

# MAPS FOR CHILDREN ON THE WORLD WIDE WEB

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The focus of the Map Use Commission is on how individuals use maps in the many environments in which they occur. In my current thinking there are four dimensions to map use:

- 1 - the individual user
- 2 - the map use environment
- 3 - the map use task
- 4 - a user community for each of various types of maps

For this study, children make up the population of individual users. As such these users range from young children who have few concepts of the earth, regions, spatial representation, scale, direction, and symbolization to older children who may be quite comfortable using some types of maps in the pursuit of knowledge or in the exploration of their environments, be those environments local, regional, global or extra-terrestrial. Some individuals irrespective of age have various visual or mobility impairments which impact on their ability to use maps. In total, children are a diverse group of map using individuals. But, they stand apart as a group because their youth has limited their opportunity to gain knowledge of the concepts and themes represented on maps and the experience of working with maps.

Every map is seen in a particular use environment, the second dimension of use. The traditional map is printed on paper and fixed for all time. The print medium gives the capabilities of high resolution with fine lines and text. Individuals can linger over the paper map, measure it, draw on it, cut it up, etc. By contrast, maps in computer displays represent a different use environment. The format of the map is limited by the size of the display and for large maps the user will have to pan across the map or zoom in and out to see the entire map. Resolutions are limited by the physical display system. This may impose severe restrictions on the ability to use text and a variety of symbols. In most cases, at present, users cannot interact with a map display but it is common to see animated displays. On the other hand, some maps on the Web can be updated frequently so that the maps being displayed are always current. The World Wide Web presents a unique map use environment. Between the extremes of the printed paper map and the current Web map, children will also see maps in front of the classroom, on television, and in magazines and textbooks.

For children the map use task normally will be quite basic. Children can be expected to read maps, and perhaps do some analysis and comparisons. Children may make maps to explore patterns and relationships, as well as to learn some basic concepts of maps and mapping. However, we should not look for younger children to use maps for decision making or navigation. In many cases the motivation for children to use maps will be dictated by a teacher to carry out a task specified by that teacher. By contrast, on the World Wide Web students are more likely to encounter maps that are not part of a task set down by others.

User communities provide a fourth dimension to map use. The types of maps that are used and how they are used are determined by the users who consult and work with maps to address the issues important to that community. For example, meteorologists and atmospheric scientists have their maps, which are unique to their areas of interest. The subject matter, scales of interest, content, symbolization, frequency of updating, and formats of presentation are designed to meet the needs of this user community. The meteorologists and atmospheric scientists must know how to use these maps to function in their profession because the maps are an integral part of the practice of the profession.

There are many other map user communities which have their own types of maps and forms of map use required to serve the demands of those communities. Among these communities are geologists, geomorphologists, soil scientists, urban planners, transportation planners, site developers, facilities managers, navigators in the air, on the land, or at sea. The list goes on and on. Educators of children form still another map user community for many maps are produced and distributed to serve as educational resources. We should expect to see maps designed for education purposes on the Web.

## **The World Wide Web**

For this study the World Wide Web is the map use environment that is examined and children make up the map using individuals. The tasks and user communities are considered as they are encountered. The Web on the Internet is the newest communication channel to gain wide-spread acceptance. The Web, or WWW, is only about three years old but its acceptance has been explosive in that short time. There are now tens of millions of users world-wide. With so many potential users, everyone who wants to reach an audience feels compelled to be 'on the Web.' Thus, corporations, government agencies, universities, schools and even individuals are developing Web pages to show their presence.

Because the Web supports a full color graphical interface, most presentations employ graphics in many forms including photos, maps and imagery. In many ways the Web is an ideal place to display maps because they are relatively easy to produce for display on the Web and they have the potential to reach very large audiences without the expense of printing, advertising and distribution.

With the explosion of the Web we are developing a new vocabulary. It is now common to see Web addresses on television and in popular magazines. The address is known as a URL, or Universal Resource Locator, and has the form of: <http://www.nationalgeographic.com/> I cite the example from the National Geographic Society because this organization's name is well known and the address is straight-forward. Most addresses will contain some abbreviations and will be broken into smaller segments, but they all have this basic form. The '.com' part of the name indicates that this site is operated by a commercial firm. Other extensions include: edu for educational institutions, org for organizations, mil for military, and gov for government. Sites outside the United States will have addresses with a suffix such as jp for Japan, ca for Canada, cl for Chile, and ch for Switzerland.

