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Module 03: Energy & Climate Change

Urban EcoLab

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## Student Pages - Google Earth - Answer Key

Center for Urban Resilience

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**Activity 6.2: How far did this lunch travel?  
(calculated using Google Earth)**

Many of us rarely give much thought to where the food we eat originally came from. A lunch bag containing a tuna fish sandwich with a bag of potato chips, a small carton of milk and fruit salad may not seem like an “energy sucker”, but do you know how far this food traveled to get to the bag?

<b>Food</b>	<b>Product of</b>
Tuna Fish - “Chicken of the Sea”	Thailand (distributed through San Diego)
Bread	A local bakery
Mayonnaise – “Hellman’s”	New Jersey
Potato Chips	Washington State, Colorado or Idaho
Milk – “Horizon Organic”	Colorado
Fruit Salad - Banana	Costa Rica
Fruit Salad – Orange “Sunkist”	South Africa
Fruit Salad – Kiwi “Zespri”	New Zealand
Fruit Salad – Grapes	California
Fruit Salad – Strawberries	Mexico

1. For each of the following food items, determine the distance it traveled to go from its original place for growth or fabrication to get to us here in Massachusetts.
2. Using Google Earth (<http://earth.google.com>) begin by typing in the location into the small window that says “Fly To”.
3. Open the tools at the top of the page and click on Ruler. Remove the check mark from the “Mouse Navigation” box.
4. Click on the start location, move the mouse to the ending location, click again and the distance will appear in the window.
5. For long distances, you may need to zoom out, and rotate the globe. Zooming and rotating can be done by using the Navigation Tool located at the upper right hand side of the window. When you place the cursor on the directional compass, the navigational tool appears. Click the ruler cursor on your starting location, at any time you can click on the map, use the Navigation Tool, and then re-drag your line to the proper location by placing your cursor on the red box.

<b>Food</b>	<b>Distance traveled to Massachusetts (miles)</b>
Tuna Fish - “Chicken of the Sea”	From Thailand->San Diego-> Boston ~ 10,836
Bread	Answers will vary ~1-5
Mayonnaise – “Hellman’s”	New Jersey->Boston ~247
Potato Chips	Washington-> Boston~ 2,431, Colorado -> Boston~ 1,816, Idaho-> Boston~ 2,135
Milk – “Horizon Organic”	Colorado-> Boston~ 1,816
Fruit Salad - Banana	Costa Rica -> Boston ~2,373
Fruit Salad – Orange “Sunkist”	South Africa -> Boston~ 7,784

Fruit Salad – Kiwi “Zespri”	New Zealand-> Boston ~9,111
Fruit Salad – Grapes	California-> Boston ~2,556
Fruit Salad – Strawberries	Mexico-> Boston ~2,214
<b>Total Distance Traveled</b>	<b>~39,000 miles</b>

1. The circumference of the earth is approximately 24,900 miles. Compare your total distance traveled to the circumference of the earth. How far around the earth did your food travel? How does your total above compare to that number?

*Total distance traveled is greater than the circumference of the earth.*

$\frac{\text{Total Distance}}{\text{Circumference}} = \frac{39,000}{24,900} = \sim 1.7$  Answers will vary, but somewhere between 1-2 is expected

*Our food traveled 1.7 times around the earth.*

2. What are some forms of transportation that would need to be used in order to bring different types of food products and ingredients to the average lunch bag? How might this contribute to climate change?

*Transportation examples: air planes, buses, trucks, boats, ect. Transportation vehicles use fossil fuels to move. This process releases carbon dioxide and other greenhouse gases which trap heat and contribute to climate change.*

3. Reflecting on your answer to question #2, what are some choices you could make in preparing a lunch that would contribute less to climate change? Why?

*The further the food travels the more greenhouse gases are released into the atmosphere. One could choose locally grown food to limit transportation. One could also produce some of their own foods to cut back on transportation costs. Because the food is not traveling great distances it would contribute less to climate change.*