EXTRACTION OF SPEARMINT OIL FROM MINT LEAVES
STUDENT VERSION

EQUIPMENT
10 Ring Stands
10 Clamps
10 Mortar & Pestles
10 Funnels
Filter Paper
Safety Goggles
Collection Bottles
10 50 mL Beakers
2 Hot Plates
2 Sand Baths
Gas Chromatograph

SUPPLIES
Hexane (10 mL/group)
Fresh Mint Leaves
Oil of Spearmint extract (5% solution in hexane)

PURPOSE
To extract spearmint oil from fresh mint leaves and compare the gas chromatograph of extracted spearmint oil with commercially available spearmint oil.

PROCEDURE
1. Place a handful of fresh mint leaves into a mortar, add a pinch of sand and grind the leaves into a pulp.
2. Slowly add 10 mL hexane to pulp and continue to macerate the leaves until liquid portion turns greenish brown.
3. Set up a funnel and filter the hexane extract into a 50 mL beaker to remove pulp.
4. Place the beaker with the filtrate into a sand bath in the hood and carefully evaporate off the hexane until approximately 1 mL remains.
5. Cool the beaker and transfer the distillate into a marked collection bottle. Collect the samples of the entire class into one bottle and evaporate this sample down to 1 mL.
6. Following your teacher's instruction, inject one microliter of sample into the gas chromatograph. Compare your peaks with the peaks of commercial spearmint oil.

ANALYSIS
1. How does your sample compare with the commercial spearmint oil?
2. What are the similarities and their significance? What are the differences and their significance?
3. What substance is present in the greatest quantity in both samples?

Prepared by: Sandy Comouche, Notre Dame HS
Luann Smith, Eagle Rock HS