

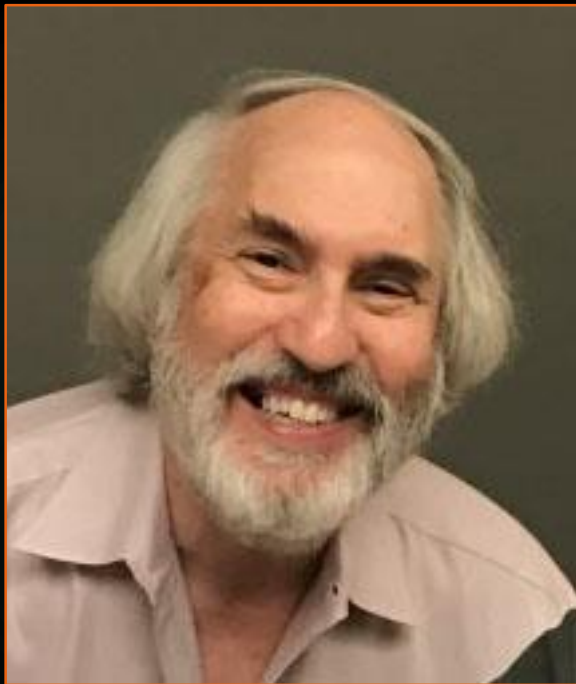
January 27, 2022

Assistive Tableware for Persons with Cognitive Impairments



ENGR110/210

Perspectives in Assistive Technology



David L. Jaffe, MS
Instructor

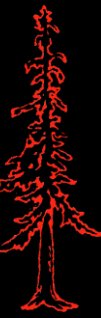
16
Years

Questions, Comments, Suggestions, or Concerns?



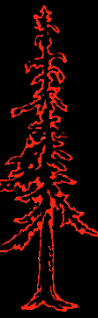
Please notify me of your comments, suggestions, and concerns so I can explain / address / correct them.

Attendance



- ▶ Working on attendance sheets
- ▶ Make up missed class sessions by watching Zoom or camcorder video, reviewing class session webpage (slides and links), and meeting with me

Upcoming class sessions



- ▶ **Issues of Human Interface Design** - Gary M. Berke, MS, CP, FAAOP - Tue, Feb 1st
- ▶ **Accessible Making: Designing Makerspaces for Accessibility** - by Zoom Katherine M. Steele, PhD, MS - Thu, Feb 3rd
- ▶ **Mid-term Student Project Presentations** – Tue, Feb 8th
- ▶ **Assistive Robotics** - Thu, Feb 10th Monroe Kennedy III, PhD



Students working on Team Projects



- ▶ Connect with project partner
- ▶ “Understand the Problem”
- ▶ Brainstorming
- ▶ Select Design Concept(s)
- ▶ Sketches, low resolution prototypes
- ▶ Prepare for Mid-Term presentation and Report
- ▶ Contact me if you have questions about your project direction
- ▶ Weekly - Meet with me or Bennett to report on project progress
- ▶ **Team budget = \$200**
- ▶ Submit progress reports to both Bennett and me



Students working on Team Projects

Mid-term Presentations in 12 days!



- ▶ Mid-term presentations will be 7 minutes
- ▶ Project title, background, problem, aim, design criteria, “understanding the problem” & brainstorming activities, and selected solution, with **low resolution prototype**
- ▶ Send slides to me, **to be run from my laptop**
- ▶ Strive to be professional
- ▶ Include feeling & emotion
- ▶ Presentation tips on course website
- ▶ **Signup Sheet for presentation order will be available in class next week**

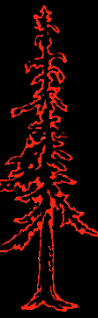
Students working on Team Projects

Mid-term Report



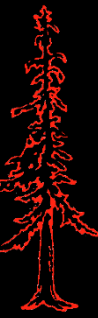
- ▶ Mid-term report - 10 to 15 pages of narrative - text and images
- ▶ Suggested format different for fabrication vs non-fabrication projects
- ▶ Include sketches and photos
- ▶ Goal: short, concise, well-written, and highly readable report with few grammatical and spelling errors.
- ▶ Report Writing Tips documents **suggested** report features