## Finding Sites On The Web

Finding items on the Web ranges from simple to complex and chancy. There are two basic ways to find things. One is to employ a 'search engine,' Search engines are programs that take the keywords you give and search through great numbers of Web sites to find pages that have the words or phrases you specified. It is not uncommon to specify something like 'children and maps' as keywords and have the search engine return more than 400 sites that contain these words. Getting thousands of hits is not unusual. Because no one can view hundreds of sites, users either pick the top 20 or so, or they refine their search in the search engine. For an introduction to seven of the more common search engines, look at "The Spider's Apprentice."

The other good way to find things on the Web is to pick up recommendations from our colleagues. Most professional cartographic organizations now share information about significant sites on the Web. Here are some examples. In the recent Association of American Geographers Cartographic Specialty Group Newsletter, Turner (1996) gave twelve sites that he found to be particularly noteworthy. He included a discussion of those sites in his remarks. The newsletter of National Council for Geographic Education (1996) has a regular section entitled "On the Internet" where users will find discussions of sites with full URL's. Mercer (1996) summarized the presentations of a session at a conference and included specific citations to many interesting cartographic sites. Further, there are a number of Web pages that consist of listings of URL's of interest to cartographers and map lovers. Of particular note is that from George Mason University. Using the 'hyper' capabilities of the Web, users can jump from site to site to follow many threads, some of which will introduce you to maps.

A word of caution is in order. The Web is dynamic and there are few rules about what can be put on the Web and by whom. New sites spring up daily and old sites are removed or revised. Therefore, sometimes it is difficult or impossible to relocate something you saw on the Web earlier. What is discussed here is what the author found when researching this paper. Readers of this paper may not be able to locate some of these sites or find specific images because of subsequent changes. Similarly, readers are likely to find new sites that better illustrate points made in this paper-- sites that were not available when the research was carried out or sites that were overlooked.

## What Is On The Web

The author has undertaken the task of surveying the Web and evaluating what is available for and about children and maps. This search was done using search engines keying on the words 'maps, geography, children, kids,' as well as looking at many sites recommended by colleagues. Many pages have been examined. This survey has not been exhaustive but it is representative of what is available on the Web. In general, there is not much on the Web about maps that is specific for children, although there are many sites that imply they have something for or by children.

The author has grouped the findings into four general categories:

- 1 - Sites for young children where a parent will have to help the child by reading directions and typing responses
- 2 - Sites directed specifically at children who can read and work on their own

3 - Sites based on school projects or targeted at school activities

4 - Sites with appeal to all ages: children as well as adults

### Sites for Young Children

The only example that was found that fits into this category comes from Australia where a 5 year old boy named Alex conceived of Max, his Koala friend. The home page notes that Alex's father helped with this site. The site has short stories about Max. Young people from around the world can correspond with Max and virtually host Max at their homes. Included at the site is a map of Max's World Tour. The quality of the map leaves much to be desired, but it lets young people see their home town posted on a world map for all to see. And, by clicking on the name of the town, information is given about the young person hosting Max. Even though the parent has to help, it must be a powerful experience for a young child to see his or her entry posted on the world map along with Max's picture.

