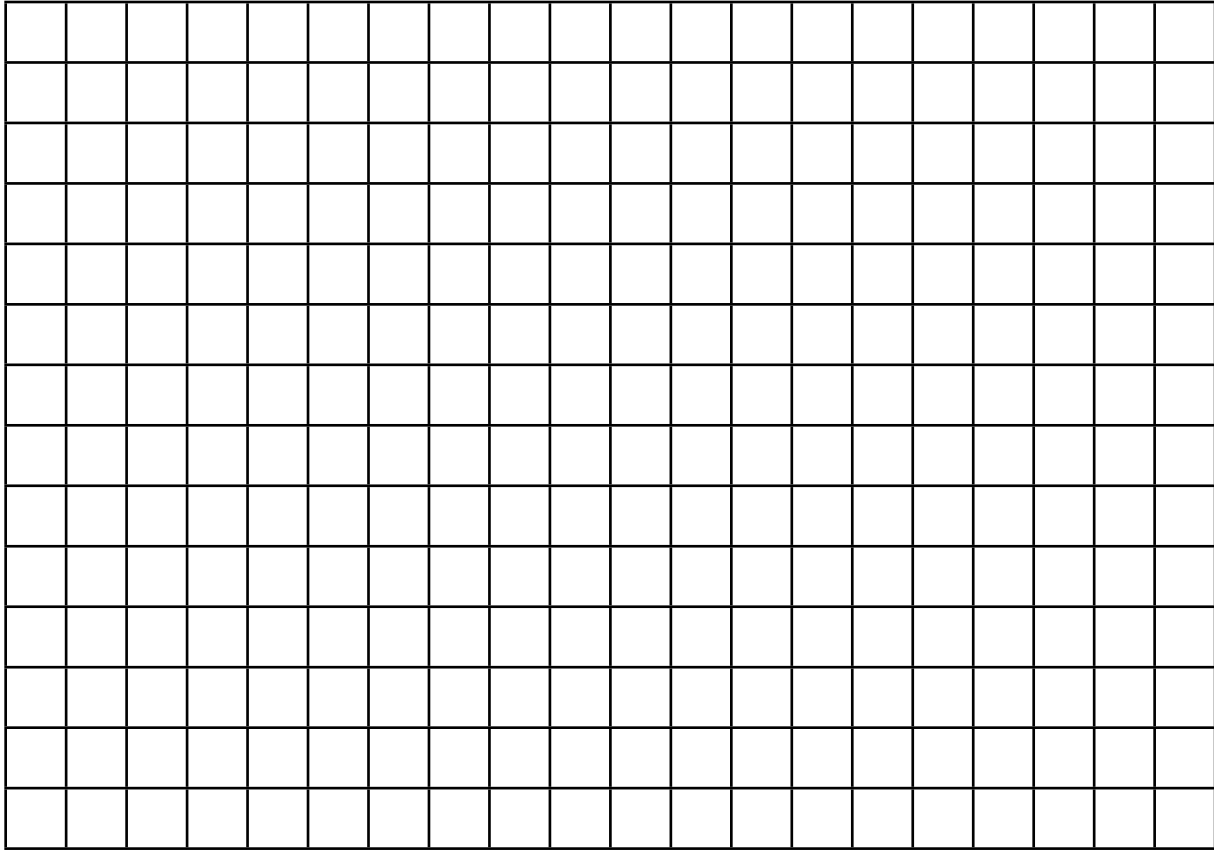
PROCEDURE

1. Measure and mark 1cm lines from one edge of the flatboard all the way to 20 cm.
2. Mark a circle at the 20 cm point.
3. Stack 3 Science Probe 8 Textbooks.
4. Tilt flatboard so that one edge aligns with edge of text books and the second edge is on your table.
5. Lay paper towel under the edge of the flatboard on the table.
6. Measure 15 ml of Corn Syrup into the measuring spoon.
7. Pour the corn syrup onto the flatboard in the circle.
8. In the table below measure and record the distance traveled by the corn syrup every 5 seconds for 30 seconds.
9. Thoroughly clean and dry the corn syrup off of the flatboard.
10. Repeat Steps 5-9 using Chocolate Sauce, then Honey, then Water.