Students working on Individual Projects



- ▶ **Meet with me to approve your project, get information**
- ▶ Submit project name
- ▶ Contact me if you have questions about your project direction
- ▶ Weekly - Meet with me or Bennett to report on project progress
- ▶ Submit progress reports to both Bennett & me

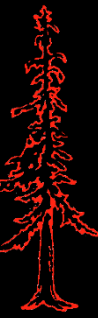
Reminder - Work with Diligence



- ▶ Time is your team's most precious resource
- ▶ **12 days** until Mid-term Presentations - Tue, Feb 8th
- ▶ It is not too early to outline your presentation & report



Tuesday, February 1st



Issues of Human Interface Design

Gary M. Berke, MS, CP, FAAOP

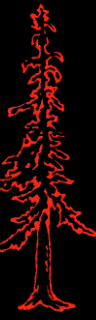
Stanford Medical Center and Berke Prosthetics & Orthotics

Today, January 27th



From Idea to Market: Eatwell, Assistive Tableware for Persons with Cognitive Impairments

Sha Yao - Sha Design

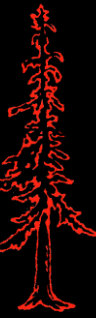


Overview of Accessibility



A11y

What is Accessibility?



Accessibility is a:

- ▶ Property
- ▶ Design concept
- ▶ Design specification
- ▶ Design consideration
- ▶ Design goal
- ▶ Product feature



What is Accessibility?

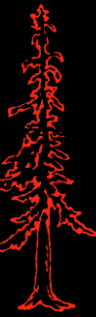


That enables people:

- ▶ Individuals with disabilities:
 - ▶ Sensory
 - ▶ Physical
 - ▶ Cognitive
 - ▶ Neurological
- ▶ Older adults
- ▶ Kids
- ▶ Everyone

