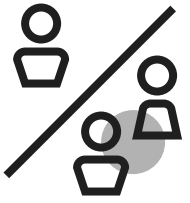
INCLUSIVE
TECH LAB

Devices + Accessories + Augmentations

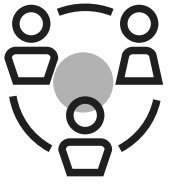
A Microsoft inclusive design toolkit for hardware

Contents

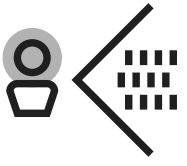
This guide builds from these three principles:



Recognize exclusion



Learn from diversity



Solve for one,
extend to many

aka.ms/InclusiveDesign

Digital and physical

When we started our inclusive design practice, we were striving for the idea of one–size–fits–one and not one–size–fits–all. Software is malleable. Digital experiences can be configured — tailored to fit individuals with disabilities.

Physical products are rarely fluid, they have form. We strive to recognize and design how forms can be adjustable as well as augmented to meet the needs of the disabled

What we believe

Modern products provide experiences that intertwine the digital and physical. We believe to meet the needs of human diversity we must approach product design striving to create flexible systems through a lens of
Devices + Accessories + Augmentations

"If accessibility is the solution, then disability is the opportunity. Disability is complex, so we must design flexible solutions." – Dave Dame

Tyler Schrenk. Esteemed advocate and partner. Rest in power

What we believe

Devices + Accessories + Augmentations

People interact with computers in infinite ways, across infinite contexts, and functions of human diversity. Tailoring adaptive systems of input and output ,that fit, will empower the disabled.


Brand Guidelines
2h ago
Quarterly Payroll Report
Yesterday at 4:24 PM
Sara Philips
Snipping Tool
To Do
Movies & TV
LinkedIn
Clock
Travel Itinerary
17m ago
Expense Worksheet
12h ago
Adatum Company Profile
Yesterday at 1:15 PM
More
10/20/21
11:11 AM
PrtScn
Home
PgUp
PgDn
Backspace
Del
Enter
Alt

Device design should strive to find a balance of the perceivability, operability, and understandability needs of a diverse group of disabled users.

Identifying the diverse needs come from partnership with disabled communities.

Compromises will inevitably be made, but they should thoughtful and made with intention.

A robust ecosystem of devices, accessories, and augmentations gives people unlimited possibilities for creating a system that fits their needs.

2-in-1s are versatile computers that can adjust to various scenarios. When something is difficult to see, instinctively, one tends to move closer to the screen. The stand facilitates this movement and a healthier posture. Despite being detached, the wireless mouse and keyboard are still portable. For the partially sighted, the UI can be made more perceivable by using High Contrast mode and increasing the display scale. The Surface Adaptive Kit can be used to customize the keyboard, power cable, and ports, providing extra tactile and visual cues.

Devices can adapt to people's needs, it's vital to capture and share these configurations so others can see and relate to the setups and make them their own.


Surface Adaptive Kit guide - Mic
https://support.microsoft.com/en-us/surfac...
Microsoft | Support
Microsoft 365
More
Buy Microsoft 365
All Microsoft
Surface Adaptive Kit guide
The Surface Adaptive Kit is a flexible set of tactile tools that can be used many ways and examples are provided throughout this guide. While this guide has many suggestions for how to use the labels and openers, apply them in the ways that work best for you.
Search

What we believe

Awareness is essential

People with disabilities are the true experts on the barriers they face. Yet, they might not always be aware of the solutions or designs that can help over come or eliminate those barriers.

Many people remain unaware of the plethora of empowering devices designed for individuals with disabilities. These four specialized mice available for those who cannot use a conventional mouse.

Raising awareness of products tailored for the disabled is as crucial as their creation.

Support materials should not only include instructions and tips but also feature demonstrations by disabled users, so others can see someone like them succeeding with the device.

It is essential to foster communities where we can share and curate knowledge for the benefit of all.


logi


OPTIMA


RAM

What we believe

Sophisticated & straightforward approaches

The disabled have a rich history of augmenting objects to fit their needs, embracing accessibility through innovation. Quality modifications, not necessarily high-tech, is their rightful expectation.


Search
1 new notification
10:00 AM
8/1/2023

Forms that fit individuals, enhancing their function is the priority. These can be sophisticated in design or technology, or straightforward yet elegant.

Inclusive design shapes forms to fit individuals, not the other way around.

The enclosure on the Surface Pen in the image ensures that the user doesn't exert pressure, which is hard for them, on the fingertips for grip, and it avoids discomfort in the thenar webspace—the area between the thumb and index finger. The mesh bubble not only improves the grip but also lightens the pen's weight.

What we believe

Adjustments are augmentation

Ergonomics began during World War II, adapting equipment design to human capabilities for better efficiency and safety. Products designed to be adjusted provide built-in augmentation.

Whether it's adjusting a kickstand on a Surface Pro, tilting your laptop’s screen angle for optimal viewing, or tightening thumbsticks on an Xbox Elite Controller 2 to enhance precision, these adjustments empower users. Think of the driver's seat in a car – minor adjustments make a product fit you, the better the fit, the more usable it is. People vary in size, shape, preferences, and abilities. Adjustability is crucial to cater to these differences, fostering comfort, productivity, and safety. Ensure wide-ranging adjustability to encompass diverse disabilities.

To echo renowned disabled speaker Todd Stabelfeldt, sometimes, mere millimeters distinguish accessibility from inaccessibility.


