

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# ***The Environmental Impact of Feeding the World***

## **Student Journal**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Food Waste

Introduction: Food waste is food that is thrown away because it is either undesirable or inedible. At this station, you will learn more about some of the reasons why food is thrown away.

At your station, you have a variety of food items. ALL of these items are very often thrown away and contribute to the **20 lbs of food waste**<sup>1</sup> that the average American produces every day!

1. Next to each food item below, write: 1) A hypothesis for why you think it is often thrown away, and 2) one reason why you think it should or should not be thrown away:

a. Misshapen produce (fruits and vegetables):

b. Leftover take-out food:

c. Food with an 'expired' sell-by date:

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<sup>1</sup> [World Resources Institute, 2013](#)

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2. Describe the different food items at your station. Do any of them look inedible or spoiled? Do they smell bad? How do you think a packaged food item's 'sell by' date is determined, and what exactly does it mean?

3. Can you think of a few ways you could keep these food items from going to waste? List them below:

Example: We could donate leftover food to a food bank.

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## Food Deserts

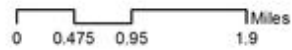
Introduction: People living in a ‘food desert’ generally don’t have easy access to fresh, healthy, and affordable foods. Some parts of our cities don’t have grocery stores or farmer’s markets, and people have to buy food from small convenience stores or fast food restaurants—the only places to buy food in their neighborhood. At this station, you will explore if there are food deserts in San Francisco, California.

1. At your station, you have a few items that were purchased at a convenience store. Read the ingredient lists for these items. Do you know what all of the ingredients are? List any unknown ingredients below.
2. Do you consider these products to be ‘healthy’? Why or why not?
3. Take a few minutes to study the two maps of San Francisco on the following pages. What information do the maps show?

# Retail Food Sources

## Food Retail

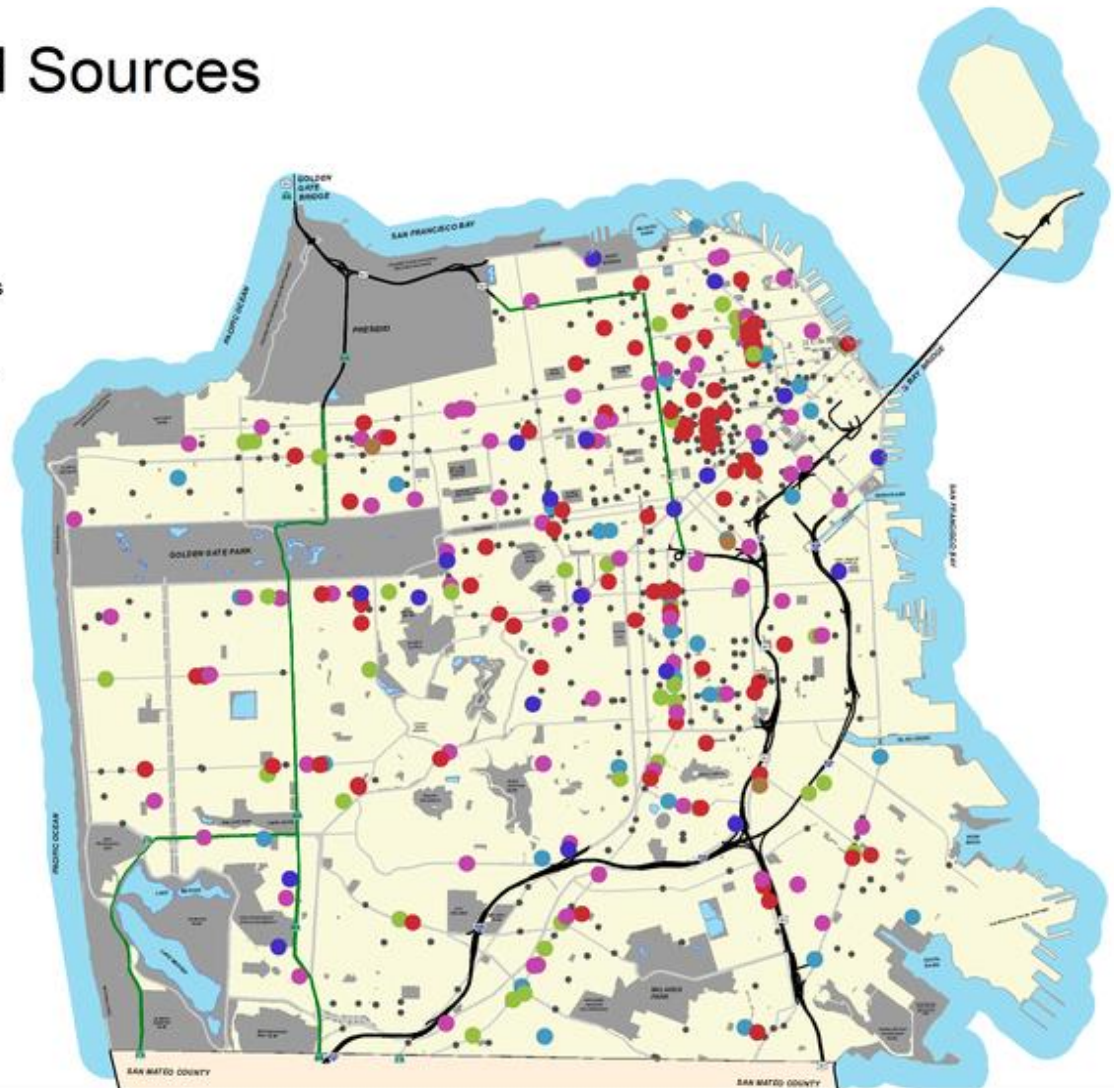
- Supermarket
- Warehouse Club Stores
- Grocery, Other
- Fruit/Vegetable Market
- Meat/Fish/Poultry
- Farmers Market
- Convenience or Liquor Store