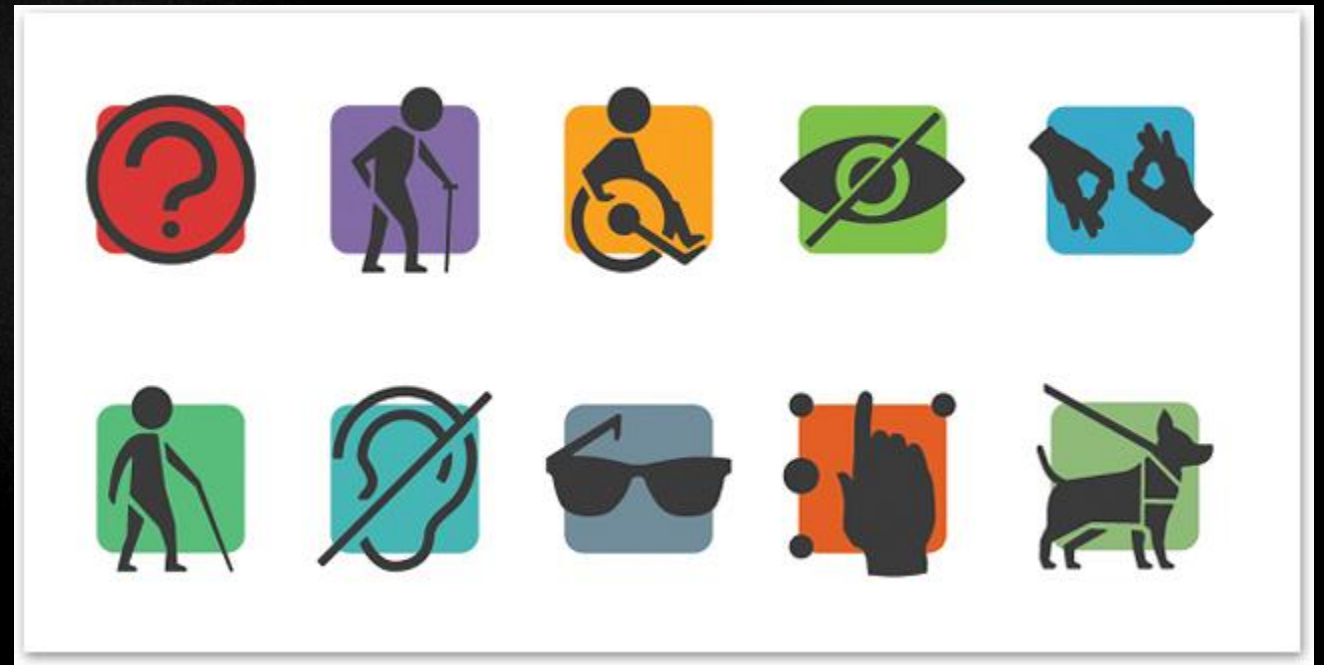


What is Accessibility?

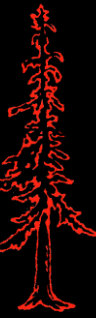


To better interact through:

- ▶ Sight
- ▶ Sound
- ▶ Touch
- ▶ Smell
- ▶ Mobility
- ▶ Understanding
- ▶ Communication
- ▶ Manipulation
- ▶ Teaching / learning



What is Accessibility?

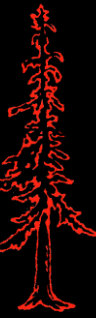


With the real world:

- ▶ Other people
- ▶ Infrastructure:
 - ▶ Buildings
 - ▶ Institutions
 - ▶ Transportation systems
- ▶ Products:
 - ▶ Computers
 - ▶ Internet
 - ▶ Websites
 - ▶ Household items
 - ▶ Office items

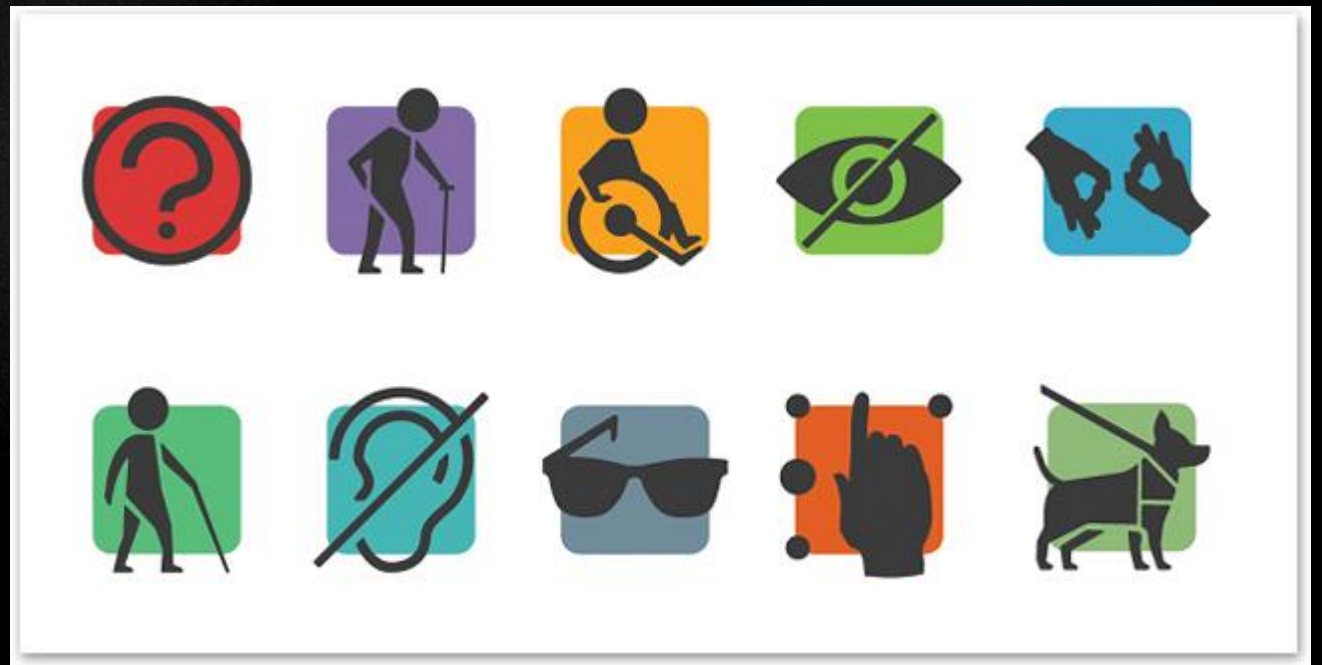


What is Accessibility?