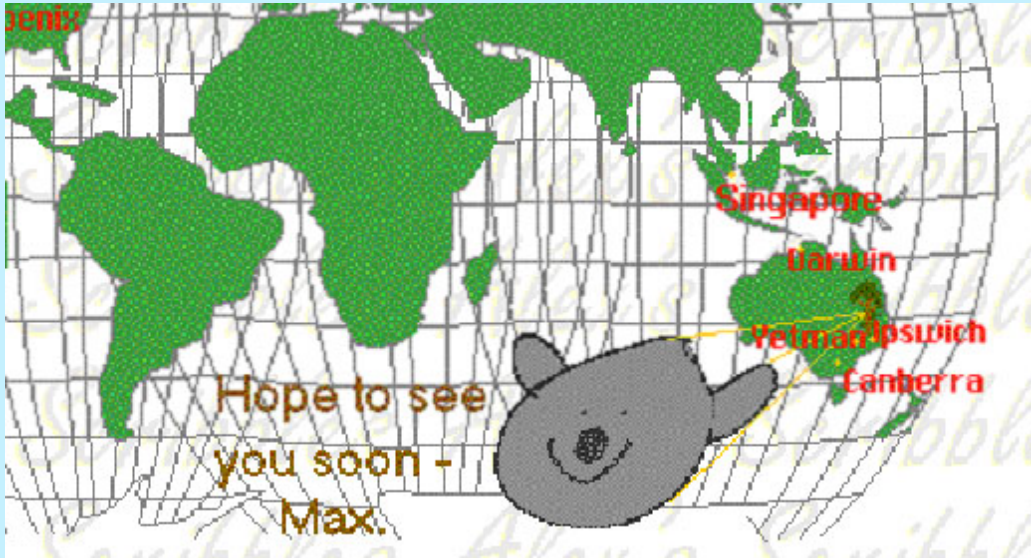


Figure 1: A portion of the World Map with Max

It is likely that there are other sites of this nature, but they do not rank very high on the returns of the search engines. And, as more individuals get computers in their homes and learn how to program for the Web, we should expect to see young people posting their writings and art work. Included among these pages will be maps made by students as well as maps made for students. Alex and Max seem to be pioneers.

### Sites Directed Specifically At Children

Many of the sites on the Web are pages designed to help users find other sites.

Because the Web is becoming a place to present advertisements, some sites are designed to attract users by giving links to sites that appeal to the potential audience. Yahoo provides a search engine but it also has a site that has a catalog of topics that users move through to find sites of interest. Yahoo provides a category for kids which leads to the Yahoooligans site. This site is definitely targeted at children, but they have to be able to read and type so that they can work on their own. At the first level, this site has a category 'Around the World' which leads to the next level where users can select 'Geography.' At the next level an option is 'Maps.' At the time of viewing the map category had 18 links to other sites.

Pursuing these links takes one to places like 'Map Maker, Map Maker, Make Me A Map.' Here we find a site targeted at young people in which the cartographer has a sketch of a pirate map to show children how maps can be used. There are a number of steps below this introductory level, but in the first version of this page none of those steps below contained a map. Instead visitors were able to see drawings of scenes or definitions in text format. For example, students can find out about Equal Area maps by reading the definition: "the shape of the continents and directions (north, south, east, west) are distorted, but the size of the continents in relation to one another are correct." The author was disappointed in this site because it starts with so much promise only to degrade into a definition with no supporting graphics. However, revisiting the site I found the creator had included a Sinusoidal world map outline to illustrate the appearance of an equal-area map. This map adds significantly to the site.

