

a WOW Lab

BLUEPRINT

The Siphontific Method

Lesson Logistics

Learning Outcomes

Grades 7-9
Mixtures and Solutions
Fluids
Water Systems on Earth

Class Organization

The demonstration should be set up in advance and performed for the class. The *Student Handout* contains questions that can be answered after viewing the demonstration.

Divide the students into groups of three or four for the student activity. Students should work through the instructions provided in the *Student Handout*. A key part of the activity is comparing results with other groups, which should be coordinated by the teacher.

Ensure that each group has a *Student Handout*, a squeezable ketchup bottle, two beakers or glasses, and plastic tubing. Each group will have either three different lengths of 1/4 in. wide plastic tubing, three different widths of 2 ft. long plastic tubing or one piece of 1/4 in. wide, 2 ft. long plastic tubing.

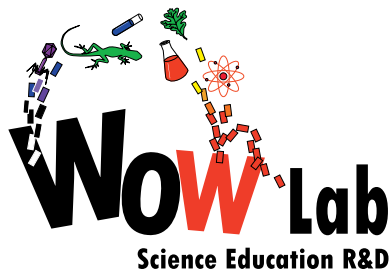
Notes

Access to a sink is required.

The basic arrangement given for the demonstration can be modified to suit the location and materials available. The important aspects of the arrangement are to ensure that the bottles remain stationary and the plastic tubing can drape over a peak of at least 2 m.

Various tubing scraps of different sizes may be required to ensure that the plastic tubing fits snugly on the sink faucet.

Two of the pop bottles required for the demonstration may be reused for the additional demonstration.



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Further Exploration

The student activity is only a suggestion of the variables that can be tested. More inquisitive students may find it challenging to experiment with their own concepts using the scientific method. There are endless variations for this activity and many different skills that can be taught. The ideas below can be used as a starting point.

The scientific method...

Ask a question

Do background research

Construct a hypothesis

Test the hypothesis

Review and analyze the data

Report results

Specifically...

What affects the rate that the siphon empties?

The large siphon activity should provide a conceptual understanding.

Students will suggest potential variables that affect the flow rate. Different students will come up with various hypotheses.

Either by following prepared instructions or designing experiments.

Convert the raw data into meaningful results. Draw conclusions.

Was the hypothesis correct?