Through an enhanced hardware and / or software user interface:

- ▶ Alternate ways
- ▶ Augmented ways
- ▶ Customized ways
- ▶ Preferred ways



What is Accessibility?

For these purposes:

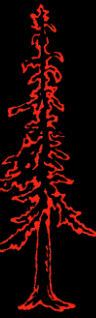
- ▶ Education
- ▶ Vocation
- ▶ Recreation
- ▶ Daily living

Little Things Do Make A Difference

Little Things Do Make A Difference

Little Things Do Make A Difference

Little Things Do Make A Difference



The Goal of Accessibility

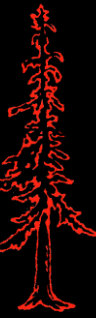


The ultimate goal of the accessibility movement is to ensure that everyone - regardless of ability or disability - has an **equal chance to participate in society**. In the face of constant technological change, this becomes more difficult but also extremely necessary. The only way to allow people with disabilities to **engage fully** in the activities that interest them is to give them access to all the possibilities open to everyone else, including those offered by twenty first century technology.

Accessible Technology in the 21st Century

- The Future

Examples of Devices that Provide Accessibility



Building Access

- ▶ Door Opener
- ▶ Ramps
- ▶ Workspaces
- ▶ Signage
- ▶ ATMs

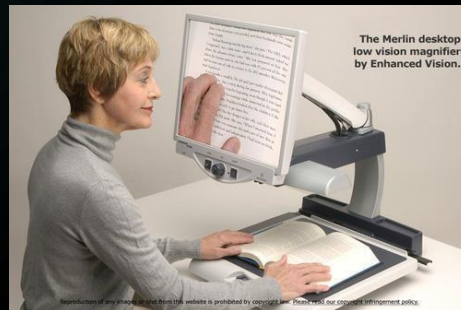


Computer Accessibility



As the computer age continues, more and more technology is being created to make computers and the internet accessible for people of all ability levels.

For **visually impaired users**, programs offer **audio description** or **screen reading**, while **monitor settings** can be modified to make visual reading easier or **Braille embossers** can be added as **alternative output devices**.



