Unit 9, Lesson 5

Costs of Running a Restaurant

Let's explore how much running a restaurant costs.

5.1 Info Gap: Are We Making Money?

Your teacher will give you either a problem card or a data card. Do not show or read your card to your partner.

If If your teacher gives you the problem card:

1. Silently read your card and think about what information you need to answer the question.
2. Ask your partner for the specific information that you need. "Can you tell me _____?"
3. Explain to your partner how you are using the information to solve the problem. "I need to know _____ because . . . ."

   Continue to ask questions until you have enough information to solve the problem.
4. Once you have enough information, share the problem card with your partner, and solve the problem independently.
5. Read the data card, and discuss your reasoning.

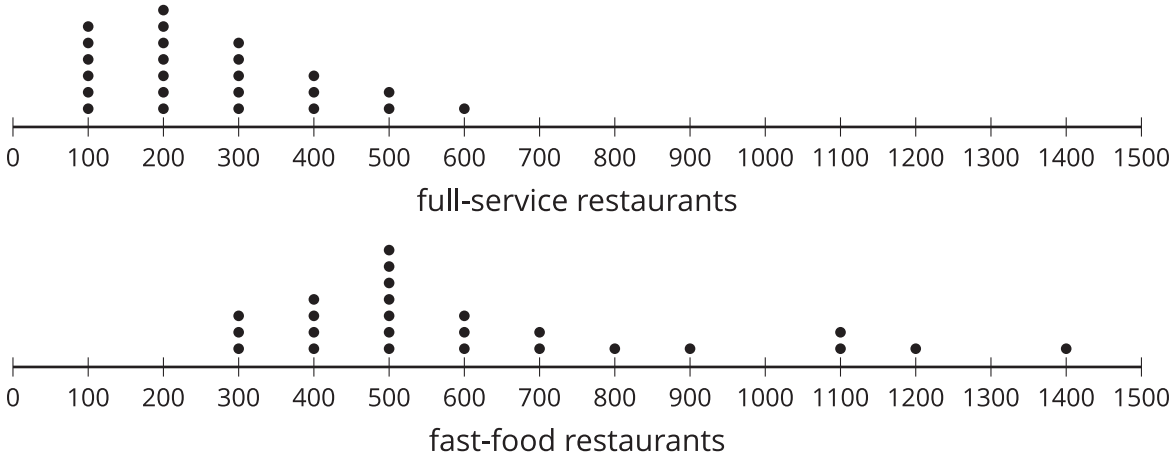
If your teacher gives you the data card:

1. Silently read your card. Wait for your partner to ask for information.
2. Before telling your partner any information, ask, "Why do you need to know _____?"
3. Listen to your partner's reasoning and ask clarifying questions. Only give information that is on your card. Do not figure out anything for your partner!

   These steps may be repeated.
4. Once your partner says they have enough information to solve the problem, read the problem card, and solve the problem independently.
5. Share the data card, and discuss your reasoning.

5.2 Disposable or Reusable?

A sample of full-service restaurants and a sample of fast-food restaurants were surveyed about the average number of customers they serve per day.



1. How does the average number of customers served per day at a full-service restaurant generally compare to the number served at a fast-food restaurant? Explain your reasoning.

2. Estimate how many customers you think your restaurant will serve per day. Explain your reasoning.

3. Here are prices for plates and forks:

	plates	forks
disposable	165 paper plates for $12.50	600 plastic forks for $10
reusable	12 ceramic plates for $28.80	24 metal forks for $30

   a. Using your estimated number of customers per day, write an equation for the total cost, d, of using disposable plates and forks for every customer for n days.

   b. Is d proportional to n? Explain your reasoning.

   c. Use your equation to predict the cost of using disposable plates and forks for 1 year. Explain any assumptions you make with this calculation.

4. a. How much would it cost to buy enough reusable plates and forks for your predicted number of customers per day?

   b. If it costs $10.75 a day to wash the reusable plates and forks, write an expression that represents the total cost, r, of buying and washing reusable plates and forks after n days.

   c. Is r proportional to n? Explain your reasoning.

   d. How many days can the reusable plates and forks be used for the same cost that you calculated for using disposable plates and forks for 1 year?