High 86.2 gF
Med 73.1 gF
Low 57.8 gF

What we believe

Configuration is augmentation

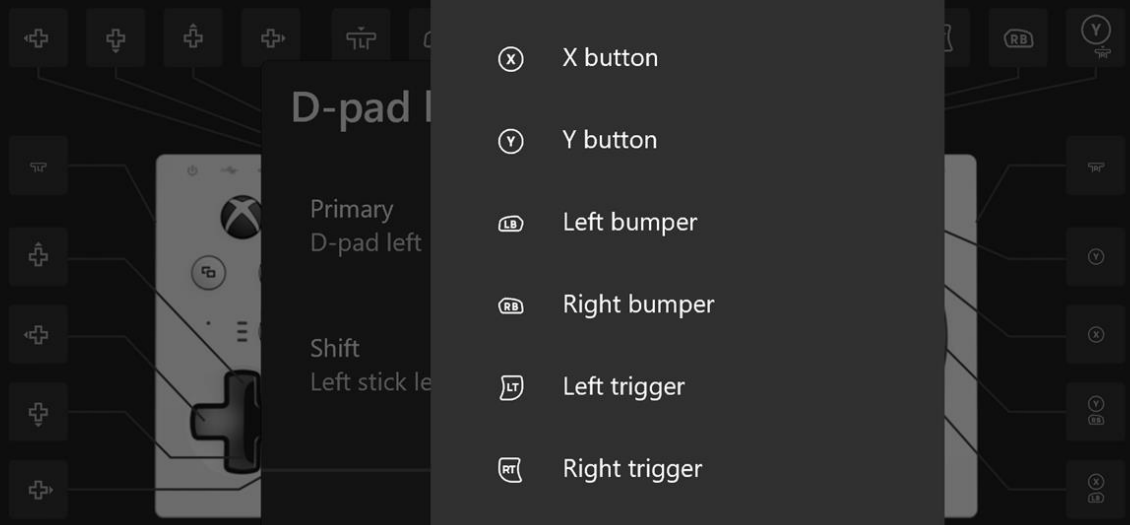
Contemporary products blend physical and digital experiences. Personalization emerges through configuration. Accessibility can be personalization that accommodates human diversity.

Mc-1h-shift-slot2

Mapping

Brightness

Choose a button to map.



D-pad l

Primary
D-pad left

Shift
Left stick le

Use as Shift

Ok

Shift

A button

B button

X button

Y button

Left bumper

Right bumper

Left trigger

Right trigger

Left stick click

Left stick up

Left stick down

Left stick left

Left stick right

Right stick click

Right stick up

Configuring product functionality, like with Microsoft Adaptive Accessories, brings efficiency, flexibility to different scenarios, and long-term usefulness as needs change.

For example, the Microsoft Adaptive Hub lets you customize not just button functions, but also how long you press a button, allowing different actions based on press timing.

Finding the right balance in options is essential—enhancing functionality for diverse disabilities without overwhelming users with too many settings.

Some disability advocates, like Aderyn Thompson, believe that all settings are accessibility settings.

Microsoft Accessory Center

Adaptive accessories › Adaptive Hub

100%

All connected devices
All connected devices

Profile 0 | Profile 1 | Profile 2 | Profile 3

Add app

Customize buttons

3.5mm port 1
Move cursor (Left)
Short press

- Not assigned (Default)
- Windows shortcut — Open Settings
- Mouse action
- Move cursor — Move cursor (Left)
- Scroll wheel
- Key combination

Up
Down
Left
Right
Up and left
Up and right
Down and left
Down and right
Cursor rotation

What we believe

Physical augmentation is not required

In certain cases, purpose-built devices and accessories offer the best solution, without the need for additional augmentation, while benefiting from adjustability and configurability.


Narrator
Welcome to Narrator
This is Narrator Home, where you can get help, access your settings, and learn about new features. Narrator is a screen reader that describes aloud what's on your screen, so you can use that information to navigate your device. To start or stop Narrator, press the Windows logo key + Ctrl + Enter. Explore the sections below to get started.
QuickStart
Learn the basics of Narrator.
Narrator guide
View the complete Narrator guide online.
What's new
Get an overview of new and updated features.
Settings
Customize Narrator. Press Windows logo key + Ctrl + N to access settings anytime.
Feedback
Help improve Narrator. Press Narrator key + Alt + F to give feedback anytime.
Show Narrator Home when Narrator starts
Start Narrator after sign-in
Exit Narrator
Minimize
Search
10:02 AM
8/1/2023

The previous page features the Humanware Braillliant BI 20X, a refreshable braille display accessory. For many, it's so empowering that it's more important than the device it's paired with.

The other accessory, the Kensington Expert Mouse, was designed for power-users, however it's form and feature set make it great for people with limited fine motor control.

These two purpose-built devices intentionally (and accidently 😊) empower the disabled without additional augmentation.

However, it is possible that products like this can benefit from augmentation. Using a 9-ball, like in the movie Ocean's 8, is a fun augmentation.


Designer
Describe the design you'd like to create
a flyer for night school computer classes
Generate
Explore more prompts
Kensington

What to do

- ☐ Continuously engage the disabled
  Participate in communities with the disabled. Understanding a breadth of challenges will guide your designs. Personal experience is never enough.
- ☐ Design to extend to many
  Products don’t exist in isolation, consider your design within a larger ecosystem of use. Assume augmentations will be needed by someone.

- [ ] Publish examples
  Showcase product utility with disabled user demonstrations. Show how your product addresses interrelated needs across disabilities.

- [ ] Share success stories
  Amplify the voices of those who've found empowerment through devices, accessories, and augmentations. Their narratives can inspire others and offer insights into potential improvements.

Acknowledgments

This guidebook is a living collection of ideas and practices. It reflects a wide community of people across Microsoft and beyond.

This was created by Bryce Johnson with input from Dave Dame, Chris Kujawski, Amanda Huynh, Christina Mallon, Tim Hulford. It is built on the work of the founding Inclusive Design Team and Inclusive Design activists that came before us