



oikos mashup newsletter n.3 english

OIKOS

Originating Innovative methods to learn and teach Knowledge in the field of earth and natural sciences derived from an Original and combined use of applicative Software

The OIKOS project is moving in a very interesting sphere from a teachers' point of view, in the use of Web 2.0 and of the so-called "Mashup" applications.

Terms and Definitions classifies this term as a new breed of Web-based applications created to mix at least two different services from different, and even competing, Web sites. A Mashup, for example, takes feeds of upcoming television shows, movies and celebrity news combined into a shopping experience with merchandise from Amazon and eBay. This capability to mix and match data and applications from multiple sources into one dynamic entity is considered by many to represent the promise of the Web service standard (also referred to as on-demand computing).

When people combine Google Maps with other content, the result is called a "Google Maps Mashup", a combination of map and other relevant information.

Need to know how to get to a School in the UK? **The UK Schools Map** at <http://www.schoolmap.org.uk> doesn't just tell you-it shows you, by combining lots of useful information with a map.

Various Google Maps Mashups that have lots of potential in the field of education are available on-line.

The **Gmaps Pedometer** at <http://www.gmap-pedometer.com>, for example, can be used to visually map a walking route. The site updates the distance as you add more locations. From Piazza del Colosseo across Via dei Fori Imperiali to Piazza Venezia in Rome is 0,67 miles. You can even add a calorie counter.

From a didactic point of view the suggested activities are: Have your students estimate a distance (for example, from school to home), and use Gmaps Pedometer to check their estimate. For physical education, have students plan a walking program for exercise, then see how many calories their suggested program will burn.

The **Google Planimeter** at <http://www.acme.com/planimeter> measures areas.

In particular, a set of Google Map Mashups will be completed

with the aim of implementing six on-line "educative laboratories" useful to simulate mechanisms of such physical phenomena as Earthquakes, Beach evolution, Cliff erosion, Landslides, Floods and Volcanoes.



Above: The main page of the Oikos web application.

These phenomena will all be addressed through the Oikos project.

In this way, OIKOS will concretely contribute to use Google Maps in Education transforming the static world of maps into an exciting environment to teach and learn.

Mashup

First, lets take a step back.

Mashups? What's a Mashup? Webopedia, the Online Computer Dictionary for Computer and Internet





University of Cyprus



University of Crete



Universidad de Zaragoza



Universitatea Babe-Bolyai Cluj-Napoca

e-mail:
info@e-oikos.net

web site:
www.e-oikos.net

Click on three points on a map, and the Planimeter connects them in a triangle and computes the area. Click on additional points and the triangle expands into a many-sided polygon; the program recalculates the area.

From a didactic point of view the suggested activities are: Have students estimate the area of a geographical region; plot many points to obtain increasingly accurate estimates and compare the true area to their initial estimations. For example, the Fusaro lake near Naples is first bounded by using 3 points, then by 6 for increased accuracy.

If your class is studying a more populated area, combine these data with demographic data for further study.



Above: "Google Planimeter" measures geographical areas

With **YourGMap** at <http://www.yourgmap.com> you can identify your own choice of locations, add comments, create a map of them, and make it available on the Internet.

From a didactic point of view the suggested activities are: For young students, create a tour of the neighbourhood. Identify the school, supermarket, firestation, park, and so on. You can even use the Google maps satellite view to see the actual buildings.

In the fields touched by OIKOS some interesting experiences are also available. For example, **Earthquakes in the Last Week** at <http://earthquakes.tafoni.net> uses Google Maps with data provided by the U.S. Geological Survey to show earthquakes of magnitude 2.5 or more in the past seven days.

From a didactic point of view the suggested activities are: Study patterns, then correlate them with plate tectonics and faults. Click the map markers for further

information regarding the specific quake.



Above: "Earthquakes in the Last Week" presents earthquakes that happened in the past seven days

Again, **Flood Maps** at <http://flood.firetree.net> is an interesting combination of Google Maps with elevation data to show the impact of rising sea levels.

From a didactic point of view the suggested activities are: Try it for your own town.

Finally, **World Volcano Browser** at <http://www.geocodezip.com/volcanoBrowser.asp> displays volcanoes of the world on a Google Map. Data are from the Smithsonian Institution and Global Volcanism Project.

From a didactic point of view the suggested activities are: correlate information about various kinds of volcanoes or select the same kind of volcano in different regions.

The list of available applications comprises of other interesting educational Mashups. An excellent source of information to find and keep up with the latest Mashups is <http://www.programmableweb.com>.

Mashups represent innovative advances of web-based technologies, which are still at their infancy. By adopting Mashups, the OIKOS project is going one step further in realizing and investigating the learning opportunities that exist within such applications. For students, the use of these techniques means: 1) greater possibilities for interactivity, 2) an environment that fosters thinking about one's learning processes, and 3) encouragement to deal with new situations and new problems. Hopefully, the work conducted as a result of the OIKOS project will contribute to the better understanding of the potential of such innovative technologies, which, presently, remain largely unexploited in educational settings.

CONTACT



Università degli Studi del Sannio
Via Port'Arso, 11
82100 Bevevento
Italia
guadagno@unisannio.it