

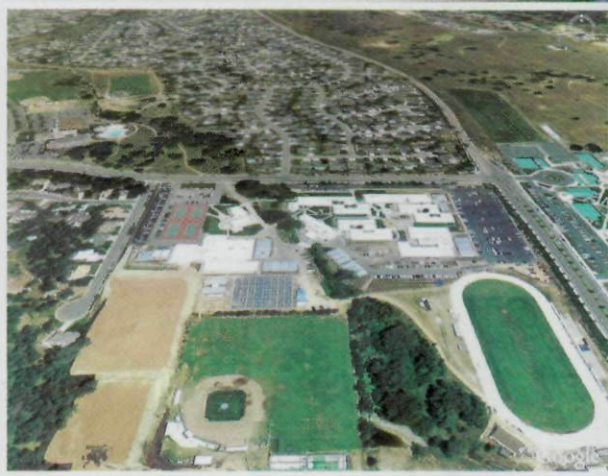
# Got the world

Google Earth serves up more than a

**A teacher in Texas** has assigned each of her first graders a state to research. She hauls out an old globe and some foldout maps for a more detailed examination of the various states. Unfortunately, since the school doesn't own all 50 maps, not all of the students can view their assigned states.

Meanwhile, in another Texas elementary school, a teacher is launching Google Earth. Within a few clicks of a mouse, her class is transfixed by an image of a virtual globe. The teacher enters the school address and the sphere rotates, panning across North America and zooming in until an aerial view of the school fills the screen. Students spy their building, the parking lot, the adjacent field, and the playground. She shifts the view, and suddenly some kids cry out with excitement—they've spotted their homes, which prompts a discussion about the importance of one's neighborhood. Zooming out a bit, the name of their city appears, along with some local landmarks, including the public swimming pool, fire station, and the mall. Pulling back further, individual houses get smaller, then disappear, as other cities and counties appear. Zooming out even more, the kids can now make out the shape of their state, then their country, and, finally, their continent.

One of the students, Billy, is reporting on our largest state. "Alaska is snow and ice," he declares. "Everyone lives in igloos," chimes in a classmate. The teacher asks Billy to help her locate Juneau using Google Earth, and soon the globe's spinning northward, closing in on its target. Images of ice and snow fill the screen. Zooming in closer, the kids spy boats in the water—Wait a minute? Isn't the water supposed to be frozen?!—then



**By Anna Adam and Helen Mowers**

# on a Screen

## geography lesson



streets and houses, which resemble their own. So much for the land of igloos and dogsleds. Then the teacher turns on the Degrees of Confluence layer—a nifty feature of Google Earth that lets you access various points of interest with a single click. Now they're seeing pictures of Alaska from a ground-level perspective ([www.confluence.org/confluence.php?id=16932](http://www.confluence.org/confluence.php?id=16932)). Students begin to note similarities and differences between Juneau and their hometown.

While students in the old-school classroom—the one with the globe—can certainly learn to identify their state, it's difficult for them to get a sense of their relative place in the world. In contrast, the students using Google Earth can locate and placemark their school and, therefore, better orient themselves, even when the globe is zoomed out completely and their school fades from view. And what better way to impart global awareness? Now, if only the teacher can get the kids to understand that it's not a live picture and to stop asking to run outside and wave up at the cameras!



