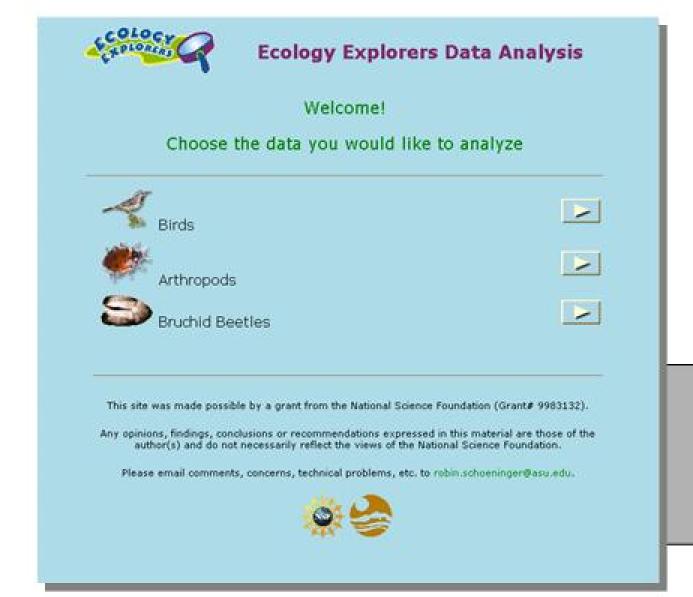
Ecology Explorers Online Data Analysis

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than at __(b)__

canal power poles

football field grass

Choose a:

