

Google Earth Education Community

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

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The following directions and screen shots are for Google Earth (Version 4), released in Beta form on June 12, 2006. Many of the directions will also apply to Version 3 although some differences do exist.

Please email additional tips, corrections, and comments to david.herring@tusd1.org.

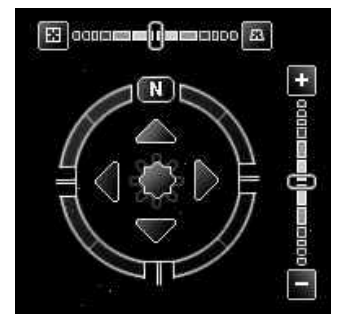
Downloading the Software

- To install Google Earth on your computer visit <http://earth.google.com/>.
- Click [Get Google Earth](#) on the right side of the page.
- Select Version 3 or Version 4 and click the DOWNLOAD GOOGLE EARTH button. Follow the directions.
- Once the download is complete, run the install program. This should create a desktop icon. Double click the icon to begin. If an icon is not created find the program folder and run the program from there.



Getting Started

- **MOUSE CONTROLS:** When the mouse is over the globe a hand will appear. Holding down the left mouse button will grab the globe so that it can be manipulated easily. Double clicking on a point on the globe will begin a zoom inward. If the mouse has a center wheel this can also be used to zoom in and out quickly.
- **NAVIGATOR:** At the top right of the screen a NAVIGATOR makes it possible to zoom in or out, rotate the globe clockwise or counterclockwise, pan in four directions, or tilt the angle of view. To increase the view area, the NAVIGATOR will minimize to a compass when the mouse is not over it. Simply move the mouse over the compass and the NAVIGATOR will reappear.
- **TOOLBAR:** Buttons in the toolbar at the top of the page allow a user to quickly hide and reveal the SIDEBAR, add placemarks, add polygons and paths (both features are available only in the pay versions of Google Earth), create image overlays, measure distances, email images and views, and print images.