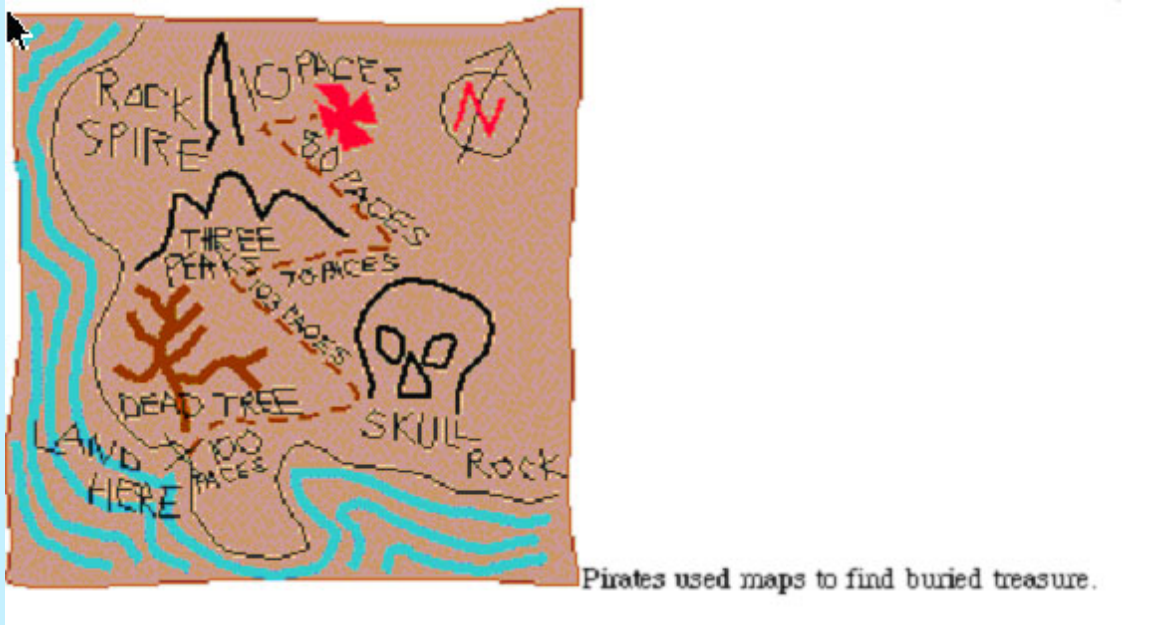


Figure 2: The Pirate Map from the Map Maker, Map Maker site.

From 'maps' under Yahoo!igans, we find regional and national maps. Clicking on China takes one to a site where we find the image of the large shaded-relief printed map of China distributed by the U.S. Central Intelligence Agency. This map is too big to be displayed on most monitors so users have to pan around to see all of China. It is an informative map, but it is not a map targeted at children, nor is it a map designed for presentation on the Web. Another option takes viewers to the page of the U.S. Geological Survey where we find a presentation on 'Finding Your Way With Map and Compass.' While this site is mostly text, it does have some graphics to illustrate the discussion. Like so many of these sites, the content has appeal to some children but also has appeal to some adults. Such sites are discussed below in another category. No sites were found with maps specifically designed for use by children, but then not every possible site was viewed.

### Sites For School Projects and Activities

There are now a number of Web sites put up and maintained by schools. In the near future we should expect to see great numbers of schools with their own Web sites as politicians promise to have all 12 year old children on the Web. At least one site serves as a register for schools who want to be listed in a directory of schools on the Web. In the U. S., this site comes up with a map of the United States as well as the list of other countries with schools in the registry. One can click on a state on the map to go to the next level to find specific schools in that state. The author clicked on 'Japan' and was given a list of registered schools in Japan with Web sites, which led to viewing the Ohayabu Elementary School Gifu Page. On this page one finds an outline map of Honshu with a red heart centered over Gifu. This is illustrative of many school-supported Web sites where there is a map to show where the school is located.

Some sites are designed to bring entire classes of students to the site in cooperation with the teacher. In 1995, Will Steger and colleagues trekked from Russia to the Northwest Territory, Canada, across the North Pole and students were invited to follow along electronically. Many classrooms participated in this virtual journey. At the time, this trek received considerable publicity. The site describing that experience contained a map in a Polar projection showing the route that was followed. However, when trying to revisit that site in late October, 1996, it could not be found. It was probably removed because the material is now very dated.

Whalenet is the name of a similar site where classes are invited to follow along with data collection and carry out various activities. Whales have been tagged and are followed with satellites. The site has a major education component and provides sample educational activities. Of the eleven suggestions, many involve maps and mapping. The navigation activity suggests plotting the course of the ship and carrying out other navigation tasks on charts which can be purchased for this activity. For bathymetry it is suggested that students plot profiles of the bottom topography along the routes of the ships and then try to determine if there are associations between the bottom topography and sightings. Another suggestion is to have students make a topographic model of the bottom of the basin being studied. Maps and mapping are integral to the activities of this Web site. Blue Ice with a focus on Antarctica is a similar site.

There are at least two atmospheric-centered sites that have programs designed for teachers and students, or students alone. The 'Kids as Global Scientists Program' employs a real-time inquiry-based weather curriculum to engage middle

school students. As of this writing this program has been announced as, "Come join middle school classrooms all over North America and the world as we COLLABORATIVELY study the weather of 1997." In the program students will read satellite and radar maps with interactive programs. They state they offer 'A complete guide to understanding the learning about weather maps and images.'" On the University of Illinois UIUC Geosciences Web Server one can find similar educational material designed by teachers for use in the classroom. There are a number of focused sections at this site including one on El Nino. Here we find a well designed, animated map of the Pacific Basin in which the warm waters flow eastward under El Nino conditions. This map is presented at a level that should be meaningful to most middle schools students.

