



# THE EDIBLE SCHOOLYARD

*A program of the Chez Panisse Foundation*

## The Mathematics of Rhubarb Jam

### INGREDIENTS

3 cups rhubarb stalks - washed and diced  
1/2 cup sugar  
3 tablespoons water

### METHOD

Combine the rhubarb, sugar and water in a small saucepan. Cook over medium heat until sugar dissolves and jam thickens, about 15 minutes.

### INCREASING A RECIPE

1. The recipe for Rhubarb Jam shows that for every 3 cups of rhubarb, 1/2 cup of sugar is necessary. Copy and complete this table to show the amounts of rhubarb and the corresponding amounts of sugar required when the recipe is increased.

*Quantities of Fruit and Sugar in Rhubarb Jam*

<i>number of cups of rhubarb</i>	<i>numbers of cups of sugar</i>
3	1/2
6	
9	
12	

2. We can think of the number of cups of rhubarb and the number of cups of sugar as two variables.

Let  $x$  represent the number of cups of rhubarb.

Let  $y$  represent the number of cups of sugar.

a. Which of these two variables does it make sense to call the independent variable? Explain why.

b. Which of these two variables does it make sense to call the dependent variable? Explain why.

3. Write a formula to express the number of cups of sugar in terms of the number of cups of rhubarb.

4. Draw a graph to show the relationship between the number of cups of rhubarb and number of cups of sugar. Record the number of cups of rhubarb along the  $x$ -axis and the number of cups of sugar along the  $y$ -axis.





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5. Do the points form a line or a curve? Draw a line or a curve to illustrate your answer.
6. What is the ratio of the number of cups of sugar to the number of cups of rhubarb?
7. What is the slope of the line?
8. What does the slope of the line represent in terms of making Rhubarb Jam?
9. Does the line pass through the point  $(0,0)$ ?
10. Does the number of cups of sugar needed to make Rhubarb Jam vary directly with the number of cups of rhubarb? Explain how you know.