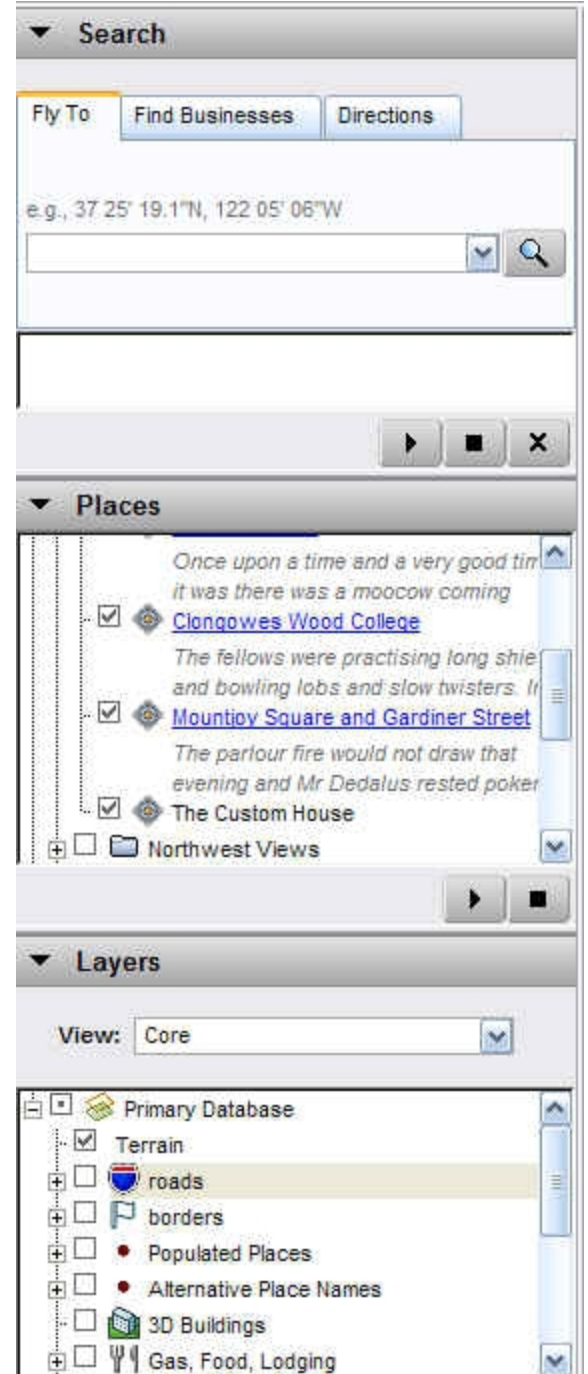


- **SIDEBAR:** A panel at the left of the screen offers more choices. Here there is a **SEARCH** frame, a **PLACES** frame, and a **LAYERS** frame. All of the tools in the **SIDEBAR** can be minimized by clicking the arrow next to the left of the title. In addition to hiding and revealing the **SIDEBAR** from the **TOOLBAR**, it can also be hidden from the **TOOLS** dropdown menu.

- **SEARCH:** Type location names or longitude and latitude coordinates to find specific locations. In the United States and some of Europe many street addresses are also searchable. Local searches of businesses and services as well as for directions from one location to another can be performed by selecting from the tabs at the top of the panel. All the search results will be added to a list beneath the search box. This information can be moved into the **PLACES** area in the lower frame by clicking and dragging specific items.

Note: The program will often behave in unexpected ways, such as finding numerous businesses in a part of the country distant from the location you intended to find. Being as specific as possible when searching will reduce erroneous responses.

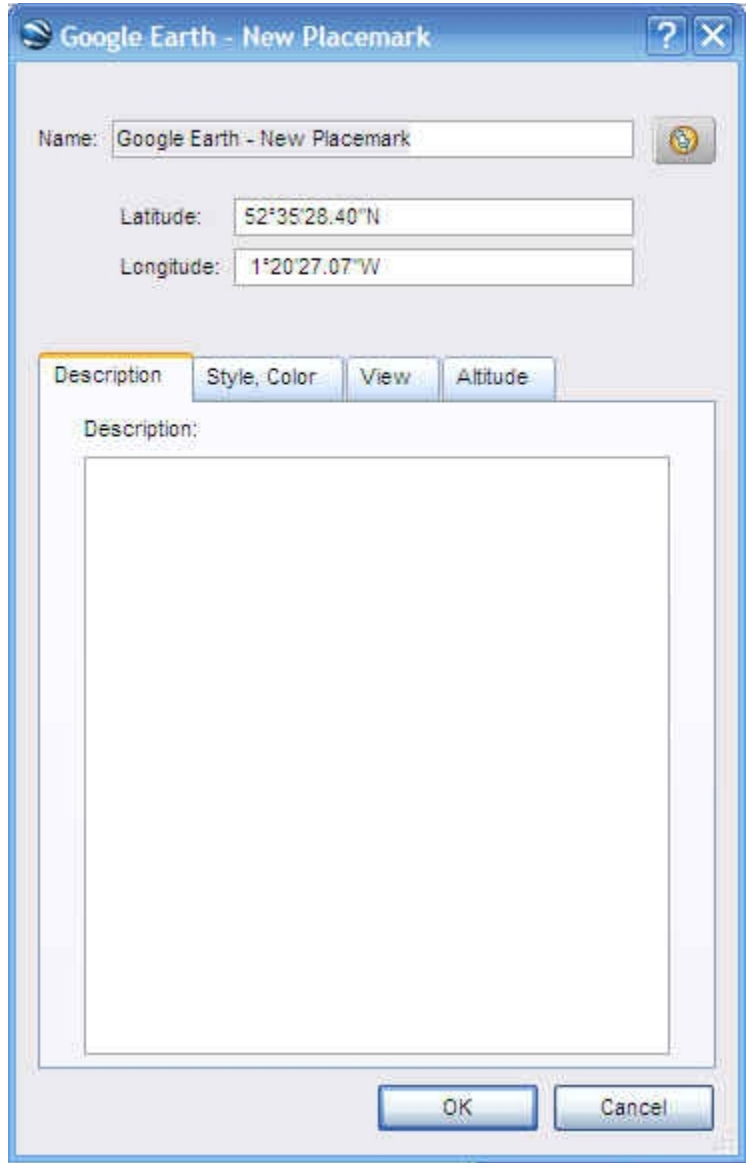
- **PLACES:** This frame is useful for organizing and saving specific locations for future access. The first item in this frame is titled **MY PLACES**. Any information saved in **MY PLACES** will be accessible when Google Earth is launched. Beneath **MY PLACES** is a folder titled **TEMPORARY PLACES**. When placemarks or placesets are downloaded or opened from a location other than **MY PLACES** they are automatically put into the **TEMPORARY PLACES** folder. Files in **MY PLACES** or **TEMPORARY PLACES** can be saved by right clicking and selecting **SAVE AS** from the popup menu. Highlighted files can also be saved by using the **SAVE** function from the **FILE** pull down menu at the top of the screen. When exiting, Google Earth will ask if the files in **TEMPORARY PLACES** should be moved to **MY PLACES** and saved. As always though, it is a good habit to save files manually and frequently, especially when creating presentations.