C Garden

c patio

@ Pond

C Hendrix Patio

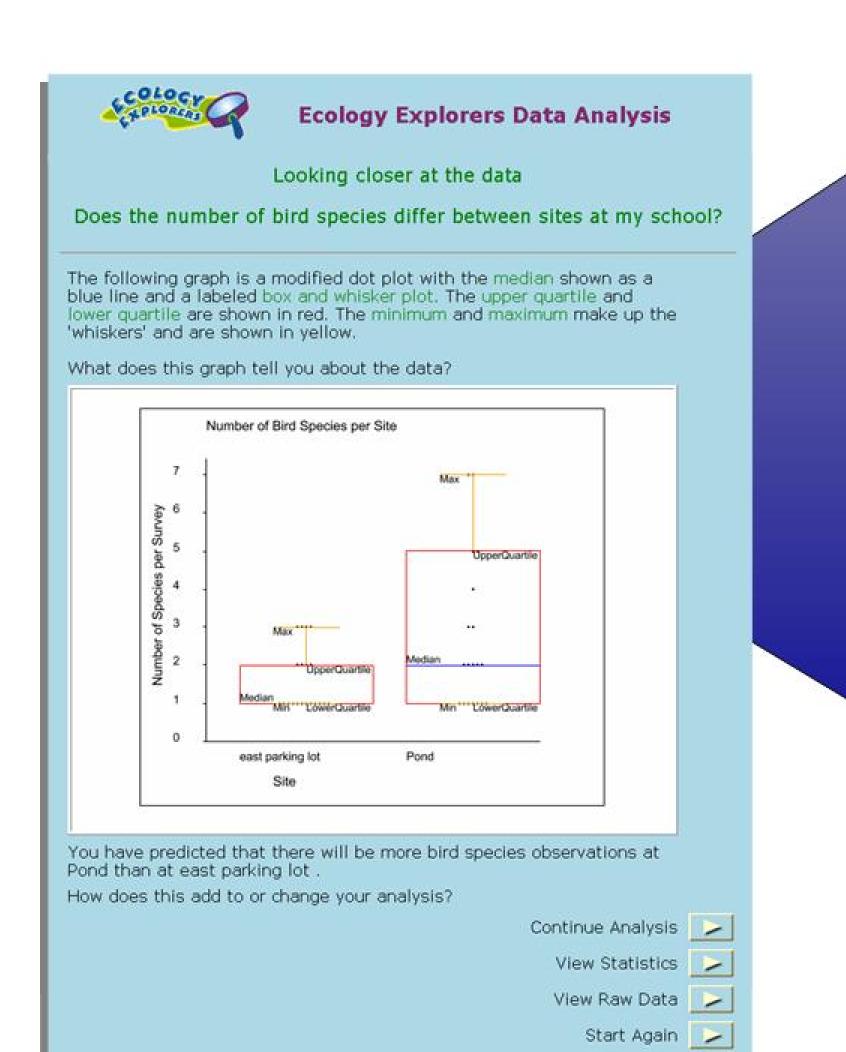
North grass

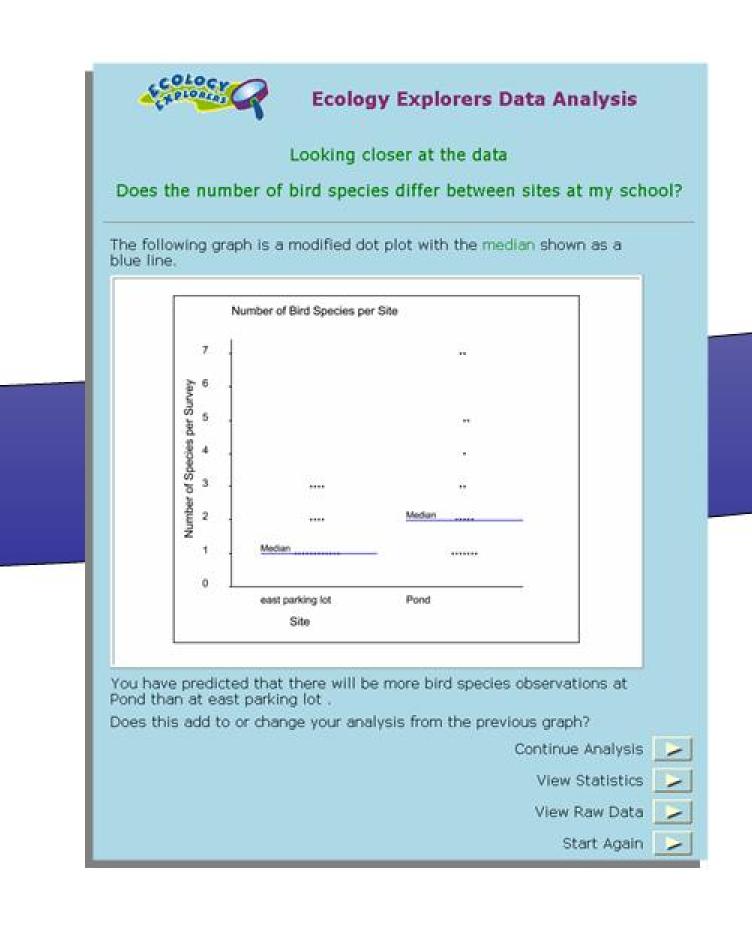
C West grass

Choose a Subject

The application lets students develop hypotheses, questions and predictions based on the available data. Simple statistical procedures and two types of graphs are offered to test the hypothesis. A bar graph and a dot-plot / box and whisker series along with concepts of central tendency, median, mean and quartile were chosen to comply with 6th grade Arizona Department of Education Math standard requirements.

Ecology Explorers is a CAP LTER educational program for Kindergarten through 12th grade students. Protocols developed by CAP scientists are employed by the students for data collection in their schools. One goal of this project was to provide appropriate data analysis tools that allow students and teachers access to their data while providing tools to teach required concepts using graphs and statistics in an online environment. The second goal of this project was to accomplish this by using background technology developed for scientific data access applications and a design that provides extensibility to the use of scientific datasets collected by CAP researchers for their research.





