

Lesson 1.5: Assistive Technology

Objectives

In this lesson, students will:

- ❖ Gain an awareness of people with different abilities and disabilities and how it affects their ability to use a standard computer
- ❖ Learn about assistive technologies and their applications to help students with different needs use standard computers

Agenda

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| 1. Different Abilities | 5 mins |
| 2. Assistive Technology | 15 mins |
| 3. Student Activity: Who Uses which Assistive Technology | 20 mins |
| 4. Class Discussion and Wrap Up | 10 mins |

Preparation

- Computer with an internet connection (teacher only)
- Projector and speakers for video

Resources & Links

- Reference video covering a multitude of assistive technologies:
<https://tinyurl.com/y2s9fqwp>
- Video link for CC
<https://tinyurl.com/ycgaoq2t>

1. Different Abilities



Lead students in a discussion about people with disabilities:

Many people have a wide range of abilities and disabilities. Some people have disabilities that you can see right away. For example, some people use a wheelchair to help them get around. Can you think of other disabilities people have?

- People with hearing problems might need to use a hearing aid.
- People who have trouble seeing might need to use a cane or a guide dog.

But some people have disabilities that you can't see right away. Some kids have learning disabilities like dyslexia. People with dyslexia often have a hard time with words and reading.

2. Assistive Technology



Because many people have different abilities, not everyone can use the standard computer. However, with a little extra hardware or software, computers and the Internet can be accessible to people with a wide range of abilities.

Assistive Technology is any device or software that is customized to make life easier for a person who has a disability or special needs. Examples of assistive technology:

- A keyboard with large keys for people with low vision



Image source: Washington.edu/doit

- Software that converts speech to text
- A printer that converts a website content, for example, into a braille print out so a blind person can read it on their own (explain what braille is).

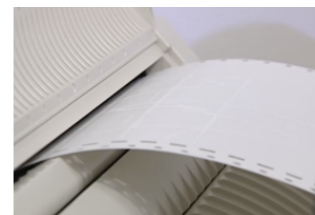


Image source: Washington.edu/doit

- ❑ Software that reverses the screen to light text on to a dark background for people that are very sensitive to light.

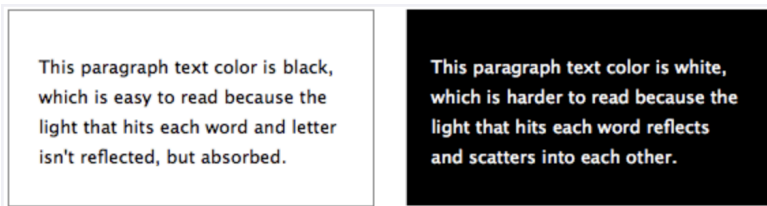


Image source: <https://uxmovement.com/content/when-to-use-white-text-on-a-dark-background/>

Let's take a look at an example of a simple assistive computing technology for people with hearing impairment:

- 🎥 Play a few seconds of the following video: <https://tinyurl.com/ycgaoq2t>

Prompt students to name some people who might not be able to know what the video is saying. Possible answers could be people that don't understand English, people that are too young to understand and of course people who cannot hear.

Then prompt students to suggest changes to the video that would help people with hearing impairments.

Replay the video, but this time turn on closed caption (CC) by clicking on the CC icon at the bottom of the screen. Point out and explain this feature to students.


Closed captioning (CC) refers to the text version of the spoken words that accompany videos or movies so that deaf and hard of hearing people can also enjoy watching movies.

3. Student Activity: Who Uses Which Assistive Technology



Explain the activity and distribute the activity worksheet to students. Allow time to go over the answers.

4. Class Discussion and Wrap Up

 Discussion Points
<ul style="list-style-type: none"> ● What are some examples of how software and hardware can help people with certain disabilities? ● Why is it important to have assistive technology? ● In which ways do you think technology will continue to improve to help more people with disabilities?

Student Activity: Who Uses Which Assistive Technology

A group of students are able to use a computer with some help from assistive technology. Check out these assistive technology devices and software.

Can you figure out which device or software each student uses?

A

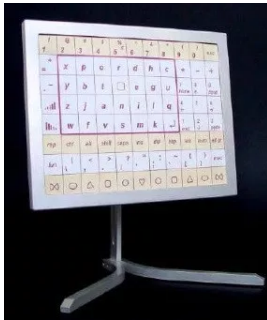


Image source: lucykeyboard.com

A keyboard on a computer screen that can be operated by a laser pointer attached to a pair of glasses.

B



Image source: aliexpress.com

A one handed keyboard

C



Screen reader software to read the content of a computer screen to the user.

Image source: <https://www.eduinreviewblog.com/>

(Fill in the letter next to each name)

1. Mateo broke his right arm and will have to be in a cast for 2 months.

2. Lucy has trouble using her hands and is not able to speak very clearly.

3. Nidhi can't see very well, even with eye glasses. _____

Francisco loves watching videos, but can't hear. Can you think of an assistive technology that would help him enjoy his video watching?