- **LAYERS:** The **LAYERS** area allows for personalizing the type of information displayed on the globe. There are too many options to describe. Experimenting will be best way to figure out what each one does. Simply place a check mark in the box next to the **LAYER** to activate it. Some **LAYERS** will have dropdown menus with more specific options.

Creating and Personalizing Placemarks

- **SEARCH and MARK:** There are several ways to create placemarks on Google Earth. First by either searching in the SEARCH frame in the SIDEBAR or by manually manipulating the globe in the view window find a place on the globe that you would like to mark and center it in the view window. Then click the placemark button in the TOOLBAR, press CTRL+SHIFT+P, or use the ADD dropdown menu and select placemark. Using any of these methods will create a placemark in the center of the view screen titled *Google Earth - New Placemark* with a blinking yellow box around it. Click the center of the placemark and drag it over the specific spot that you wish to mark.
- **DESCRIPTIONS:** When the placemark appears a box for editing the placemark also appears. To change the name of the placemark, simply delete *Google Earth - New Placemark* and type the new name at the top of the box. To add a description that will appear when the location is clicked on type text into the Description box.
- **ICONS:** To the right of the Name field click the button with the placemark image on it. A new box will appear with several icon options. Pick one that is appropriate for the placemark. Notice at the bottom of the box the options NONE and CUSTOM are also available. Selecting NONE allows you to add text to the map with an accessible description without placing a mark on a specific spot. CUSTOM makes it possible to use unique and personalized images by browsing through files on the computer. Once the proper icon is selected, it can be modified further by selecting the Style, Color tab from the original Placemark editing box. Options for changing the size, opacity, and color of the text or icon are available.
- **VIEW:** With the placemark editing box open it is still possible to change the view of the placemark by zooming in or out, tilting the field of view, and rotating the direction of view. After setting the view to a desirable position, select the View tab in the editing box and select Snapshot View at the bottom of the box. This will lock the current view as the default view for that placemark. When a user double clicks on the placemark, either on the map or in the SIDEBAR, the view will zoom directly to this position. The default view can be changed at anytime by right clicking on a placemark either on the map or in the sidebar and selecting Snapshot View.



With the View tab selected it is also possible to check the Center in View box. This will keep the placemark in the center of the view screen regardless of how the map is moved beneath it. This is a useful tool for creating centered views of placemarks.