Material	5 Sec.	10 Sec.	15 Sec.	20 Sec.	25 Sec.	30 Sec.
Corn Syrup						
Chocolate Sauce						
Honey						
Water						

11. Use the graph paper provided to make a line graph comparing the **RATE OF FLOW** of the fluids tested



12. Which material had the greatest resistance to flowing?
Which had the least resistance to flowing?

13. Which material could we say had the greatest attraction between its molecules (the greatest **COHESION**)?

PART 3: Heated to Go

Design and carry out an experiment that answers the question:

"Will the temperature of a fluid affect its rate of flow?"

More specifically:

"Will warm corn syrup flow faster than cold corn syrup?"

Criteria

Partners

You will work with classmates to carry out this experiment. Individuals will hand in their write-up with **ONE** name at the top.

Name Date Title

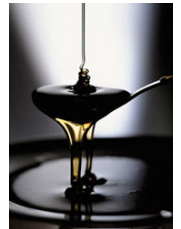
Displayed at beginning of Write-Up. STB in effect.

Purpose

The purpose of your experiment is clearly stated and includes the **INDEPENDENT VARIABLE** that you will be testing.

Hypothesis

Your Hypothesis is a testable statement, not a question.



Materials

- An unordered/bulleted list
- Includes ALL materials needed to carry out experiment.

Procedure

- An ordered/numbered list
- Clearly states ALL steps needed to carry out experiment
- Can be replicated by any scientist in the world
- Includes at least one DIAGRAM illustrating how you set up your experiment. All conventions for a Scientific Diagram apply.

Data/Results/Observations

- Include both **QUANTITATIVE DATA** and **QUALITATIVE OBSERVATIONS**
- Include a **TABLE** of your **QUANTITATIVE** results
- Include a **GRAPH** of your results. All conventions for a **GRAPH** apply
- Include a **STATEMENT OF FINDINGS** summing up your **QUANTITATIVE DATA**.

Conclusion

- 2 sentences
- 1st sentence is 4 words
 - My hypothesis was correct.
 - My hypothesis was incorrect.
 - My results are inconclusive.
- 2nd sentence explains first sentence with relation to hypothesis

Question

After the Conclusion of this experiment answer the question "How does Kinetic Molecular Theory help to explain the different effect of cohesion in warm and cool fluids that you observed in this experiment?"

Evaluation

Students will receive 30 Marks for completing this experiment. The STB is in effect so students may receive a mark of 31 on this assignment.

Students will lose marks for the following:

Description	Demerits
Partners: More than 1 names on assignment	15
Major Missing: Including a missing section or part thereof; table; diagram; question, etc, title.	5 each
Minor Missing: Including missing material; diagram convention; Name; date; etc.	1 each
Content Errors: Including unclear descriptions of procedure; errors in table, diagram or graph; incorrectly stated purpose, hypothesis, statement of fact, conclusion; etc.	2 each
Out of Order *Please note: The only part of this assignment that may be out of the order outlined in the criteria is the GRAPH. This may be appended to the back of the Experimental Write-up IF IT IS DONE ON ITS OWN SHEET OF GRAPH PAPER.	5
Minor Care and Attention: Some part of Write-up is illegible; table, or diagram not neat; etc.	2 each
Layout Name and Date above title; Title Stands out; Headings: Purpose, Hypothesis, Materials, Procedure, Data/ Results/Observations, Conclusion underlined and aligned left	½ Each
Major Care and Attention: Write-up displays a general lack of concern for neatness or for completing an assignment properly for handing in; It's a MESS	15
Extra or Incorrect Staples	1 each
Late	10% per day

DUE DATE: TBA