The U.S. Geological Survey has devoted part of their pages to teachers and education issues. There are educational entries for the earth sciences as well as the mapping division of the Survey. "Teaching in The Learning Web" is a collection of educational resources that can be used in the classroom to teach earth science concepts. They go on to note that 'Exploring Maps is an interdisciplinary set of materials on mapping for grades 7-12 where students can learn basic map-making and map-reading skills and will see how maps can answer fundamental geographic questions: "Where am I?" "What else is here?" "Where am I going?" ' While these words are appealing, the statements are really introductions to booklets and posters that are available from the Geological Survey. To take advantage of this site, the teacher has to get material from U.S.G.S. to carry out the suggestions offered by this site. But, many teachers and students would not know about these materials if it were not for the Web.

As the World Wide Web matures, we should anticipate finding many sites of these types. Schools, educational communities, government agencies and professional societies working in cooperation with each other have a motivation to develop activities that will stimulate children by looking at real-world problems or following along with news-worthy investigations. To create and maintain stimulating sites on the Web gives all of these players recognition and today that recognition is important. At some of these sites, students and teachers will be introduced to the use of maps as tools for the study and analysis of bigger projects.

### **Sites For Children As Well As Adults**

By far the greatest number of sites are designed to tell a story to anyone who is interested, be they children, adults, or the elderly. At the Virtual Galapagos site viewers are presented a map of the Islands and Ecuador as part of a presentation on and virtual fieldtrip to the islands. Users can zoom in on individual islands or the mainland. The Virtual Tourist and Lonely Planet sites give viewers general information, tourist guides and pictures for thousands of places around the world. Users can start with a world map and zoom in on countries and selected smaller areas. At ever larger scales, users are given the option of clicking on an icon and seeing a photograph of something at that place. Both of these sites employ maps that are designed for the Web. However, a number of sites have only copies of paper maps scanned on to the Web. In most cases these papers maps are not well presented on the Web.

Some sites will appeal to more advanced children who have a particular interest in maps and already know much of the vocabulary. From Switzerland we find Earth Viewer where users can select how they want to see the earth as a map. The basic map will be a world map showing day and night at the moment imposed on hypsometric tints of elevation over the land. The site gives the viewer many options on how to customize a world map, including where in space you would want to be to view the earth and what current satellite imagery you want imposed on your map.

There are a number of sites on the Web with weather related maps and satellite images. Many of these maps and images are designed for presentation on the Web, which is nice to see. Users can view surface and upper level maps of present and projected conditions. There are regional and global maps with satellite imagery imposed as part of the symbology. Some maps are dynamic composites portraying the change of conditions over the past few hours. The young person who will be able to benefit from these maps will have to have some knowledge of meteorology. But, there are older children who have such interests and certainly some children view these great collections of maps and images representing the weather and climate of the world.

Canada's Energy and Natural Resources provides an interactive mapping tool for the geographic study of Canadian issues. From this site users are able to examine any of a number of thematic issues containing a series of map layers, selected and created by the geographical researchers and cartographers in the government. This site provides a powerful mapping tool. The student who can master this site will have demonstrated an understanding of thematic cartography.

