4H Children's Garden Kids' Tour

http://4hgarden.msu.edu/kidstour/

Presented by Carrie Heeter at the Professional Interaction Design Portfolio Panel, International CHI Conference 2002 (Computer-Human Interaction), Minneapolis.

Problem or issue

The 4H Children's Garden is a popular spot for school field trips and visitors during the garden's growing season, late May to late August. Our goal is to elegantly integrate technology to extend the benefits of the garden to make it accessible worldwide, anytime day or night, winter or summer. It will allow parents, teachers, and kids to visit the virtual garden before and after going to the real garden. In summer we will also run the virtual tour at a kiosk in the garden. The tour holds much more information about what is in the garden than one encounters walking around in the actual garden.

We wanted to create a parallel virtual experience that in its own virtual way is as rich in exploration, surprises, learning, and fun as the real children's garden.

Innovative Design Solution

Too many virtual tours have great navigation but nothing to do once you're there. The kids' tour is an ever expanding project which links to 9 years of professional and student software development. The interface is incredibly dense (600+ links) with a single screen acting as a portal to myriad Flash panoramas, QTVRs garden QTVR eCards, garden videos, interactive games and stories, garden vocabulary in American Sign Language, and information for teachers and parents. The project embodies elegant, natural integration of virtual and real worlds. Different content is suitable for ages 2 to adult, with an emphasis on K-6.

We wanted to create a virtual children's garden experience which encourages kids to explore, to wonder, to imagine, to interact, and to play. We tried to capture the visual richness of the Michigan 4H children's garden and the joy kids have when they explore it. We added teacher information to increase the utility as a learning tool. We used challenge questions with each popup QTVR to give kids a reason to spin and zoom. The 40 video clips show aspects of the garden visitors might not notice or even get to see -- such as a turtle climbing onto a log in the pond. We wanted to take the concept of a spatial interface to an extreme level. Visitors to the Kids Tour can also send a different QTVR eCard from each node. We will be using the Kids Tour to conduct research comparing how boys and girls and grownups explore.

Design Process

Six years ago a grad student in our design group created a QTVR tour of the garden as his MA production thesis. The tour appeals to grown ups – it has lots of facts about the garden, but nothing fun to do.   Technologies for panoramic interfaces have changed a

Michigan 4-H Children's Garden e-card!

Feathered Friends Garden

Kitchen Garden Work Station

Creation Stati...

Things to do at the kids' tour

panoramic

SPIN! move your cursor right or left with the garden picture.

HOP click on *white flags* to travel to the part of the garden on the flag.

PLAY click on character to play a game.

map

FLY click on 🟡 to fly to the location whose name is showing.

NOSE LOCATION ARROW the 🔺 shows where your nose is located in the garden and which direction it is sniffing.

CAMERA click ⚪ to look at a live webcam in the garden

REPLAY INTRO

Magnify View   Send E-card   Need Help?

Pizza Garden

Garden Video

Teacher Info

SPIT

The index finger is flicked out by the mouth to represent spit coming from the mouth.

Lacewing

4-H Kids' Tour   Loading American Sign Language movie file. Close Window to cancel. Click HERE to visit the complete ASL Browser Web site.

lot since then. We wanted to bring the latest technologies to bear on creating a tour specially designed to appeal to kids.

We photographed the panoramas quickly in August 2000 before fall killed all of the plants. Then we spent 9 months experimenting with different techniques and approaches to implementing the panoramas. We also interacted with classes of kids, watching them use other software we had created. Finally in May we decided to base the navigation on Flash, giving us the most flexibility in adding diverse interactivity. We designed the interface to be expandable. We realized we could incorporate all of the interactives we had already created for the garden. We realized we needed better teacher information, and so we added the Apple character. We realized we could incorporate video to add richness. Our final realization was that we could also link to two of our former projects (the ASL Browser and the Microbe Zoo) to enrich the Kids Tour and repurpose parts of their content in a garden context. Everything came together into the very packed, ever expanding experience. Our next step will be to integrate four live webcams into the interface.

User Involvement in the Design Process

Our design lab has been collaborating with the Children's Garden for five years. The garden curator observes garden visitors, holds myriad events for kids throughout the summer, and works with classes around the state throughout the year on science learning experiences. Our designers often participate in these events. As we develop software, we show it to kids and teachers. Once developed, it is used in the garden and in the classroom, providing feedback about things to change and new things to add. We often have kids help with actual design ideas.

When you mouseover the bee, she looks right at you. When you click on her, she buzzes all around the screen, ends up back in place, grins for a moment, then looks back down at her text. (One child user told us the bee was too boring, so we had to do something.) One of the modules (plant builder at the Creation Station pano) was created in Flash by a fifth grader. We added the SKIP INTRO poem/instructions because test users were not aware of all the things they could do on the tour.

We added the "teacher info apple" towards the end of the initial development phase because teachers are in a hurry and want information about what's inside without having to explore. We are continuing to work with teachers to develop more information to help them use this tour with their classes.

We have just completed the first release of the project and anticipate a long period of research with kids and teachers, refinement, and expansion. Studying gender differences in how boys and girls approach spatial exploration, panoramas, and QTVRs is part of an NSF proposal on gender equity. We will also be studying how visiting the virtual garden impacts visits to the real garden, and vice versa.

Impact on Quality of Life

Kids and grownups can experience the 4H Children's garden, enjoy exploring, learn about science and plants, colors and pizza, microbes and sign language. Some of the videos capture moments most visitors don't get to see. Teacher info helps teachers think about how to use this site with their classes. We have succeeded in extending the reach of the garden beyond its physical limitations of location and growing season (as well as day and night). The interface is modular and easy to expand. This semester four more student projects are under construction to add to the tour. We are working to add a weather station data feed (in the Feathered Friends pano) and live webcams, including a thermal camera, to give live user controlled access to the garden through this same tour interface.

The collage on page 2 seemed like the best way to try to represent this multifaceted, deeply, interactive project in static form. In case the text is too hard to read in the middle image (a screen grab of the help page), here's what the skip intro says:

Click on a DOT... to JUMP to that spot.
Move your mouse left or right... to SPIN, see what's in sight.
Click on a flag that's WHITE... to HOP to that site.
Click on a CARTOON... you'll be PLAYing a game soon.

Click on Dr. Norm to SEE... that garden spot on TV.
ZOOM in to explore... where you'll DISCOVER more.
Garden eCards you can SEND... say HI to a friend.
An Apple for parents or teachers.. find out about garden SPECIAL features.