- **ALTITUDE:** At times it is helpful to have a placemark that is hovering above the ground, especially in the case of tilted views of mountain peaks or multiple locations in a small area. Select the Altitude tab in the placemark editing window. By typing in a number or using the slider it is possible to lift the placemark off the ground. In a tilted view it will visibly rise from the ground. The pulldown menu to the right of the altitude field allows for multiple methods of measuring the distance between the placemark and the surface of the map. Checking the box will draw a straight line from the point on the ground to the hovering placemark.
- **VIEWING PLACEMARKS:** Placemarks are listed in the SIDEBAR. To make a placemark disappear, deselect the box to the left of its name. Selecting the box will make it reappear.
- **SHARING PLACEMARKS:** To email a placemark, select and right click a placemark. In the menu select EMAIL and PLACEMARK. If your email program is configured on your computer a message will appear with the placemark in the attachment area as a .kmz file and body text with some information about Google Earth. Simply fill in the address and add your own text before sending. Another way to share placemarks is by selecting and right clicking a placemark. In the menu select SAVE AS. Save the file to a location where you can easily find it or save it directly to a transferable device, such as a jump drive. Once the file is saved this way, the .kmz file is available where it has been saved to email or transfer at will. Both of these actions can also be accomplished through the FILE dropdown menu at the top of the screen. The SHARE/POST option allows you to share placemarks with the Google Earth Community.
- **EDITING MODE:** To edit a placemark after it has been created simply select a placemark on the map or in the sidebar, right click, and select properties. The placemark editing box will open allowing changes to be made.

Organizing Locations in Folders

- **PLACESETS:** Often creating a single placemark will only be one part of a larger presentation, or placeset. To create a placeset it is necessary to organize the placemarks in folders. To create a folder, select MY PLACES in the SIDEBAR, right click, select ADD and FOLDER from the menu. Folders can also be added from the ADD dropdown menu at the top of the screen or by pressing CTRL+SHIFT+N. A window similar to the placemark editing window will appear. Use this window to title the folder, give it a description, and select a default view. Unlike placemarks, folders do not have a specific locations on the map, but clicking a folder in the SIDEBAR will reveal the description and zoom to the default view.
- **ADDING PLACEMARKS:** To add placemarks to the folder that have already been created, left click and hold on a placemark in the SIDEBAR and drag it into the folder. An addition or subtraction sign will appear next to the folder's name. Clicking this will reveal or hide the contents of the folder. To create a new placemark in the folder, select the folder before beginning the process of creating a placemark. Arranging the placemarks is possible by clicking and dragging them into relative positions within the folder.
- **ADDING SUBFOLDERS:** To add subfolders within folders, select the folder that you wish to create a subfolder in, and follow the same procedure for creating a folder described above. One advantage of organizing placemarks in subfolders is that all the placemarks in a folder can be quickly turned on or off by selecting and deselecting the box next to the folder. This makes it easy to quickly show all the related placemarks on a map, compare placemarks from different categories, and remove unneeded and obtrusive placemarks from view.
- **SHARING PLACESETS:** Share placesets by selecting a folder and following the same directions as for sharing placemarks described above.

Adding Style and Images to Descriptions

- **HTML:** Google Earth allows for the limited use of Hypertext Markup Language (HTML) in the description box for a placemark or folder. A few basic commands can be used to enhance descriptions. HTML is a computer language and is governed by the rigidity of a machine mind, so be careful in following the examples. Most HTML codes are set in carats, <>, and they typically have an opening command, such as <center>, and a closing command, </center>. Any text that appears between the commands will be affected.
- **TEXT EFFECTS:** The following basic codes will allow you to manipulate the text:
 - **Bold:** Text
 - **Italics:** <i>Text</i>
 - **Underline:** <u>Text</u>
 - **Color:** Text or Text
--Google Earth recognizes the following color names that can be entered into the first example: white, red, maroon, pink, orange, yellow, green, blue, navy, purple, gray, black.
--More color options are available through use of the hexadecimal system, as shown in the second example. Information about the hexadecimal color system is available at http://www.w3schools.com/html/html_colors.asp.
 - **Size:** Text
--The size equivalents for this command are as follows: 1=8 pt., 2=10 pt., 3=12 pt., 4=14 pt., 5=18 pt., 6=24 pt., and 7=36 pt.
 - **Color and Size:** Text
 - **Alignment:** <center>Text</center> or <p align="center">Text</p>, <p align="right">Text</p>, <p align="left">Text</p>
--Although the code is valid, "left" is the default and would never need to be used.
 - **Line break:**

*--The repeated code

 will skip a line. Because of the difficulty in indenting, blank lines are used to indicate new paragraphs in HTML.*
- **ADDING LINKS:** Google Earth automatically converts any web addresses typed into the description box that begin with either **http://** or **www.** into active links. Simply type or paste the address into the description. Adding a link to text can be done with the following code:

```
<a href="http://earth.google.com/">Google Earth</a>
```

In this example the address would not be shown, but Google Earth would be an active link to the address in quotes.

