

MiSP Chemical Reactions Worksheet #2, L1

Name _____

Date _____

Hot News About Baking Potatoes

Introduction:

Potato baking, as well as most other cooking, involves changes in food caused by heat. We cook things in an oven, in a microwave oven, or on a stove top. The heat from these appliances changes the food chemicals being cooked. Although it is complicated and involves several types of changes, much cooking involves chemical changes in the substances in the food. Food is “done” when the chemical changes have occurred enough so that the food is ready (and safe) to eat.

Most recipes for baked foods require a particular oven temperature and a particular length of time for the proper cooking chemical reactions to occur. This often presents a challenge for a cook if she or he is cooking several items in the oven that require different temperatures.

Luckily, baking potatoes can be cooked at several different temperatures.

Problem:

How do different oven temperatures affect the rate of potato baking? (When the time is shorter, the rate of reaction/cooking is greater than when the cooking time is longer.)

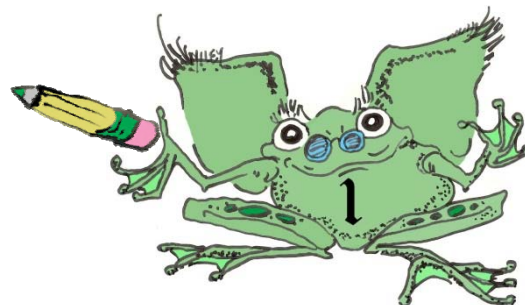
Oven Temperature	Potato Baking Time*
325°F (163°C)	90 minutes
350°F (177°C)	75 minutes
400°F (205°C)	45 minutes

** Of course, this will vary depending on the size of the potato and what type it is!*

Graph Your Data:

Graph the data on the next page.

- Label the x -axis.
- Label the y -axis.
- Connect the data points with a straight line

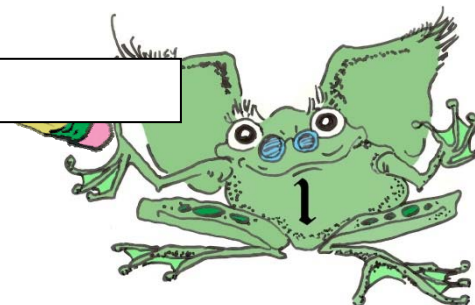


Empty rectangular box at the top of the page.

Large grid area for calculations or drawing.

Vertical empty rectangular box on the left side of the page.

Horizontal empty rectangular box at the bottom of the page.



Questions:

1. At which temperature is the *rate* of potato baking greatest?
 - a. 325°F (163°C)
 - b. 350°F (177°C)
 - c. 400°F (205°C)

Why did you pick that temperature? _____

2. Using the graph, determine how long it would take to bake a potato at:
 - a. 375°F _____
 - b. 425°F _____

3. Conclusion: Complete the sentence below by filling in the blanks.

When baking a potato, the higher the temperature in the oven, the _____

the cooking time and the _____ the rate of chemical reactions that

occur during cooking.

