

Chemistry

Scarsdale High School

Matter Separation Techniques

Objective:

Devise a method to determine the quantity of sugar and sand in all three of the mixtures provided.

Task:

Perform the experiments described in the attached lab procedure.

Lab Report:

1. Introduction
2. Procedure
3. Percent Composition Calculations
4. Conclusion
5. References

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PERCENT COMPOSITION: SUGAR AND SAND

This experiment is an introduction to matter. There are three mixtures of the “unknown” (a mixture of sand and sugar) and the objective is to determine the percent composition of each mixture. Both substances are familiar and you should be able to suggest a procedure for separating the two and for determining the percent (%) sand and percent (%) sugar, by weight, in your unknown sample.

You will have available to you the tools of the chemistry laboratory that include a hot plate, balance, beakers, funnels, filter paper, scapula, wash bottle, and water.

PRELAB

In the laboratory you will take 8 - 10 g of the mixture which contains anywhere from 30% to 70% sand.

- 1) Write a **DETAILED** procedure or construct a flow chart which describes your method to separate the sand and sugar in the unknown mixture. Your objective is to determine the percent of sand by mass in the mixture.
- 2) Prepare a data table, which lists all of the data entries you will need to calculate the percent sand in your sample.
- 3) Set up the calculation method you will use with the numbers you generate.

HELPFUL INFORMATION

Solubility of sugar in water:

0° Celsius	-----	179 g / 100 ml
100° Celsius	-----	487 g / 100 ml

Sugar decomposes at approximately 185° Celsius