

## **THE AMERICAN SOUTHWEST: ARE WE RUNNING DRY? WATER RELATED HEALTH ISSUES**

### **Pre-Screening Activity 2 Global Water Usage Realization**

#### **Overview:**

After completing this pre-visit activity students will be able to identify global components of our food supply, connect water usage to these products, and recognize our interdependence between states as well as countries.

#### **Materials:**

- Variety of foods, labeled with the country of origin
  - o (encourage students to bring)
- World map
- String
- Sticky notes
- Computers with Internet access for extension

#### **Background:**

Our world is much smaller and products that touch our dinner table may originate from thousands of miles away. During the summer of 2008, a salmonella outbreak caused the United States Food and Drug Administration (FDA) to advise consumers to avoid tomatoes and then jalapenos and serrano peppers as experts worked to trace the source of the contamination to a sample of irrigation water collected on a farm in the state of Tamaulipas, Mexico. It contained *Salmonella* Saintpaul and had the same genetic fingerprint as the strain of bacteria that caused the outbreak in the United States (<http://www.fda.gov/oc/opacom/hottopics/tomatoes.html>).

In 2007, spinach was the culprit testing positive for salmonella distributed by Metz Fresh LLC of King City, California and in 2006 *E. coli* tainted spinach killed 3 and sickened 200. The spread of *E. coli* was first linked with contaminated ground beef but has also been spread through leaf vegetables, and contaminated drinking water.

Sources of produce contamination are varied since these are grown in soil and can become contaminated while growing or through processing and distribution. Contamination may occur during growing, harvesting, processing, storing, shipping, or final preparation (<http://www.digestive.niddk.nih.gov/ddiseases/pubs/bacteria/index.htm#2>).

According to the Center for Disease Control (CDC), approximately 76 million people are affected by foodborne illnesses in the United States each year, many of these directly related to water used throughout the growing process (<http://www.foodsafety.gov/~fsg/fsgkids.html>). Imports account for 80% of the nation's seafood, 45% of its fresh fruit and 17% of its fresh vegetables. The FDA inspects about 1% of the imported foods it regulates ([http://www.usatoday.com/money/industries/food/2007-03-18-food-safety-usat\\_N.htm?POE=NEWISVA](http://www.usatoday.com/money/industries/food/2007-03-18-food-safety-usat_N.htm?POE=NEWISVA)).

During this activity students will collect data from food labels, locate on a wall map the country or state of origin, and use string to connect each point with their current location.

**Pre-Activity:** (10 minutes at least a day prior to activity)

Ask students to imagine the food in their pantry and predict where it was grown or raised. Ask students to examine items found in their pantry at home and identify the country of origin listed on the label. If students have been grocery shopping recently, they may record where fresh meat, fruits or vegetables originated. Students should be encouraged to bring to class one canned item.

**Activity:**

1. Where was the food in your pantry grown or raised? Share lists and samples of items brought to class.
2. Place a small sticky note on each location mentioned and connect it with a piece of string to the school's location.
3. Calculate the percentage of food grown or raised out of state. How much came from another country? Discuss the class' findings.
4. What do you know about where the products were grown or how they were shipped? What problems might occur with these food products? Utilize background information to relate facts and figures to the students.

**Extension Activity:**

Investigate foodborne or waterborne bacteria online. Identify ways to prevent the spread of these illnesses. How are they contracted? Is there a cure? Is there a solution to stop the spread of the disease? Develop a public service announcement to inform the public about this problem.

**Web Resources**

USGS Water Science for schools

<http://ga.water.usgs.gov/edu/sacsq.html>

U.S. Food and Drug Administration

<http://www.fda.gov/oc/opacom/hottopics/tomatoes.html>

National Digestive Diseases Information Clearinghouse (NDDIC)

<http://www.digestive.niddk.nih.gov/ddiseases/pubs/bacteria/index.htm#2>

Food Safety

<http://www.foodsafety.gov/~fsg/fsgkids.html>

Centers for Disease Control and Prevention

<http://www.cdc.gov/ncidod/dpd/parasites/waterborne/>