The Global Internet 3D

Teaching the Internet and its structure through 3D simulation

Lesson
Teaching the Internet and its structure through 3D simulation

Objectives
1) Students will gain a basic understanding of the Internet through 3D simulation and visualization,

2) Students will gain a deeper understanding of the components of the Internet and how they function together to make the Internet work.
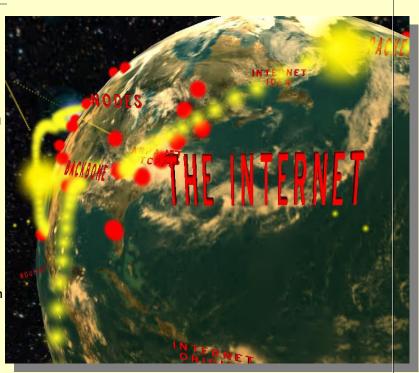
Activity
Students travel across the global Internet in real-time 3D, helping them to visualize and understand its structure and connections.

Materials
Internet3D Homepage
 (click or cut and paste URL into browser)
http://www.sunrisevr.com/theinternet3d

3D Simulation and Investigation

3D simulations are designed to make subject matter more engaging to today's technology-savvy kids, and help them bridge the gap between the "concrete" world and the abstract world of concepts. When students experience complex subject matter in real-time 3D it becomes clearer. Students learn best when they are actively immersed in subject matter from a variety of different viewpoints; 3D simulation is designed to help students visualize difficult ideas and objects through investigation at any scale (atomic, cellular, planetary, conceptual, etc), and doing things that would normally be impossible.

Required Technology
- Unity3D/Flash-Enabled Computer
- Internet Access

Optional Technology
- Projector
- Multiple Computers

Grouping
- Large Group Instruction
- Small Group Instruction
- Individualized Instruction

Staging
Check computer for Internet access, Unity3D/Flash, and projection if needed

Procedure

1. Access program

2. Pick a lead student navigator to control movement through the 3D environment

3. Pick a lead student reader to read information about the Internet as it appears on-screen

4. Begin the lesson by asking students what they already know about the Internet; write responses on the board

5. Review basic facts about the Internet including:
- The Internet is a network of networks
- It allows any Internet-connected device in one geographic location to talk to another Internet-connected device

6. Start traveling through the program, facilitate discussion by asking students where the class should go

7. Use the 3D simulation as a visual aid; explain information as needed

8. Have students pay special attention to:
- Network Structure
- Components

9. Have a final wrap-up with students with a question and answer period about the Internet. Ask them how it works, and what are the primary components

Optional Activity: 3D Scavenger Hunt + Discussion
Have students find a particular part of Internet, such as a backbone. If students are on multiple computers, have them "race" to the part of the Internet the teacher wishes to highlight. Once students find/arrive at the location, the teacher may commence discussion. Repeat in other areas of the simulation as desired to build understanding.

Homework/Review
Students may also access the program outside the classroom to supplement textbook questions

Functional Notes
- The program is available on multiple platforms
- If using the program online, please ensure the Unity3D Player is installed on the computer; through the Internet Explorer Browser; download the latest at https://unity3d.com/webplayer.
- If you see something in **red** you can probably click on it
- For ease of use you can go through most 3D objects, and even the ground
- The school library can request and access programs (free) at www.sunrisevr.com for off-line use via PC and Mac if there is no internet connection