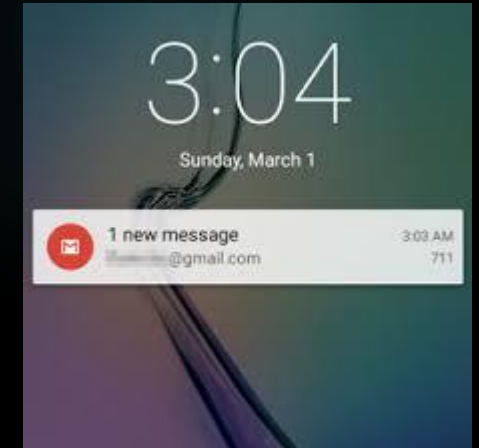
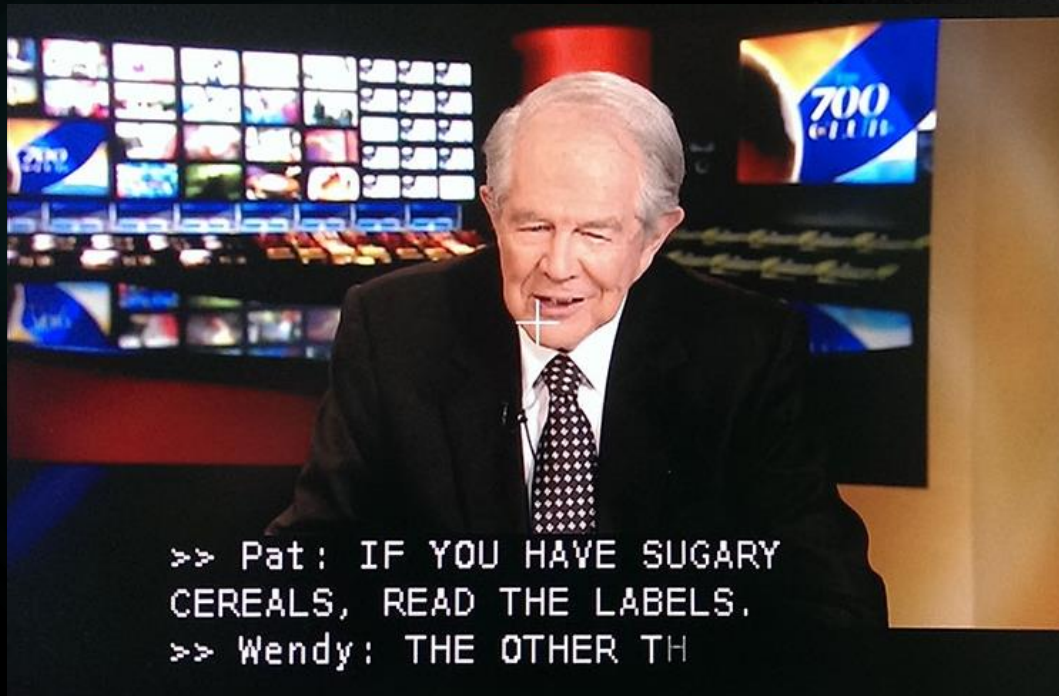
Accessible Technology in the 21st Century

- Introduction

Computer Accessibility



For individuals with hearing difficulties, **captioning** and **visual notifications** instead of sound can offer more freedom in using a computer.



- Accessible Technology in the 21st Century
- Introduction

Computer Accessibility



Adaptive keyboards and mice allow **people with motor disabilities** to get their input into a computer, while **speech recognition** is software that allows control of a computer by voice.



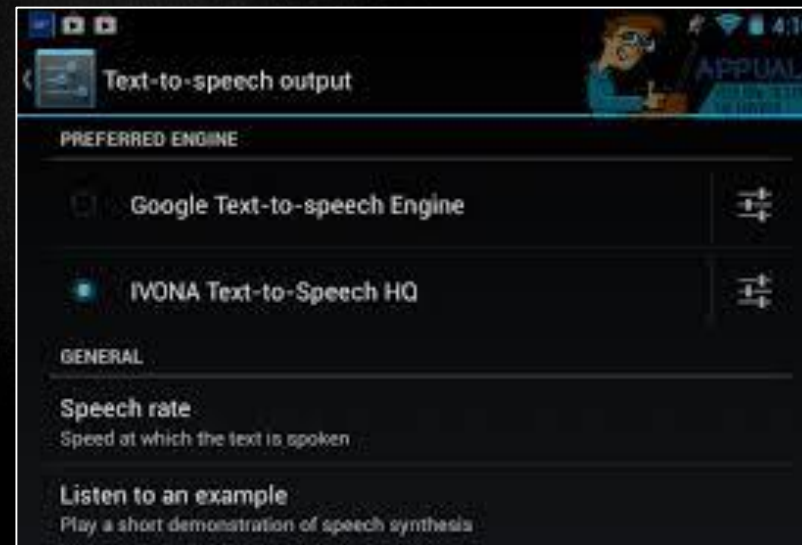
Accessible Technology in the 21st Century

- Introduction

Computer Accessibility



For those with **cognitive disabilities**, programs can be set up to **read text aloud while it is displayed**.



