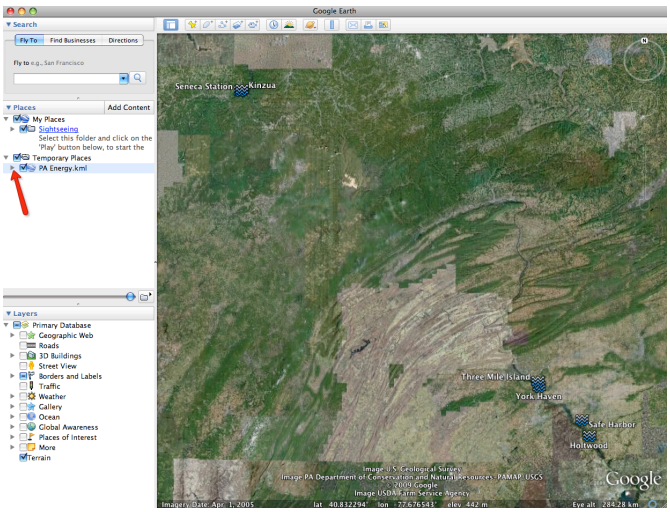
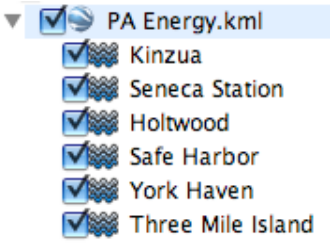
Exploring Pennsylvania Energy on the River with Google Earth

Use Google Earth to explore energy-generating power plants on two rivers in Pennsylvania.
In this activity, you will

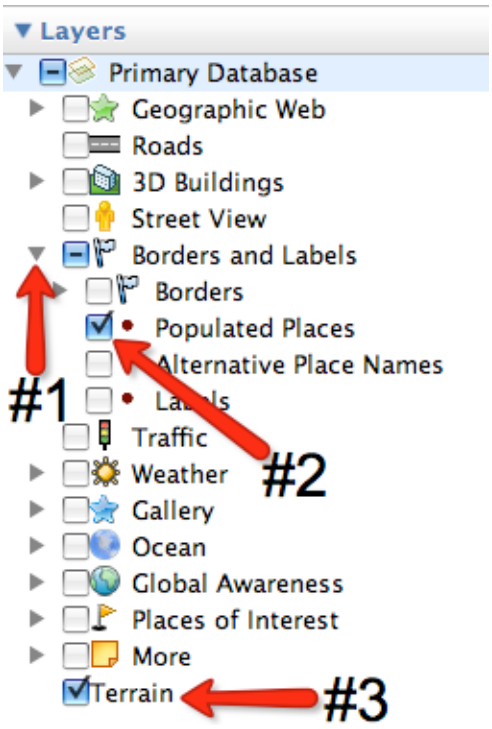
1. Explore energy-generating hydro power plants on the Allegheny River.
2. Explore energy-generating hydro and nuclear power plants on the Susquehanna River.

Read **all** instructions and answer **each** question on your field guide.

Step 1: Download data.

a. Open your Web browser. Go to **www.ei.lehigh.edu/learners/energy/**	
b. Click on **Exploring Pennsylvania Energy on the River with Google Earth.**	
c. Click the arrow to the left of **"PA Energy.kml"** in the left panel (see arrow).	
The PA Energy drop-down list will extend. If you cannot see the whole list, scroll down.	

Step 2: Turn on the Populated Places and Terrain layers.

a. In the **Layers** window (lower left panel), click the arrow to the left of **Borders and Labels** (see arrow #1). b. Click the box to the left of **Populated Places** to **place a checkmark** in the box (see arrow #2). c. Click the box to the left of **Terrain** to **place a checkmark** in the box (see arrow #3).	

Step 3: Explore and measure the width or diameter of the energy-generating power plants. Also, measure each power plant's distance to nearby population centers.

a. **Double-click** on **Kinzua** to fly to the Kinzua Dam.
b. Click on the **Ruler** tool  on the **tools menu** at the top of the screen. The ruler dialog box appears. If the dialog box covers up the dam, move it to a different area on your screen.

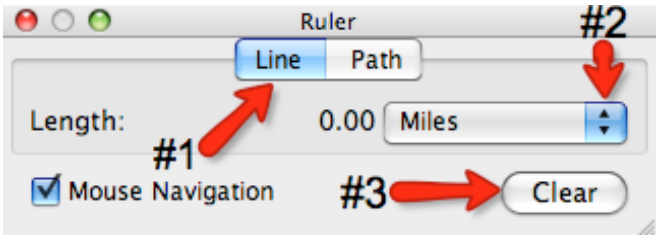
c. Click on **Line** (arrow #1).
Click on the drop-down arrow (arrow #2) and select **Miles** if it is not already selected.

d. Click on one end of the dam to begin measuring its width.
Click on the other end of the dam.

Write the width of **Kinzua** in the **Pennsylvania Energy on the River Data Chart** on your field guide.

NOTE: If you make a mistake, click **Clear** (arrow #3) and start measuring the width from the starting point.

e. Click **Clear** (arrow #3). Do not close the ruler dialog box.



f. **Zoom out** to explore the **area surrounding** the Kinzua Dam.
What does it look like? Is the Kinzua Dam area surrounded by a forest, mountains, an urban area, or something else?

Write a description of the area surrounding the **Kinzua Dam** in the **Pennsylvania Energy on the River Data Chart** on your field guide.

Helpful hint: Use the **navigation controls** at the top right of the screen to explore the surrounding area.

g. Find the nearest **population center** (city or town) that is located closest to the Kinzua Dam.

Helpful hint: You will need to **zoom out** to view a population center near the dam. Look for the nearest population center marked with a small red circle .

h. Measure the distance from the Kinzua Dam to the nearest population center that is within 10 miles from the dam.
Using the **Ruler** tool, click on the Kinzua Dam and then drag your line to the population center.

Write the name and distance of the population center in the **Pennsylvania Energy on the River Data Chart** on your field guide.

i. Measure the distance from the Kinzua Dam to the nearest population center that is between 20 - 50 miles from the dam.

 Write the name and distance of the population center in the **Pennsylvania Energy on the River Data Chart** on your field guide.

j. Click **Clear**. Do not close the ruler dialog box.

k. **Double-click** on **Seneca Station** to fly to it.

This is the Seneca Pumped Storage Generating Station. This is a hydroelectric power plant that uses pumped storage of water to generate electric power.

l. Click on one end of Seneca Station to begin measuring its **diameter**. **The diameter** is the distance from one point on a circle to another point **through the center** of the circle. Click on the other end of the dam.

 Write the diameter of **Seneca Station** in the **Pennsylvania Energy on the River Data Chart.**

m. **Double-click** on the next dam (Holtwood). Repeat **Steps d, e, f, g, h, i,** and **j** above to complete the **Pennsylvania Energy on the River Data Chart** for **Holtwood**, **Safe Harbor**, and **York Haven.**

n. **Double-click** on **Three Mile Island** to fly to it.

o. Repeat **Steps f, g, h,** and **i** to complete the **Pennsylvania Energy on the River Data Chart.**

p. Click **Clear**. Close the ruler dialog box when you finish.

 Answer **questions 1 - 3** on your field guide.