

# Viscosity Lab Grading Rubric

LT: Identify evidence which supports kinetic theory by measuring how heat affects the viscosity of honey.

Name _____
Date _____ Period _____ Score ____/28 ÷ 7 = ____ / 4

Category	4	3	2	1
Heading / Title Purpose / Hypothesis ____ / 4	Hypothesis provides a research-based rationale for the prediction. The research source is cited.	Heading Title Purpose Hypothesis clearly predicts how speed and mass influence force.	One of the required elements is missing	Two or more of the required elements are missing.
Materials/ Procedure ____ / 4	Exceptional detail – includes drawing of set up (this may be included with the results / observations)	<u>All</u> materials are listed and adequately identified (drawing/description) so another person could find all of the supplies <u>All</u> steps are detailed so another person could repeat your technique exactly	Material are <u>partially</u> listed and/or described. Steps are <u>partially</u> described so a reader would be able to repeat most steps accurately	Materials and/or steps are missing and a reader would be misled by reading your lab.
Results ____ / 4	In addition to a high quality data table Additional comments are included which add to the understanding of the data.	One data table is included that clearly identifies the temperature and the cms the honey flowed for 10 seconds. <u>A ruler is used.</u> At least 3 additional observations are included	Data is included– either no table was used or a ruler was not used. 1-2 additional observations	Data is missing and/or inaccurate. No table was used. No additional observations
Graph ____ / 4	In addition to an exceptionally well-constructed graph of the temperature v flow, additional annotation is provided to help clarify the effect of temperature	Title Each axis labeled with units – temperature in °C on x-axis and flow rate (cm/10 sec) on the y-axis. Data is plotted accurately. <u>A ruler is used</u>	One or more elements for a proficient score are missing. Graph still communicates data.	Graph looks like it was put together just to get it done with no intent on communicating the data accurately.
Note New Value	8	6	4	2
Analysis Paragraph ____ / 8	Level 4: in addition to thoroughly completing levels 1-3, the discussion continues to include detailed additional insight on how heat influences viscosity. Extensions of how viscosity may influence other materials. (lava, motor oil, paints, etc) Possible sources of error are <u>discussed</u> (not just mentioned)	Topic sentence ____ A general statement how honey was used to identify the relationship between temperature and viscosity. Level 1: ____ Viscosity is resistance to flow ____ As flow decreases/viscosity increases Level 2: ____ Temperature affects viscosity ____ Kinetic theory states the heat causes particles to speed up/spread out which relaxes the material Level 3: ____ The following sentences <u>clearly interpret the data from the graph and additional observations to identify and analyze the affect of heat on flow rate</u>	One element is missing	Two elements are missing.
Note Value	4	3	2	1
Conclusion ____ / 4	In addition to the proficient requirements, paragraph includes insightful additions to the rationale to the discussion of the hypothesis, what you learned, and the “I wonder”. Clear reference to scientific principles and data should be included.	____ Topic sentence restates the purpose ____ Acceptance/rejection of the hypothesis is clearly identified. ____ A brief explanation of why the hypothesis was accepted/rejected. ____ A logical “what was learned” statement related to the data/purpose. ____ I wonder comment is a logical next step to further research that is related to the original purpose.	One element of a proficient response is missing.	Two or more elements of a proficient response are missing.

