MOLECULAR VOLUME

LAB PP 5
From Flinn CHEM FAX #2050.

PURPOSE
The purpose of this experiment is to use the concept of a mole to estimate the number of molecules in a granule of sugar and the volume of one molecule of sugar.

EQUIPMENT/MATERIALS
Sucrose (table sugar), C\textsubscript{12}H\textsubscript{22}O\textsubscript{11}, 342.3 g MW
Weighting dishes
Balance (0.001 g precision)
Ruler, 1 mm precision
Beaker, 600 mL
Calipers, Vernier (optional)

SAFETY
- Always wear an apron and goggles in the lab.
- Never consume any material stored or used in a science laboratory. Food and household items become laboratory chemicals when brought into a laboratory setting.

PROCEDURE
1. Measure out one mole of sucrose. Place the mole of sucrose in a 600 mL beaker.
2. First determine the number of moles of sucrose in an average sugar crystal and then determine the approximate volume a sucrose molecule occupies in its crystal structure.
3. Write the structural formula for sucrose.