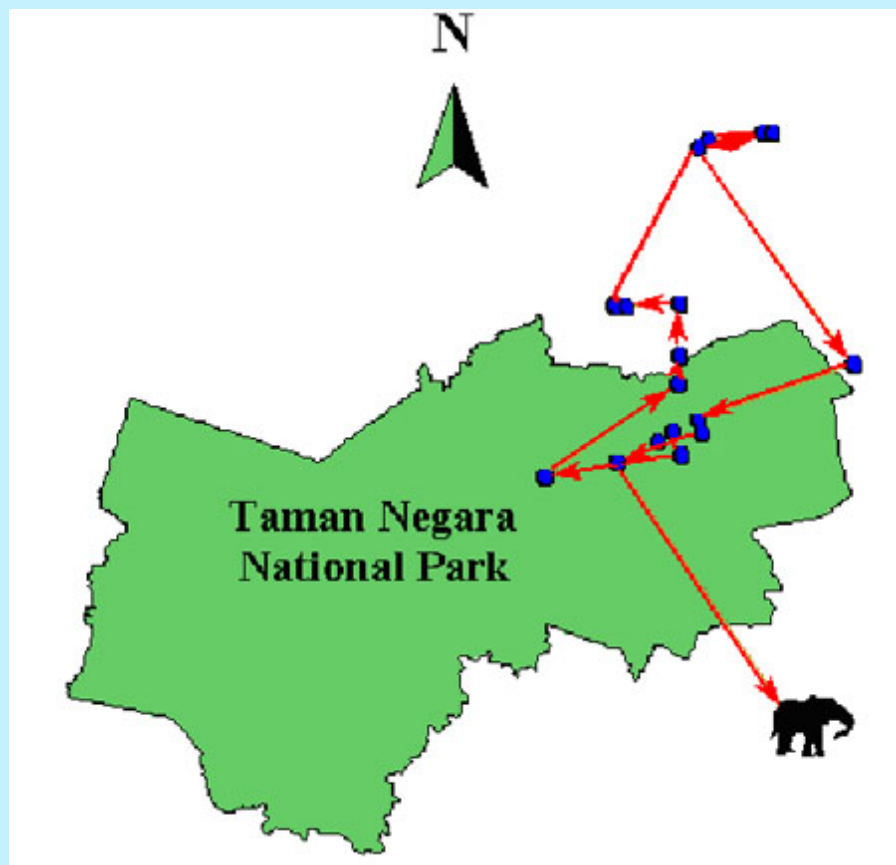


Figure 3: Map showing the movements of Mek in Malaysia (<http://www.si.edu/elephant/elemek.htm>)

Malaysia has a program to translocate rogue elephants from populated areas into more natural areas. There is a site where children and adults are able to view photos of many steps in the process and see maps of where they have been relocated. The Web presentation focuses on two elephants which have been outfitted with collars and are being tracked with satellites. For those with the more advanced Web browsers, users can see maps portraying the day to day movement of each elephant. The base maps are quite detailed in terms of showing land cover in this area of forest and wetlands. Imposed on this base map is an icon of an elephant that is stepped across the map as the date is shown in one corner of the map. This is called an 'interactive map' but it is not interactive, although it is crudely animated. While this site is designed for everyone, it should have particular appeal to children because of the nature of the subject.



Figure 4: One frame of Yakko pointing to the world map as he names countries.

Certainly, one of the more entertaining introductions to place-name geography is Yakko's World, where we find the Warner Brothers Animaniacs cartoon character Yakko singing a lively song while he points to a wall map and points out country after country. This makes place-name geography exciting with rhyming lines such as:

"United States, Canada, Mexico, Panama, Haiti, Jamaica, Peru;  
Republic Dominican, Cuba, Caribbean, Greenland, El Salvador too  
...

India, Pakistan, Burma, Afghanistan, Thailand, Nepal, and Bhutan;  
Kampuchea, Malaysia, then Bangladesh, Asia, and China, Korea, Japan  
... "

Supposedly, this was created as a cartoon that has been shown on television. Copies of this cartoon or the song alone are available on the Web. The full cartoon is a large file that has to be downloaded and installed on the home computer, because the Internet does not have the bandwidth to display something this complex in real-time. While this cartoon appeals to children, adults love it too. It is a good example of what can be done with maps.

### **What Is Not On The Web**

The cartographer or friend of maps can think of many things that could be shown on the Web. While the potential is there, many things are not there. Thompson (1996) looked for interactive maps on the Web and concluded: "After looking at many sites, some minimally interactive maps, and some middling interactive maps on the Web were found. However, no highly interactive maps were found in this search of the Web." Based on the research for this paper, a similar statement can be made about maps for children on the Web.

The lack of good children sites has prompted this author to consider what could be done to present better maps for children in this unique environment where users can interact with the map on the screen. It is a hyper environment where the flow of interaction can go in many directions depending on the response of the user. This is not possible with paper maps or atlases.