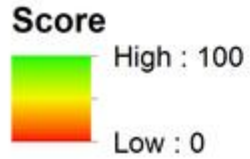
Source: Dun & Bradstreet, 2011  
San Francisco Department of  
Public Health, 2011

City and County of San Francisco  
Department of Public Health  
Environmental Health Section

Available at [www.thehdm.org](http://www.thehdm.org)



# Food Market Score\*



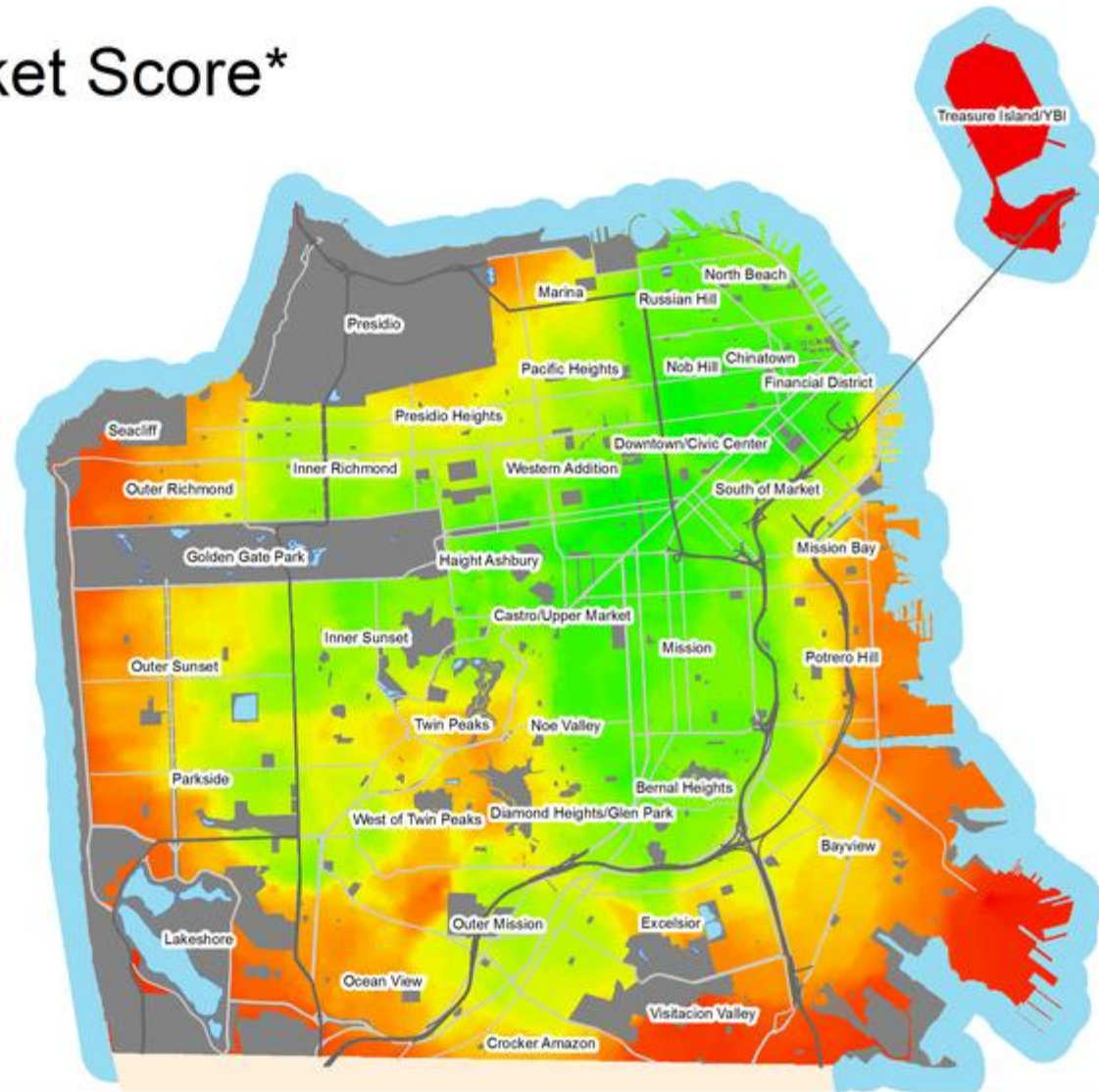
\*A relative measure of the number and variety of retail food resources within one mile, weighted by food offerings and distance.



