

Biofuel Worksheet

Data Table A.

Control		
Time (min)	Gas Bubble Dimensions (cm × cm)	Observations
10		
15		
20		
25		
Cornstarch		
Time (min)	Gas Bubble Dimensions (cm × cm)	Observations
10		
15		
20		
25		
Sucrose		
Time	Gas Bubble Dimensions	Observations
(min)	$(\mathbf{cm} \times \mathbf{cm})$	
10		
15		
20		
25		

Part A. Post-Lab Questions

- 1. Consider the products of fermentation as described in the *Background* section.
 - a. Which product caused the bags to expand during the experiment?
 - *b*. Where was the location of the gas bubble in the bag?

c.Why do you think the gas collected in this location?

2. Why is it necessary to use warm water to mix the yeast and food source?

© 2019, Flinn Scientific, Inc. All Rights Reserved. Reproduction permission is granted from Flinn Scientific, Inc. Batavia, Illinois, U.S.A. No part of this material may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to photocopy, recording, or any information storage and retrieval system, without permission in writing from Flinn Scientific, Inc.

- 3. Examine the gas bubble dimensions from the data table.
 - a. Which food source yielded the greatest quantity of gas?
 - b. Explain why cornstarch and sucrose did not produce the same amount of gas.
- 4. Why do you think a small gas bubble was visible in the control bag?
- 5. What is the purpose of the control in this experiment?

Part B. Post-Lab Questions

1 How did your group determine the amount of carbon dioxide gas collected during your experiment?

- 2. Compare your results with a group that used a similar method of CO_2 collection.
 - *a*. Explain the similarities and differences in the results.
 - b. Describe possible errors involved and their effect on the results.
- 3. Compare your results with a group that used a different method of CO_2 collection.
 - *a*. Which group was able to collect more carbon dioxide gas? (*Reminder*: $1 \text{ cm}^3 = 1 \text{ mL}$)
 - b. Which method do you think is a more accurate way to measure the amount of CO_2 gas produced?
- 4. Although not visible or tested for, what other compound was present inside the tube?
- 5. The release of gases from burning fossil fuels is a factor in the rise of the Earth's average surface temperature, known as global warming. How might using more biofuels impact global warming?