

Google Earth Education Community:

<http://edweb.tusd.k12.az.us/dherring/ge/googleearth.htm>

Google Earth Lessons: <http://www.gelessons.com/> (this site also includes lessons for YOU, so that you can feel more comfortable teaching the kids in Google Earth)

Google Earth Blog: <http://www.gearthblog.com>

The following lessons are designed to be used as 20-30 minute “snippets” during a regular 90 minute block. If you decided to spend an entire class period with GE, you could always combine these lessons. I always preferred doing it in the snippets because the kids can get overwhelmed with all the information at once – they can also get very distracted very quickly in GE.

The lessons also assume the laptops already have GE installed. If they don’t, you’ll have to have the students start off by visiting <http://earth.google.com> and downloading the free version.

#### TEACHER NOTES:

##### Lesson One: Getting Started

Students will learn about navigating through Google Earth. This will be a fun exploration for them and a break from the normal content in the classroom. Give students a little freedom to explore. They will want to visit places they’ve been or places they’ve always wanted to go. Encourage them to look at things like the Grand Canyon, Mount Saint Helens, Mount Everest, etc.

##### Lesson Two: Learning about Layers

Students will spend more time navigating, and will learn about turning on the many layers of Google Earth. Layers have a lot of different kinds of informative locations already marked in GE. There are always new layers being added to GE.

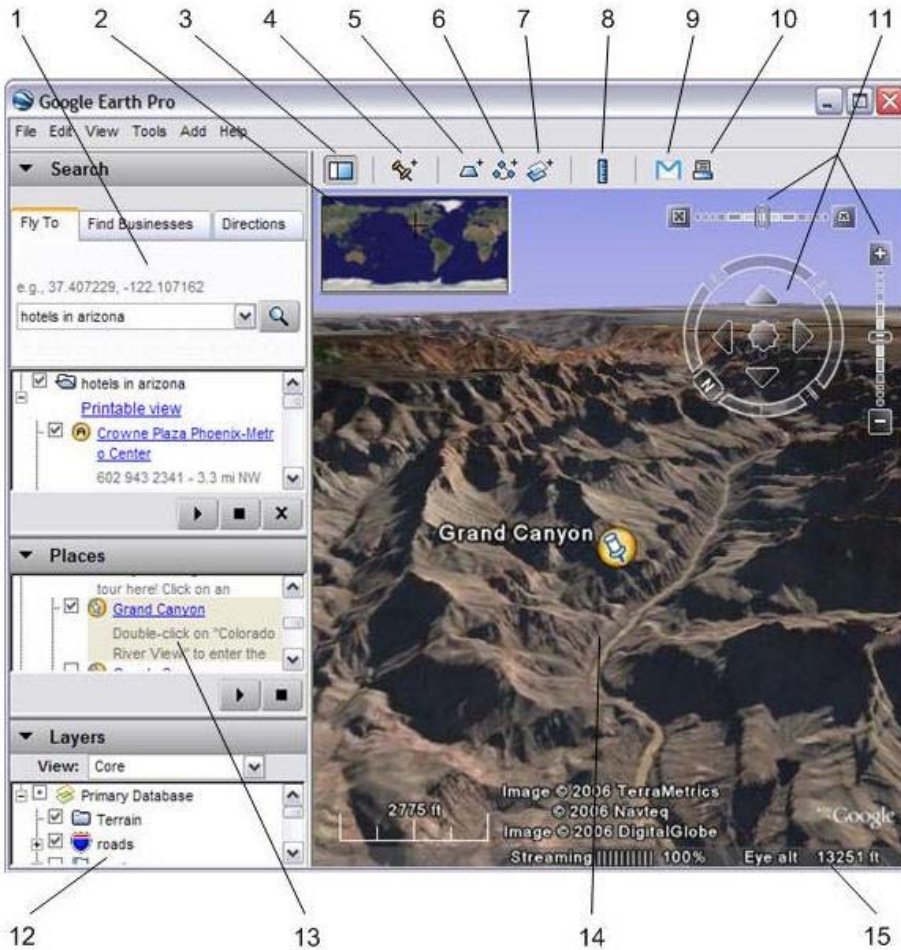
##### Lesson Three: Making Measurements

Students learn how to use the measuring tools in GE. This can be a springboard for several Math lessons – have students calculate perimeters and areas of famous landmarks, distances between points, etc.

##### Lesson Four: Your own Google Earth creation (this lesson could take longer)

Students will look at more layers and at files that have been made by Google Earth users. They will learn how to create and edit placemarks, overlays, and make their own virtual trip. To find trips that have already been made, visit one of the above websites and/or visit the Google Earth Community, accessible through GE.