### **What Could Be On The Web**

On the Web we should provide maps and have the child examine the map and make interpretations for a specific purpose. We will reward the child for making the correct decisions based on those interpretations. In one case, students will be presented with a simple map of an urban environment with a few streets. There will be four parks, each spaced equal distance from the center. Students will be asked to go from their home in the center of the map to the park that is three blocks south and two blocks east. When they click on the correct park they will be rewarded. If they chose one of the other parks they will find something interesting, but not a reward. This exercise will help them get a sense of direction. In another case, students will be asked go to a park that is near a church and a hospital. To find the correct park they have to use the legend to determine the symbols for churches, hospitals, parks and schools. Linear symbols could be introduced by asking the child to go to the park that is on the other side of the river but on this side of the railroad track.

The possibilities expand. We could have a small scale map that extends from the ocean across the mountains to a dry interior. Students would be given clues to find a treasure. Using the clues students would be asked to select a site where they then see another map at a significantly larger scale. Then they would get clues appropriate to this map. If the students followed the wrong clues and got in trouble, they could back out of that place and go back to the small scale map and start again. Instruction could be available to help the students negotiate the maps at these various scales.

Employing computer generated 3D models of land surfaces and contour maps we should be able to teach about the representation of continuous surfaces. One possibility is to have a 3D model of a mountain complex accompanied by three contour maps. Children will be asked to match the correct contour map with the 3D model. Clicking on the other contour maps would take the child to 3D models of those surfaces. These are but a few of the possibilities open to us as we contemplate the power of this new medium to bring maps to children.

### **Conclusion**

Maps and cartography are present on the World Wide Web, but in limited formats. The potential to reach children with maps for and about them has not been realized, but with time we will see a great variety of maps with appeal to children. What their form and content will be is another question. We in the cartographic community should take a leadership role in bringing maps to the Web and not defer to others who know less about maps and children.

### **References:**

Mercer, David, 1996, "Cartography on the World Wide Web," *Cartouche*, No. 22/23, pp. 7-9.

NCGE, 1996, "On the Internet," *National Center for Geographic Education Perspective*, Oct. 1996, Vol. 25, No. 1, p.

11.

Thompson, Lee, 1996, "Interactive Maps on the World Wide Web," in Mercer, David, 1996, "Cartography on the World Wide Web," Cartouche, No. 22/23, pp. 7-8.

Turner, Eugene, 1996, "Words from the Chair," Cartography Specialty Group, Association of American Geographers, Newsletter, Vol. 17, No. 1, Fall 1996, pp. 1-2

### Web Sites of Note (Presented in the order discussed in the paper)

*(These URLs and comments were first made in 1996. When the paper was submitted for inclusion on a CD in March 2005, the URLs were revisited. If the site was found the current address was given, although it might be different from the original. Old addresses that could not be found are indicated.)*

The Spider's Apprentice: A Helpful Guide to Web Search Engines: <http://www.monash.com/spidap3.html> (viewed Feb 22, 2005)

George Mason University: good site to launch into all aspects of cartography: <http://geog.gmu.edu/gess/jwc/cartogrefs.html> (old URL from 1996)

Alex and Max the Koala in Australia: the main page is at: <http://www.scribbles.com.au/max/bookmain.html> and the page with the map is at: <http://www.scribbles.com.au/max/trip.html> (viewed Feb 22, 2005)

Yahooligans web site with the link to the maps page: [http://yahooligans.yahoo.com/School\\_Bell/Social\\_Studies/Geography/Maps/](http://yahooligans.yahoo.com/School_Bell/Social_Studies/Geography/Maps/) (viewed Feb 22, 2005)

Map Maker, Map Maker, Make Me A Map: <http://pr.tennessee.edu/ut2kids/maps/map.html> (viewed Feb 22, 2005)

China map under Yahooligans: [http://yahooligans.yahoo.com/Around\\_the\\_World/Countries/China/Maps/](http://yahooligans.yahoo.com/Around_the_World/Countries/China/Maps/) (viewed Feb 22, 2005)

U.S. Geological Survey on maps and compasses: <http://erg.usgs.gov/isb/pubs/factsheets/fs03501.html> (viewed Feb 22, 2005)

Registry of schools on the Web: <http://hillside.coled.umn.edu/others.html> (old URL from 1996)