Ecology Explorers Data Analysis

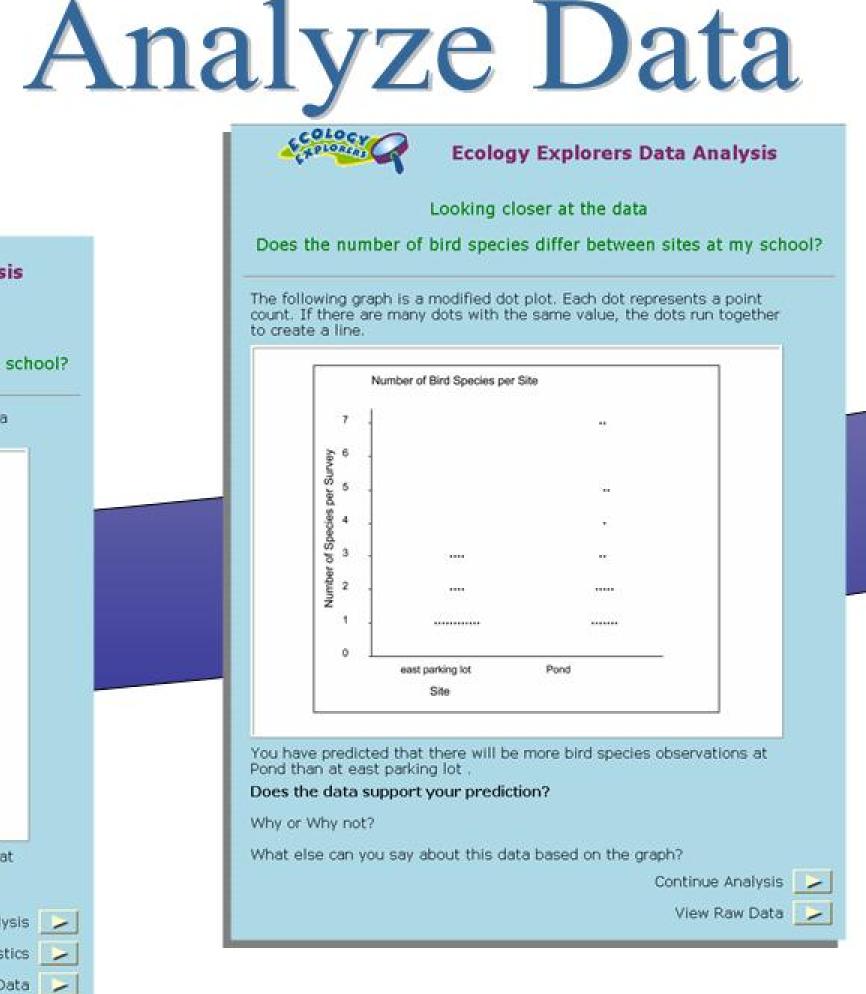
Choose a type of question to ask:

Is the average number of bird species different between

Does the number of bird species differ between sites at my

Does the average number of bird species vary over different

Does the average number of bird species vary under different



Ecology Explorers Data Analysis

What is your Prediction?

I predict that there will be more bird species observations at __(a)__

Choose b:

C Garden

C patio

C Pond

-

Hendrix Patio

North grass

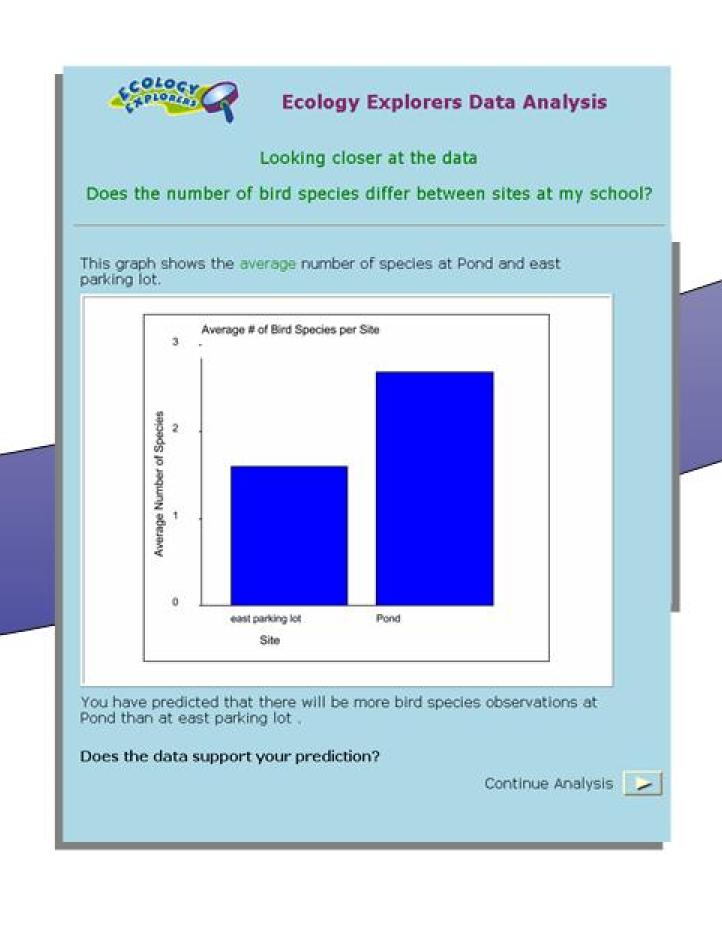
C West grass

C canal power poles

football field grass

east parking lot

The second step in the Scientific Method is: Make a Prediction.