- **ADDING IMAGES:** The code for adding an image is as follows:

```

```

Notice that it is necessary to include the entire path name to the image on the computer.

To control the image size, add pixel dimensions for width and height:

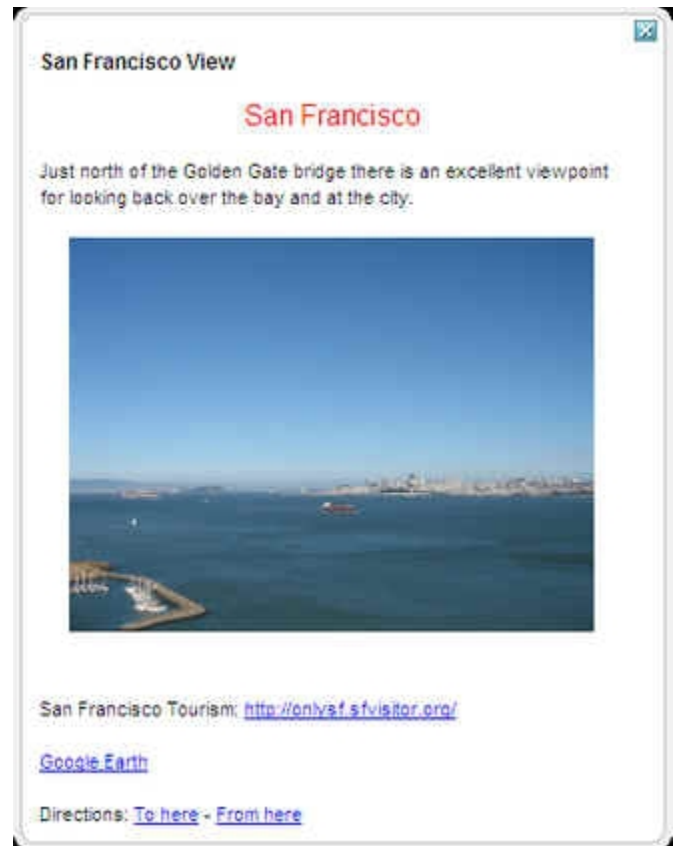
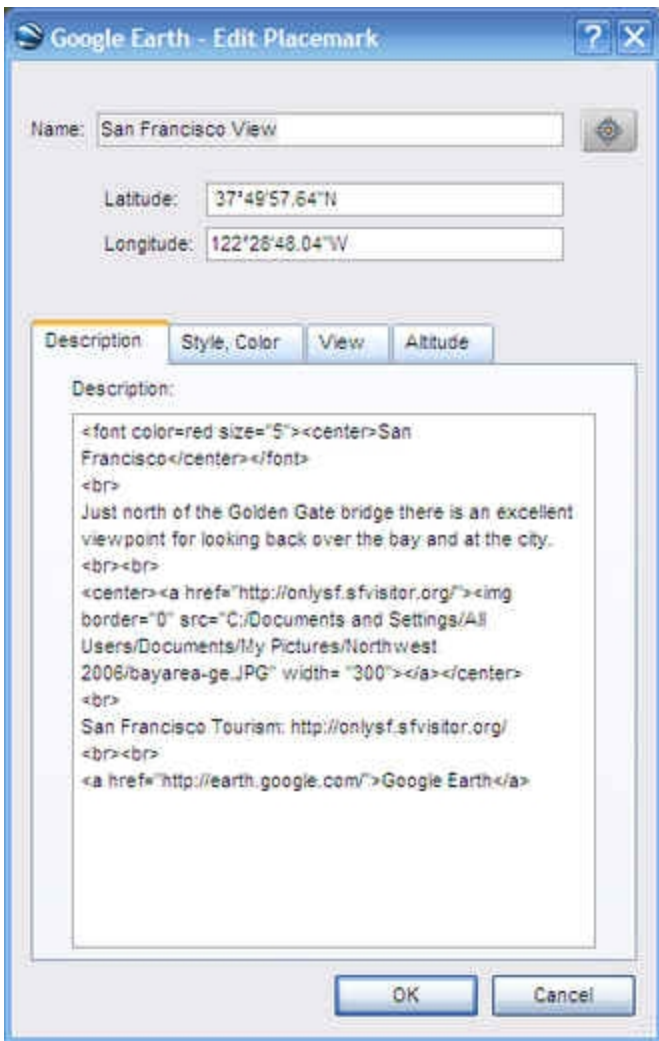
```