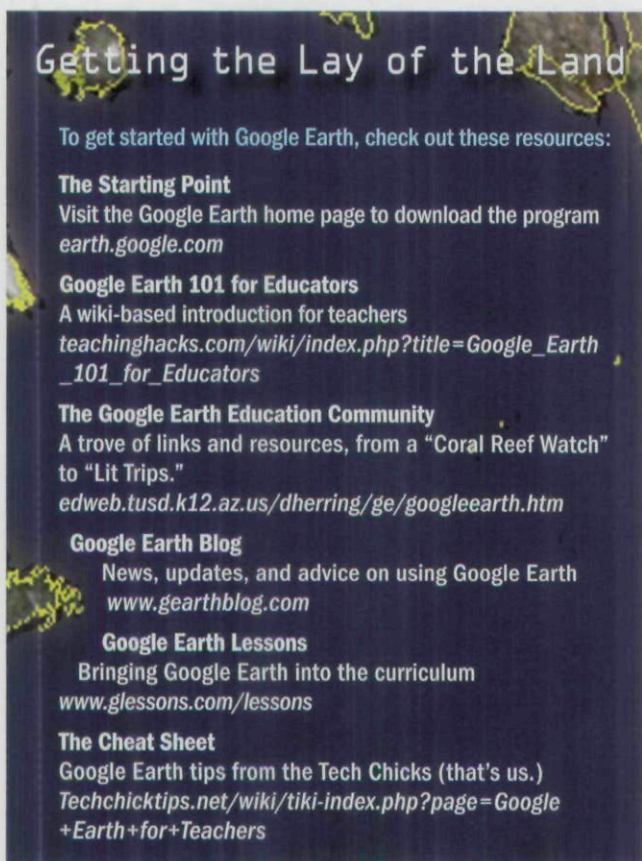
### On the face of it, Google Earth is just plain fun.

Just about every user who has launched the program has keyed in their own address, with hopes of retrieving an aerial view of their house or even a favorite restaurant. Then there are the famous landmarks. Mount St. Helens, for one, is mighty impressive using the terrain layer, while the Arc de Triomphe and the Eiffel Tower are rendered in such high-resolution detail that you can see people visiting the sites. Unfortunately, most users—including educators—seem to stop there, playing armchair tourist without fully exploiting all that this dynamic program has to offer.

For starters, Google Earth is perfect for teaching geography. Subscribe to Where in the World ([intelligent.com/where](http://intelligent.com/where)), for example, and have your students listen to podcast clues in a find-the-location game created by students worldwide. Clues relate to math (the population of this city is half that of the population of New York City), history (Ben Franklin was born in this city), even science (the average temperature of this location is 82 degrees in summer and 45 degrees in winter). Kids research the answers to help them determine the correct locations, which they can placemark in

Google Earth. This fun game may even inspire your students to devise a geography quiz of their own.

**But there's a lot more to Google Earth.** Educators at every grade level and in every subject area can use the program to enhance learning in fun and engaging ways. With students in primary grades, use Google Earth to zoom in on a parking lot, let's say, and have the kids count the cars. Within more detailed views, students can count the number of red cars versus white cars and create a graph. Older students can practice the concept of fractions and determine percentages based on data gathered from parking lots or on roadways.



### Getting the Lay of the Land

To get started with Google Earth, check out these resources:

- The Starting Point**  
Visit the Google Earth home page to download the program  
[earth.google.com](http://earth.google.com)
- Google Earth 101 for Educators**  
A wiki-based introduction for teachers  
[teachinghacks.com/wiki/index.php?title=Google\\_Earth\\_101\\_for\\_Educators](http://teachinghacks.com/wiki/index.php?title=Google_Earth_101_for_Educators)
- The Google Earth Education Community**  
A trove of links and resources, from a "Coral Reef Watch" to "Lit Trips."  
[edweb.tusd.k12.az.us/dherring/ge/googleearth.htm](http://edweb.tusd.k12.az.us/dherring/ge/googleearth.htm)
- Google Earth Blog**  
News, updates, and advice on using Google Earth  
[www.earthblog.com](http://www.earthblog.com)
- Google Earth Lessons**  
Bringing Google Earth into the curriculum  
[www.glessons.com/lessons](http://www.glessons.com/lessons)
- The Cheat Sheet**  
Google Earth tips from the Tech Chicks (that's us.)  
[Techchicktips.net/wiki/tiki-index.php?page=Google+Earth+for+Teachers](http://Techchicktips.net/wiki/tiki-index.php?page=Google+Earth+for+Teachers)

