Functional Groups in Organic Chemistry

Students are given a set of unknown chemicals and identify their unknown using a series of chemical tests. The module can be tailored based on the needs of each class.

**Intended Audience:** High School Regents Chemistry Students

This experiment is aimed at students in high school learning about chemical changes and reaction types. The experiment would also be suitable for an introductory college laboratory.

**Recommended Student Background:** Students should read the introduction and have some familiarity with Table R of the Regents Chemistry Reference Tables.

**Duration:** 40 minutes

**Correlation to green chemistry:** all organics used in this laboratory experiment are non-toxic and naturally occurring

**Two versions of the lab are provided.** In both versions, the lab sequences students through a series of simple chemical tests, leading to identification of an unknown. In the basic level instruction, a flowchart and checkbox data collection table simplifies the task. The advanced level instruction may be useful as an introduction to an organic synthesis, purification and analysis lab, particularly for students who may not have taken Regents Chemistry prior to AP Chemistry. The laboratory activities are identical to the basic level, but there is far less written guidance. Students follow the flow chart, create their own data collection scheme and make a conclusion based on the test results. Students may be assigned more than one unknown in order to broaden their experiences and hone their identification skills. The laboratory write-up for the advanced level laboratory is a stand-alone report generated by the student.

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