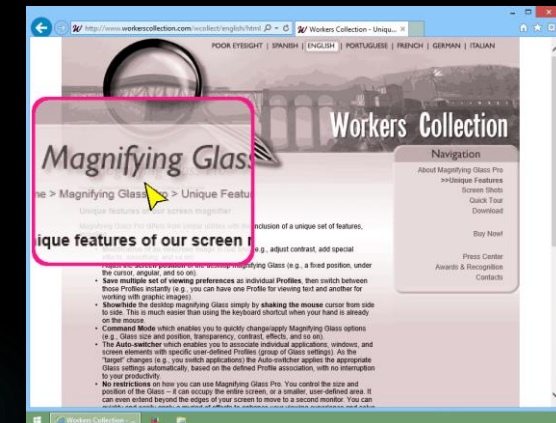
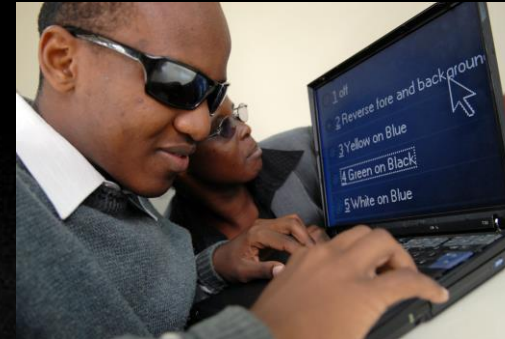
Accessible Technology in the 21st Century
• Introduction

Examples of Devices that Provide Accessibility



Computer Access

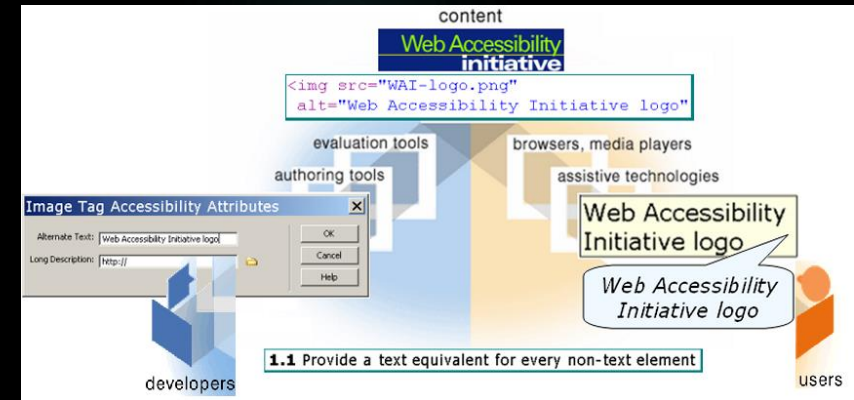
- ▶ Alternative Mouse
- ▶ Alternative Keyboard
- ▶ Screen Readers
- ▶ Voice Recognition
- ▶ Screen Magnifiers
- ▶ Braille Displays
- ▶ Captioned videos



Accessible Webpages

WCAG Guidelines (1 of 2)

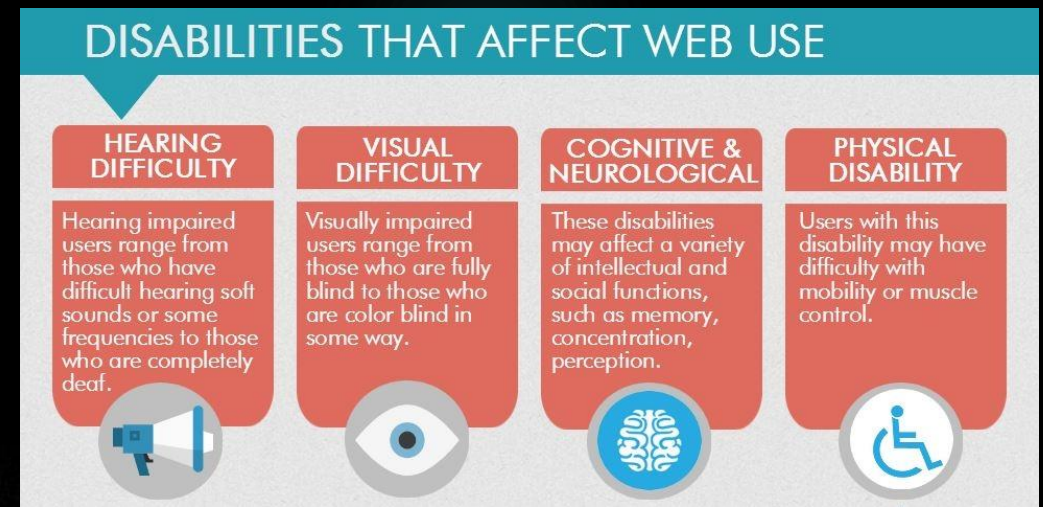
- ▶ Provide equivalent alternatives to auditory and visual content
- ▶ Don't rely on color alone
- ▶ Use markup and style sheets and do so properly
- ▶ Clarify natural language usage
- ▶ Create tables that transform gracefully
- ▶ Ensure that pages featuring new technologies transform gracefully
- ▶ Ensure user control of time-sensitive content changes