While you can certainly create your own engaging lessons based on the needs of your students, there are plenty of existing resources for harvesting the educational bounty offered by Google Earth. At the Google Earth Community Forum ([bbs.keyhole.com/ubb/postlist.php/Cat/0/Board/EducationEducators](http://bbs.keyhole.com/ubb/postlist.php/Cat/0/Board/EducationEducators)), you can download teacher-created projects such as Math in Las Vegas ([bbs.keyhole.com/ubb/showthreaded.php/Cat/0/Number/197706/page/2/vc/1](http://bbs.keyhole.com/ubb/showthreaded.php/Cat/0/Number/197706/page/2/vc/1)), in which students can solve word problems, such as determining the perimeter of a parking lot given its length and width. This lesson also incorporates live Webcam feeds to analyze traffic patterns. (For more resources, check out "Getting the Lay of the Land" above.)

All of the downloadable lesson ideas use Google Earth placemarks, which you can download and post to a school server for students to access. You can also create your own placemarks—a method for bookmarking your favorite destinations. By making a "places" folder, students can add multiple placemarks

and create a virtual tour of the life of a famous person. How about creating placemarks for each location that Sacagawea visited on her journey with Lewis and Clark? Placemarks saved to folders can be displayed so that each location appears one at a time with Google Earth zooming and panning to each new location, creating a virtual expedition in which students can follow along. To help students picture the area as it was in Lewis and Clark's time, overlay historical maps, which you can access via Google Earth's layers. You can also download and overlay your own maps with a little bit of practice.

**Google Earth can also enhance language arts.** Take the popular *Magic Treehouse* series by Mary Pope Osborne. After reading *Viking Ships at Sunrise* (Random, 1998), download a map of the Viking's voyage from the Smithsonian National Museum of Natural History ([www.mnh.si.edu/vikings/voyage/voyagehome.html](http://www.mnh.si.edu/vikings/voyage/voyagehome.html)), then overlay it on Google Earth and follow the journey. How far did Amerigo Vespucci travel to discover America? Use the program's built-in ruler to determine the distance. Locate the moors that Cathy and Heathcliff roamed in *Wuthering Heights*, or follow the travels of migrant children from Mexico to labor camps in California (à la *Esperanza Rising* (Scholastic, 2002) by Pam Muñoz Ryan). While reading Lois Lowry's *Number the Stars* (Houghton, 1989), use Google Earth to spur discussion of the Nazi occupation of Denmark, Belgium, Norway, and the Netherlands during World War II. Starting with Poland, have students follow Hitler's conquests across Europe. How about following Don Quixote's travels as he searches for Dulcinea amidst the Castilian landscape? Good books have always helped kids appreciate the importance of geography, history, and culture—Google Earth only serves to reinforce those connections.

In fact, Google Earth's built-in layers provide so many learning opportunities, the biggest problem might be prying yourself away from the application. Within the Featured Content layer, which contains multimedia elements related to highlighted sites, a class can watch Gombe Reserve chimps, while reading the blog of the Jane Goodall Institute. The Google Earth Community layer features the pooled resources of other Google Earth users. Here you'll find Ants—AntWeb, which provides links to, well, ants—a resource sure to delight the budding entomologist in your classroom.

Google Earth is also a great tool for understanding current events. Data maps by Maplecroft ([maps.maplecroft.com](http://maps.maplecroft.com)) can be downloaded and viewed on Google Earth as an overlay. For example, import the Maplecroft map on human-rights violations into Google Earth to launch a class discussion of Darfur. Or take data on education levels and see how it relates to child labor practices around the world. Then there's the overlay "Greenhouse Emissions." As one of the largest producers of greenhouse gases, what effect is our nation having on the global environment?

In an increasingly "flat" world, geographic understanding has never been so critical. Google Earth is just the tool to take us, together with our students, on that journey of discovery.

*Both educators with Killeen ISD in central Texas, Anna Adam and Helen Mowers are the creators of the podcast series Tech Chick Tips ([techchicktips.net](http://techchicktips.net)).*

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