



Viscosity Funnel Lab

In this lesson, students will investigate the concept of viscosity as it relates to some common food products. Students will gain an understanding of properties that affect viscosity and the importance of viscosity in food related industries.

Primary Learning Outcomes

What is viscosity and what is it a measure of?

Assessed Georgia Performance Standards:

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science.

SCSh2. Students will use standard safety practices for all classroom laboratory and field investigations.

SCSh3. Students will identify and investigate problems scientifically.

SCSh4. Students will use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.

SCSh5. Students will demonstrate the computation and estimation skills necessary for analyzing data and developing reasonable scientific explanations.

SCSh6. Students will communicate scientific investigations and information clearly.

SCSh7. Students will analyze how scientific knowledge is developed.

SCSh8. Students will understand important features of the process of scientific inquiry.

Procedures/Activities

Step: 1 Duration: 30 minutes

Review the concept of viscosity with students including the definition as well as factors that affect viscosity.

Step: 2 Duration: 40 minutes

Students are to conduct an experiment in which the viscosity of several food products is compared. Students are able to choose the method by which the viscosity comparison is made. Students can choose to measure either how long a certain quantity of each material flows through the funnel or can measure flow at pre-determined increments. Because viscosity is defined as the resistance to flow, those food items that flow the slowest have the highest viscosities.

Step: 3 Duration: 20 minutes

Students will compile data to formulate a graph comparing the flow rate of each of the four food products tested. Flow rate and viscosity are negatively related, consequently, the slower the flow rate through the funnel, the higher the viscosity.

Materials and Equipment

1. Four food products of differing viscosities. Suggestions include ketchup, yogurt, corn syrup, and cooking oil.
2. Funnel with at least ½” opening.
3. Graduated cylinder to measure flow of each product.

Total Duration

1 hour 30 minutes

Assessment

Students will be assessed on their participation in the lab, as well as on the graphs and data tables formulated during the lab activity.