Ecology Explorers Data Analysis

Does the number of bird species differ between sites at my

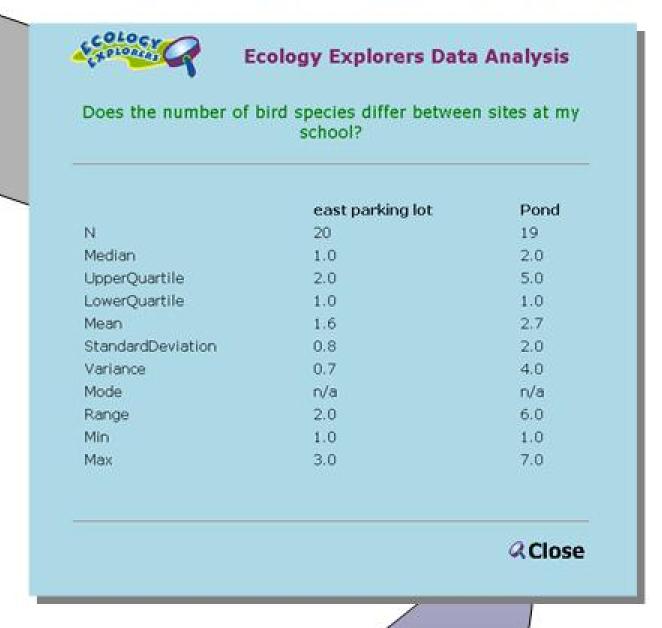
sitename

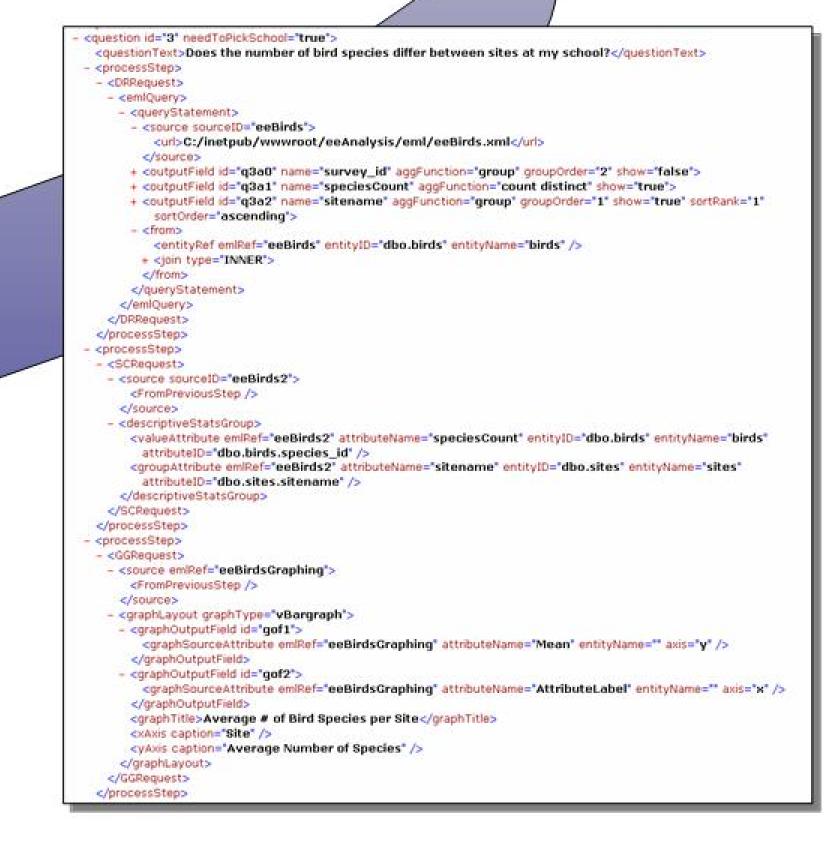
east parking lot

Pond

speciesCount

View Data



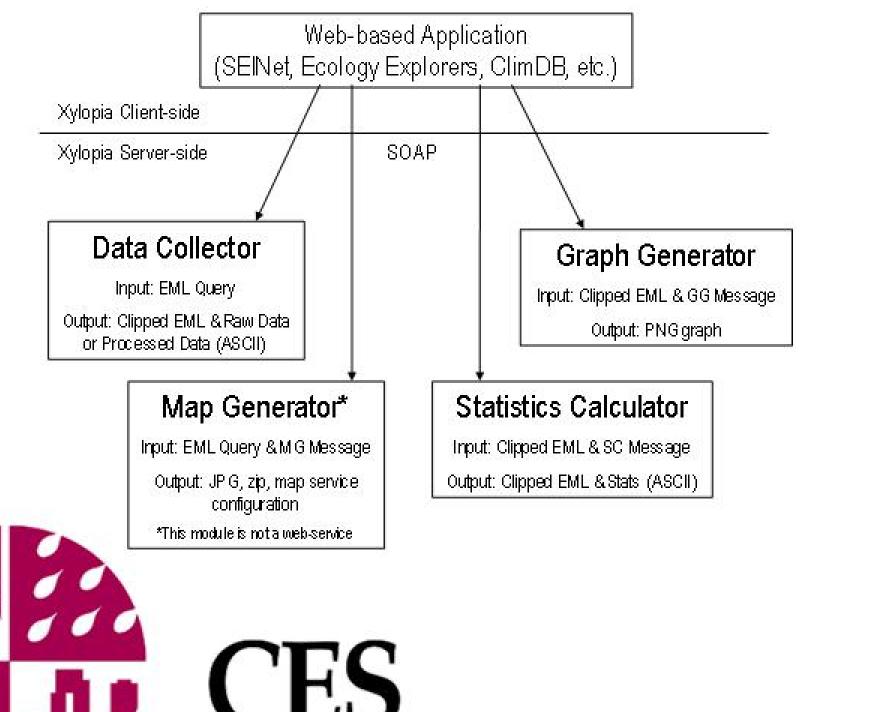


Powered By Xylopia

The technology for this web application is rather complex in that it employs web services and is based on a standardized internet messaging system through which the front-end user interface (the web pages that the user sees) sends requests to a background system for querying, analyzing and graphing data (a series of data processing services that the user doesn't see) in a JavaBeans/JSP interface. The database queries are managed by Xylopia, a series of web services built for the retrieval and analysis of data. This Ecology Explorers site is the pilot project for Xylopia. This decoupled design enables us to use the same back end technology for advanced data access applications as well as this guided inquiry. The significant advantage to this system is that the text, questions and databases are all set with a series of configuration files. No code writing or compilation is required to expand the application. More datasets will be added to the Ecology Explorers Online Data Analysis through configuration files without needing to change either the interface or the back-end services. These files contain the text prompts for the web pages and define the connection between the science questions and data queries need to address them.







Center for Environmental Studies