Ohyabu Elementary School in Gifu Prefectural, Japan: [http://inetsv1.ohyabu-es.wanouchi.gifu.jp/index\\_p.html](http://inetsv1.ohyabu-es.wanouchi.gifu.jp/index_p.html) (old URL from 1996)

Will Steger's page on his Arctic exploration. The site from 1996 is no longer active. A similar site is <http://www.polarhusky.com/home.asp> for ANWR 2006, a K-12 online classroom dogsled expedition from Circle to Prudhoe Bay, Alaska. (viewed March 5, 2005)

Whalenet, which has a number of mapping activities: <http://whale.wheelock.edu/> (viewed Feb 22, 2005)

Blue Ice and the online class which leads to an Antarctic watch program: That site from 1996 is not active but <http://www2.gsu.edu/~mstnrhx/edsc84/antarctica.htm> is quite similar. Cybersleuth-kids at [http://cybersleuth-kids.com/sleuth/Internet/Online\\_Projects/](http://cybersleuth-kids.com/sleuth/Internet/Online_Projects/) provides links to a number of sites involving explorers and travels. (viewed March 5, 2005)

The Kids as Global Scientists Program: the original link is not active but there are a number of sites using this title. <http://www-personal.umich.edu/~mlhartma/kgs.html> is labeled as Kids As Global Scientists and has links to weather related pages, including many identified for kids or students. The site <http://letus.org/kidsglobalscientists.htm> is a KGS page based on weather. The site <http://www.onesky.umich.edu/kgs01.html> is a KGS site of greater breadth. (viewed March 5, 2005)

UIUC Covis program for weather study: <http://covis.atmos.uiuc.edu/guide/> (old URL from 1996)

U.S. Geological Survey pages on education and use of maps: <http://www.usgs.gov/education/index.html> (viewed Feb 22, 2005)

Virtual Galapagos: the pages of 1996 are no longer active but the site <http://www.doc.ic.ac.uk/~kpt/terraquest/galapagos/intro.html> seems to have the complete set of the original pages. (viewed March 6, 2005)

Virtual Tourist with maps for tourists: <http://www.virtualtourist.com/> (viewed March 8, 2005)

LonelyPlanet, nice maps for travel and tourism: <http://www.lonelyplanet.com/destinations/> (viewed March 8, 2005)

Earth Viewer: <http://www.fourmilab.ch/earthview/vplanet.html> (viewed March 8, 2005)

General weather sites, MSU <http://www-personal.umich.edu/~mlhartma/kgs.html> is perhaps the best site to find weather related pages for children. (viewed March 8, 2005)

Canada Energy Mines and Resources, National Atlas Information System. The URL of 1996 is no longer active but there are many pages relating to maps and children. [http://www.nrcan-rncan.gc.ca/kids/index\\_e.html](http://www.nrcan-rncan.gc.ca/kids/index_e.html) is the Welcome to NRCat's Scratching Post! which is designed for children and teachers. There are many things to explore from this site, including games and quizzes on map bases. One link goes to the Geography page where there are map-oriented links. The English language page <http://atlas.gc.ca/site/english/learningresources/facts/index.html> has a link to many maps



with the heading Explore Our Maps. (viewed March 8, 2005)

Malaysian Elephant Satellite Tracking Project, co-sponsored by the Smithsonian Institution: The original URL now brings up <http://nationalzoo.si.edu/Animals/AsianElephants/> From this page there is a link to track Silver Moon, an Asian elephant in Myanmar wearing a satellite-telemetry collar at [http://nationalzoo.si.edu/ConservationAndScience/ConservationGIS/projects/asian\\_elephants/trackingsilvermoon.cfm](http://nationalzoo.si.edu/ConservationAndScience/ConservationGIS/projects/asian_elephants/trackingsilvermoon.cfm) From this page there are links to a variety of map pages, including an animated map showing a small, gray elephant icon moving over photo based shaded relief map of a national park. Nine years later the Smithsonian Institution still employs an animated map showing the track of a charismatic mammal, which will appeal to some children. (viewed March 8, 2005)

Animaniacs Sing-Along: Yakko's World is a commercial videotape from Warner Bros., 1994. Any copy of this video clip that is on the web would be an illegal copy. In the original paper a link was given to what would have been an illegal site.