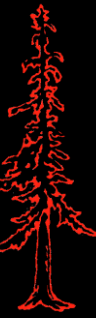
Accessible Webpages

WCAG Guidelines (2 of 2)

- ▶ Ensure direct accessibility of embedded user interfaces
- ▶ Design for device-independence
- ▶ Use interim solutions
- ▶ Use W3C technologies and guidelines
- ▶ Provide context and orientation information
- ▶ Provide clear navigation mechanisms
- ▶ Ensure that documents are clear and simple

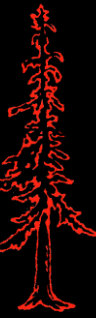


In Summary



Accessibility is the design goal, feature, or criteria that allows people of differing abilities to **share common resources**.

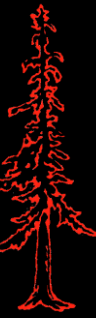
In Summary



Examples of shared common resources are:

- ▶ buildings
- ▶ transportation systems
- ▶ consumer products including computers and software
- ▶ institutions such as schools, banks, government facilities, voting places
- ▶ facilities such as parks, playgrounds
- ▶ information systems such as books and the internet

In Summary



In many instances, the use of an assistive technology device can provide needed access to an otherwise inaccessible resource.

Today

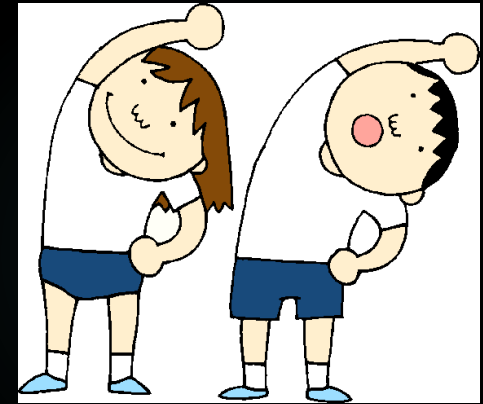
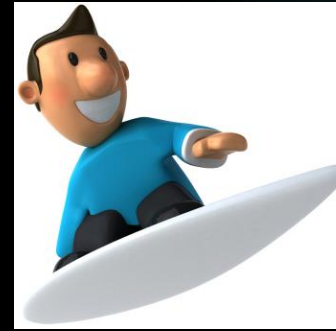
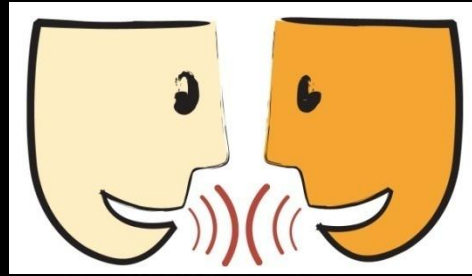


From Idea to Market: Eatwell, Assistive Tableware for Persons with Cognitive Impairments

Sha Yao - Sha Design

Break Activities

- ▶ Attendance sheet
- ▶ Stand up and stretch
- ▶ Take a bio-break
- ▶ Text message
- ▶ Web-surf
- ▶ Respond to email
- ▶ Talk with classmates
- ▶ Reflect on what was presented in class



Short Break