```

Adding the dimensions will resize the image, but if the aspect ratio is not the same as the original image it will be distorted. Defining just one dimension will keep the proper aspect ratio. Images included in descriptions will be embedded in the .kmz file if it is emailed or saved to a location other than MY PLACES, so even though it is possible to control the size of an image in a presentation, resizing images before including them will keep the files as small as possible. Good free image resizing programs can be found online at <http://www.irfanview.com/> and <http://www.faststone.org/>.

Using some of the codes from above it is possible to center images and add hyperlinks as well. Here is an example of a centered image that will open a link when it is clicked:

```
<center><a href="http://onlysf.sfvisitor.org/"></a></center>
```



The use of html code in the description on the left will yield the popup description on the right when accessed by a visitor.

Tips

Google Earth has a knowledgeable and friendly user base that is happy to share ideas and tips with fellow users. The following links are useful starting points for finding tips and meeting other users who can share their knowledge:

Google Earth Community: <http://bbs.keyhole.com/ubb/ubbthreads.php/Cat/0>

Collected Google Earth Wisdom: <http://bbs.keyhole.com/ubb/postlist.php/Cat/0/Board/wisdom>

Google Earth User Guide for Version 4: http://earth.google.com/userguide/v4/google_earth_user_guide.pdf

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

The best way to learn is often to play, and Google Earth has numerous features which are not worth trying to explain in this limited space. Once you have grasped a basic knowledge of the software, explore the different dropdown menus and features.

FINDING SPECIFIC LOCATIONS: Finding specific locations, especially outside the United States, can often prove to be a difficult task. Small towns, geographic features such as rivers and mountains, or other locations such as ancient ruins are frequently missed by searches. Considering the sheer volume of identifiable locations on the Earth's surface this is certainly understandable. The Google Earth Community is a useful resource in locating some places. Either search the Community on the web for a specific location, or if you know the approximate location of a site, find it on the Google Earth globe, zoom in and turn on Google Earth Community in the LAYERS frame of the sidebar. If someone has already identified the location a marker will appear.

The Internet also has numerous sites that include longitude and latitude coordinates for specific places, which can be entered into the SEARCH field on Google Earth. Two particularly helpful sites for worldwide locations are the following:

GEOnet Names Server: <http://earth-info.nga.mil/gns/html/>

Falling Rain Geomatics, Inc.: <http://www.fallingrain.com/>

Finding obscure locations does involve some patience, and to insure accuracy, locations should be verified with more than one source when possible.

Making Submissions to this Community

The intent of this community is to create a space where educators and students from the elementary level to university level can share quality placesets for use in the classroom or as support material. If you have created a placeset that relates to a work of literature, historical event, scientific topic, or other school related subjects please consider sharing them at this site. However, please do not submit links to single placemarks.

To submit a placeset, post it in the Google Earth Community through the FILE dropdown menu in Google Earth or by visiting <http://bbs.keyhole.com/ubb/ubbthreads.php/Cat/0>. Once it is posted, email the web address of the post to david.herring@tusd1.org so a link can be added to the list.

Be sure to include some descriptive information with your posts. The description box for the main folder in a placeset is a great place to include a brief overview of the placeset and to give yourself credit for the work. If you plan on submitting the placeset to this site consider adding a link to <http://edweb.tusd.k12.az.us/dherring/ge/googleearth.htm> in the description.

Also, if you find effective ways of using Google Earth in assignments, email the assignment description with one or two illustrative placesets for inclusion in the community.