Name: Period: Date:

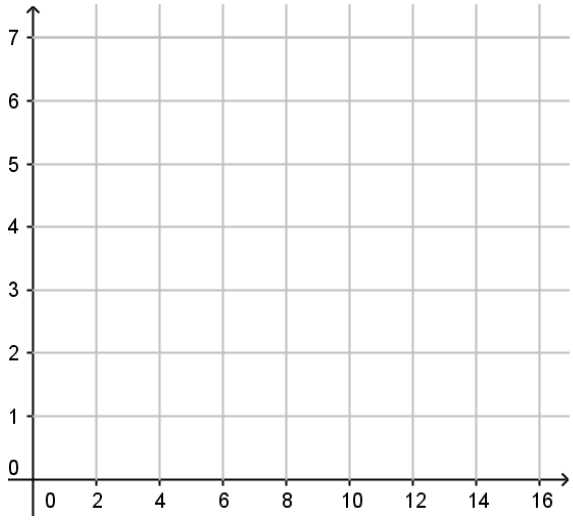
Math Journal: Functions & Relations

Nutritionists examine many common foods to determine the content of several important substances. For people on restricted diets, this information is vital to healthy living, and food producers are required by law to place these numbers on labels.

For example, many people monitor their intake of fats and sodium. Sources of these ingredients in everyday meals include cooking oils, salad dressings, and other condiments. The amount of calories, fat, saturated fat, and sodium for one tablespoon of several of these items is given in the following table.

Type	Calories	Fat (g)	Saturated Fat (g)	Sodium (mg)
Butter (salted)	105	11	7.1	116
Margarine (salted)	95	11	2.2	132
Olive Oil	125	14	1.9	0
Bleu Cheese Dressing	75	8	1.5	164
French Dressing (Regular)	85	9	1.4	188
French Dressing (Low Calorie)	25	2	0.2	306
Italian Dressing	80	9	1.3	162
Mayonnaise	100	11	1.7	80

1. Graph the data with *Fat* on the *x-axis* and *Saturated Fat* on the *y*-axis. Label both axes.



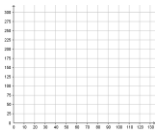
2. Is this graph the graph of a function or a relation only? *Explain* why or why not based on the foods represented by points on the graph.

3. Do you notice any points that seem to "stick out" from the rest of the data? These points are called **outliers** in math. Which two foods are outliers for the data in your graph?

4. Low-fat French dressing is an outlier because it is the lowest in both fat and saturated fat. Explain what makes the other point an outlier.

5. Suppose you were cooking a chicken dish for someone with heart disease who wants their saturated fat intake to be less than one gram. Which of the foods in the graph would be acceptable to include in the recipe?

6. Graph the data with *Calories* on the *x*-axis and *Sodium* on the *y*-axis. Label both axes.



7. Is this graph the graph of a function or a relation only? *Explain* why or why not based on the foods represented by points on the graph.

8. Which two foods on the graph of calories to sodium are outliers? Describe the types of foods these points represent.

9. Suppose you were supervising the diet of clients with high blood pressure who need to reduce their sodium intake. Which two foods from the list would you recommend?