Name _____ Date _____ Class Period _____

ACTIVITY

Science Terms

Directions: Recipes involve ingredients—but looked at another way, they also involve many types of substances studied by food scientists. Some of these are described below. Match each description in the left column with the correct term from the right column. Write the letter of the term in the space provided. Do not use any term more than once.

Descriptions

_____ 1. Substances such as carbon and iron, which cannot be further broken down

_____ 2. The smallest chemical unit of a substance that can exist independently

_____ 3. Two or more simpler substances joined

_____ 4. The substance from which green vegetables get their color

_____ 5. The substance from which red, purple, and blue fruits and vegetables get their color

_____ 6. The substance from which yellow and orange fruits and vegetables get their color

_____ 7. Special proteins that help chemical reactions happen

_____ 8. Substance in juice that slows the activity of enzymes

_____ 9. Substance that, when heated in water, disperses throughout the water, and when cooled, turns into gelatin

_____ 10. Stretchy, elastic network formed from the bonding of two proteins of wheat when wheat flour is mixed with water and kneaded

Terms

A. carotenoids

B. chlorophyll

C. citric acid

D. collagen

E. compound

F. elements

G. enzymes

H. flavonoids

I. gluten

J. molecule

Continued

Name _____ Date _____ Class Period _____

Science Terms continued

Directions: Scientifically speaking, substances can be combined with one another in various ways. Some of these are described below. Match each description in the left column with the correct term from the right column. Write the letter of the term in the space provided. Do not use any term more than once.

Descriptions	Terms
_____ 11. One substance dissolved in another	A. colloidal dispersion
_____ 12. Consists of two or more kinds of matter, each retaining its characteristic properties	B. emulsion
_____ 13. Mixture of two liquids whose droplets do not normally blend with each other	C. mixture
_____ 14. Particles don't dissolve, but are distributed throughout the other substance	D. solution

Directions: Food science also involves many kinds of processes. Some of these are described below. Match each description in the left column with the correct term from the right column. Write the letter of the term in the space provided. Do not use any term more than once.

Descriptions	Terms
_____ 15. Substances become new and different substances	A. chemical reaction
_____ 16. The size and shape may change, but not the basic chemical nature of matter	B. coagulation
_____ 17. Energy is passed from molecule to molecule	C. conduction
_____ 18. Energy is passed through the flow of heated material such as water	D. convection
_____ 19. Energy is transmitted by waves that travel through space	E. fermentation
_____ 20. A liquid changes into a soft semisolid or solid mass	F. Maillard reaction
_____ 21. Sugars break down into carbon dioxide and alcohol	G. physical change
_____ 22. Amino acid reacts with a sugar at high temperature, resulting in browning	H. radiation

Name _____ Date _____ Class Period _____

ACTIVITY

Heat Transfer

Directions: Heat is transferred to food by three processes: conduction, convection, and radiation. In the spaces provided, draw a diagram that explains how each of the processes works. Label your diagram to make the process clear

Conduction
Convection
Radiation

Name _____ Date _____ Class Period _____

ACTIVITY

Keeping the Green

Directions: Supply the missing words to complete the following paragraphs about keeping green vegetables green. Write the missing word for each number on the lines provided. Choose your words from the following list. You will use some words more than once. Some words will not be used.

acids	bases	cells	minerals	orange
baking	boiling	chlorophyll	mushy	steaming
baking powder	brown	cold	nutritious	time
baking soda	carotenoids	crisp	olive	vitamins

In addition to their taste, many people enjoy the look of fresh broccoli, green beans, and peas. These vegetables get their bright green color from **(1)**. Unfortunately, when a green vegetable is cooked, its **(2)** break down. The **(3)** in the cooking water come in contact with the **(4)**. A chemical reaction takes place. A new substance is formed that is **(5)** in color. This substance causes the vegetables to turn an **(6)** color.

You can help keep your green vegetables green by adding them to water that is already **(7)** and limiting the cooking **(8)**. Another way to keep the green in your vegetables is to cook them by **(9)** them. This method works because the **(10)** in the vegetables never comes in contact with the **(11)** in the cooking water.

Some people suggest adding **(12)** to cooking water. This method will work because the **(13)** neutralizes some of the **(14)** in the cooking water. Although this method allows you to keep the green in vegetables, it takes two other things away. Your vegetables will lose their **(15)** quality and may be **(16)**. Also, the substance destroys **(17)**, so the vegetable will be less **(18)**.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

Name _____ Date _____ Class Period _____

What Might Happen?

Directions: Read the situations described below. Then answer each item as directed.

1. Malcolm's family has a new convection oven. Malcolm prepares a cake mix and places the pan in the new oven for 35 minutes, just as he would have with their conventional oven. What might happen?

_____

_____

2. Natalie is warming soup in a large pan for lunch. She turned on the small front burner of the range to heat the soup. What could be the consequences of her actions

_____

_____

3. Shane wanted to check on the casserole he was baking in the oven, so he leaned his face close to the oven door and opened it a crack to peek at the casserole. What could be the consequences of his actions?

_____

_____

4. Briana bought some fresh English muffins. When she got home, she decided to freeze them for later use, so she put them in the freezing compartment of her one-door refrigerator. What are the probable results of her action?

_____

_____

5. When Robin took the last pork chop out of the electric skillet, she unplugged the skillet, then turned it off. What might have happened?

_____

_____