# Google Earth Quick Start User Guide



1. **Search Panel**- Use to find places and directions
2. **Overview Map**- Use for an additional perspective
3. **Hide/Show sidebar**- Click to conceal or display side bar
4. **Placemark**- Click to add a placemark
5. **Polygon**- Click to add a polygon
6. **Path**- Click to add a path
7. **Image Overlay**- Click to add an image
8. **Measure**- Click to measure distance
9. **Email**- Click to email view or image
10. **Print**- Click to print current view
11. **Navigation Controls**- Use to tilt, zoom and move
12. **Layers Panel**- Use to display points of interests
13. **Places Panel**- Use to locate, save, and organize placemarks
14. **3D Viewer**- View the globe and terrain
15. **Status Bar**- View streaming status

Hall Davidson, 2007

# GOOGLE EARTH

## Getting Started



***Today, we will learn how to navigate through Google Earth. You'll be able to spend a little time exploring on your own after you complete these tasks:***

1. Use Google Earth to "fly" to your home address. Zoom in. Is this really your house?
2. If not, how far away from your house is it?
3. How old do you think this satellite picture is? (look at buildings, automobiles, etc., in your neighborhood and try to figure it out)
4. Now fly to our school. Did Google Earth really find our school?
5. Enter "the white house" into the address box (exactly as it is shown). Does it really go to George W. Bush's house? If not, where did it go?
6. Now enter "White House, Washington, DC" in the address box. Did it go to George's house now?
7. Your teacher is starting to act really grumpy and you think coffee would help. Click on the "Find Businesses" tab and enter "Starbucks". Find the address and phone number of the nearest Starbucks. Enter it here:
8. You call, but they don't deliver. You decide that tomorrow before school, you are going to pick up some coffee for your teacher. Look for driving directions from your house to the Starbucks. How far away from your house is the Starbucks? Click play to see the route – do you see anything interesting along the way?



## **GOOGLE EARTH**

### Learning about Layers

***Now that you know how to navigate Google Earth, lets spend time today exploring the many layers that are available.***

1. In the layers box, click on the + beside "community services", then click on the + beside "school districts", and click to place a check beside "unified school districts". You should see outlines of the school districts.
2. Fly to our school. Zoom in or out so that you can see the outlines of the districts surrounding our school district. How many districts border ours?
3. Fly to New York City. In Layers, click to show "3D buildings". Navigate between the skyscrapers in New York. Find one other city that has cool 3D buildings.
4. Click on US Government, then place a check next to "Crime Stats". What can you find out about where we live?
5. Explore other layers. Which one did you find the most interesting?

# GOOGLE EARTH

## Making Measurements



*Today we will learn how to use the measuring tools in Google Earth to calculate perimeters, areas, distances, etc.*

1. If you don't have the school district outlines turned on, turn them on like you did during the last Google Earth lesson.
2. Click on the Ruler tool and determine how wide our district is at its widest point.
3. Determine how narrow our district is at its narrowest point.
4. Using the "add path" function, determine the distance of the perimeter of our district.
5. Using the line function, determine how many miles there are between Irving and London.
6. Fly to Washington, DC. Do you see any interesting geometric features about the layout of the city?
7. Determine the perimeter of the long rectangle between the Washington Monument and the White House.
8. Draw a line between the Washington Monument, the Lincoln Memorial, and the Jefferson Memorial. What type of triangle is this? What is the area of the triangle?

# **GOOGLE EARTH**

## Your Own Google Earth Creation

***You now have all the basic information you need to navigate through and find locations in Google Earth. Today, we will learn how to create our own placemarks and Google Earth trips.***

1. Click on Featured Content in the Layers section. Place a check beside Rumsey's Maps. Find a map – what is it a map of? What do you find interesting about it?
2. Click on National Geographic, then "Live WildCams" – What did you watch?
3. Explore some of the other featured content. Which was your favorite and why?

***Now you will create your own virtual trip. This trip will be short and will show the viewer where you were born, where you live now, where you go to school, and where you hope to someday go to college and/or work.***

First, create a folder (Ctrl+shift+N) so that everything you do will be saved in the same folder.

4. Locate where you were born. Click on the "add placemark" icon (looks like a thumbtack at the top of the screen)
5. From the popup box, what is the latitude and longitude of your house?
6. Give your placemark a name.
7. Click in the "description" box and add a brief description, including your name and birthdate.
8. You can change your placemark's appearance by clicking on the yellow thumbtack icon in the popup box (beside the name of your placemark)
9. When you are done, click okay. You will see your placemark on that location in Google Earth.
10. Locate where you live now and create a placemark with a description.

11. Next, locate our school, where you would like to go to college, and where you would like to work, and create placemarks with descriptions for all of them.
12. Add a picture to at least one of your placemarks. Go to the placemark you would like to add a picture to and right-click. Then click properties to bring back the popup window. In the description box, you can enter html to add a picture that is stored on your computer ``  
**Be sure to save the picture in the folder you created.**
13. If you have video on YouTube or another video sharing site that you would like to include, you can use the "embed" code provided by the site to embed your video into a placemark in the description box.
14. Add an overlay to one of the locations in your trip. Click on the "Add Image Overlay" icon at the top of the screen. Browse your computer for the picture you wish to overlay. Click okay and you will see the overlay on top of that location in Google Earth. **Be sure the picture for the overlay is saved in the folder you created.**
15. When you are done creating your trip, click the play button to travel through your placemarks.
16. Save as a KMZ file. Click file, save My Places as. You have just created your first virtual trip through Google Earth! E-mail the entire folder you created today to your teacher (should include KMZ file and pictures).