

GUESTHOLLOW'S Chemistry WORKBOOK

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Napoleon's Buttons

Chapter 1 Peppers, Nutmeg, and Cloves

1. In medieval Europe, which spice was so valuable it could buy the freedom of a feudal laborer?

2. Label the locations that are the major producers of pepper.

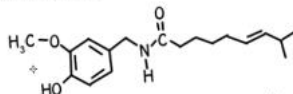
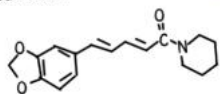


3. What medieval city is now known as Istanbul?

4. Part of the reason the Age of Discovery began was due to the demand of _____

5. Looking at the chemical formula for piperidine, how many carbon atoms does it contain? Hint: Look at the little subscript number right after the C (for carbon) in the formula.

6. Label the chemical structures. Which one is piperidine and which one is capsaicin?



World-wide production from greatest to least: corn, wheat, rice.

_____ of _____ joined together.

_____ stides?

_____ mans.

_____ "fluffy" mashed potatoes?

_____ plate masher with square holes

7. Which potato makes a better mashed potato? Redskin potatoes or russets?

8. After hours of cooling, what happens to the starch molecules in pea soup?

Note to parents & teachers:

Don't feel like you MUST use the workbook pages. They were created for those of you who wish to assess your student's reading assignments and to help train students to look through a text for information. They are also designed to help students retain what they've read.

Use these materials with discretion. The idea is to help your student pay attention to some of the reading assignments, but NOT to bog him/her down with busy-work. The goal is to find the right balance, without killing the joy of reading. Every family and student is different! If your student balks at this type of assignment (because s/he is a reluctant reader or has special needs), you may want to skip these questions, or you may wish to use them during read-aloud sessions, to assess if your student is comprehending the material and/or paying attention.

This study guide does NOT cover every book. Please see the books and materials page to see which books are covered in the workbook:

<https://guesthollow.com/chemistry-in-the-kitchen-book-and-resource-list/>

I recommend keeping completed workbook pages in a 3-ring binder.

You may wish to instruct students to look over the workbook pages BEFORE reading, so they know what to look for and will be able to more easily fill out the workbook pages as they read.

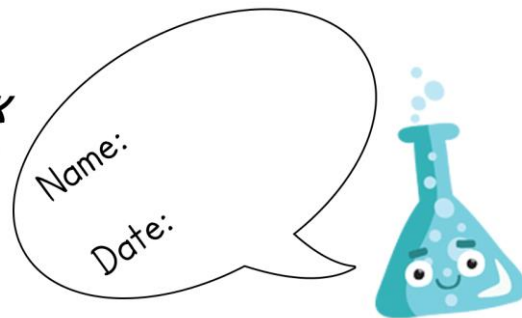
Write-in-answers don't have to be exact. Just make sure the written answers *mean* the same thing as what is typed in the answer sheet.

Please let me know if you find any mistakes! You can email me at: guesthollow@memorableplaces.com.

Please don't share this workbook with anyone else, unless you are using it for co-op purposes.

The answer key is at the end of this PDF file.

Happy homeschooling!



Culinary Reactions

1. Density is which of the following?

- a. How well something floats.
- b. The amount of space something takes up.
- c. How compact (or concentrated) something is.
- d. How much something weighs.

2. Which one of the following has a higher density: A pound of feathers, or a pound of bricks?

3. What is the name of the floating scale you can use to measure the density of a liquid?

4. Proteins and carbohydrates have about how many calories per gram?

- a. 1 calorie
- b. 2 calories
- c. 4 calories
- d. 5 calories

5. Fat has about how many calories per gram?

6. What tells fat cells to take in sugar from the blood?

Chapter 2

1. Give 3 examples of foods that are foams:

2. What does denatured mean?

3. What type of “building blocks” are proteins made from?

4. What is the name of a very strong chemical bond that helps stick proteins together when you beat egg whites in a copper bowl?

- a. disulfide bridge
- b. ionic bridge
- c. marshmallow bridge
- d. protein bridge

5. Give two examples of an acid you could add to a foam to help stabilize it (by helping to form more bonds between proteins):

6: If you beat cream too much, what do you get?

7: Why is salt sometimes added to a bread recipe?

8. What substance can you use to make bread more cake-like?

9. What is a leavening agent?

10. List at least 2 different leavening agents:

11. What is an ion?

12. Opposite charges:

- a. repel
- b. attract

13. What type of bond occurs when something like a sodium atom “sticks” around an atom that took its electron?

Dr. Joe and What You Didn't Know

1. The Aztecs used a dye created from cocaaboo bugs.

True

False

2. Carbamide peroxide is used in tooth whitening products.

True

False

3. You can create foams by blowing a _____ into a material to make bubbles.

4. Who was considered the Greek god of medicine?

5. Decompression sickness is also known as the _____.