Source: Dun & Bradstreet, 2011  
San Francisco Department of  
Public Health, 2011

City and County of San Francisco  
Department of Public Health  
Environmental Health Section

Available at [www.SustainableSF.org](http://www.SustainableSF.org)



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4. Could you use these maps to identify food deserts in San Francisco? Take a few minutes to study the maps, then circle any regions that have the characteristics of a food desert. Explain why you circled the areas you did and how you used the information on the maps to identify them:

5. One condition of a food desert is that people don't have easy access to a variety of fresh and healthy foods. Brainstorm a list of factors that impact or limit a person's access to fresh and healthy foods:  
Example: Whether or not the person has a car and can drive to a grocery store.

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## Clearing Land for Agriculture

Introduction: Food production can contribute to habitat destruction as land is cleared for growing crops and raising animals. At this station, you will explore these environmental impacts of agriculture in different parts of the world.

Open your web browser on your computer and go to:

<https://www.calacademy.org/educators/how-did-human-civilization-spread>

1. Watch this visualization clip from the California Academy of Sciences that shows how human populations (yellow) and agriculture (green) spread around the world through time. What do you notice about the relationship between population growth and the spread of agriculture? *You might need to watch the clip through more than once!*
  
2. At the end of the visualization, about how much of the land area on the earth has been impacted by agriculture (One-half? Three-quarters? 99%?)
  
3. How is a forest converted into farmland?



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4. Tropical rainforests are home to 80% of the documented species we have on our planet! Do some research on the web to learn more about how and where rainforests are being cut down to make more room for agriculture. Write down a few facts that you find. Here are some websites to get you started:

<http://www.worldwildlife.org/threats/deforestation>

5. As the human population continues to grow, we will need to grow more food to feed everyone. Where do you think we will look for more space to grow more food? What impacts could this have on habitats around the world?

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## Comparing Diet Land Footprints

Introduction: Did you know that the choices you make about the foods you eat can have an impact on the environment? In this activity, you will explore how the average American's diet and the land footprint of this diet compares to others around the world.

Open your web browser on your computer and go to:

<http://www.nationalgeographic.com/what-the-world-eats/>

6. On this web page, you will see several pie charts that break down the average diets of people living in different countries around the world. Start by clicking on the chart for the United States, and describe what an average American diet looks like:
7. Now, click on the chart for India. How does the average Indian diet compare to the average American diet? List at least four observations:
8. Now, click on the chart for Hong Kong, and compare the average diet in Hong Kong to the average American AND the average Indian diet:

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9. Recall from the Flipside Science video you watched that  $\frac{3}{4}$  of the agricultural land on the earth is used just for meat production! Much of this land is used to grow feed for the animals. Looking back at the diet pie charts for the United States, India, and Hong Kong, write a few sentences comparing the agricultural 'land footprints' of these three countries:

10. Browse through the pie charts for other countries around the world. Which of the countries do you think has the smallest agricultural land footprint? Does this necessarily mean people living here are eating more 'sustainable' diets? What do you think makes a 'sustainable' diet, and what does it look like? What factors determine the kinds of foods that people eat?