

The Art of Making Graphics Accessible

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June 15, 2018

DEPARTMENT OF HEALTH

Agenda

Introduction

Color

Alt-Text

Images

Charts and Graphs

Complex Images

Infographics

Interest



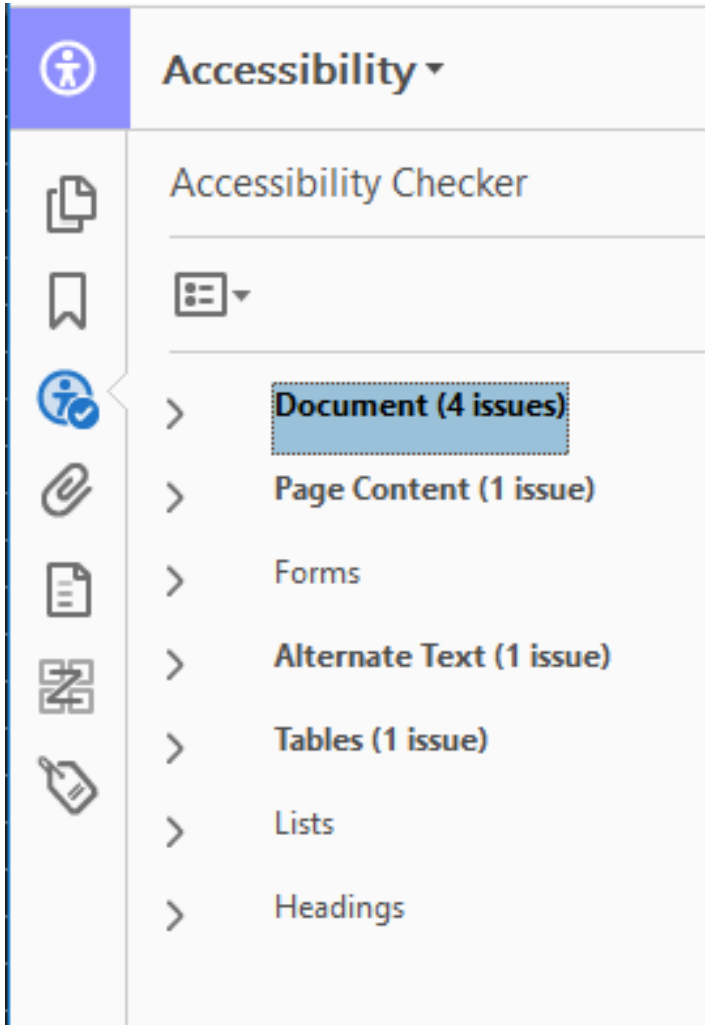
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(https://www.flickr.com/photos/iampeas/3492078010/)

Story

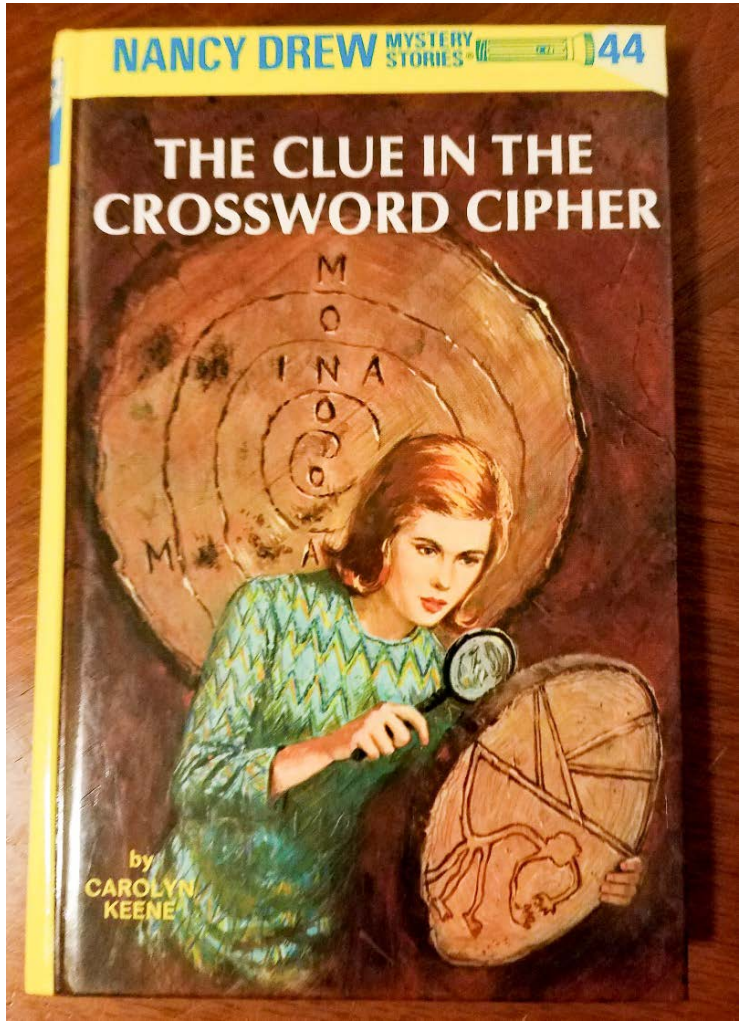


Madichan, Flickr, some rights reserved
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Accessibility Checker



Nancy Drew


NANCY DREW MYSTERY STORIES 44
THE CLUE IN THE CROSSWORD CIPHER
by CAROLYN KEENE

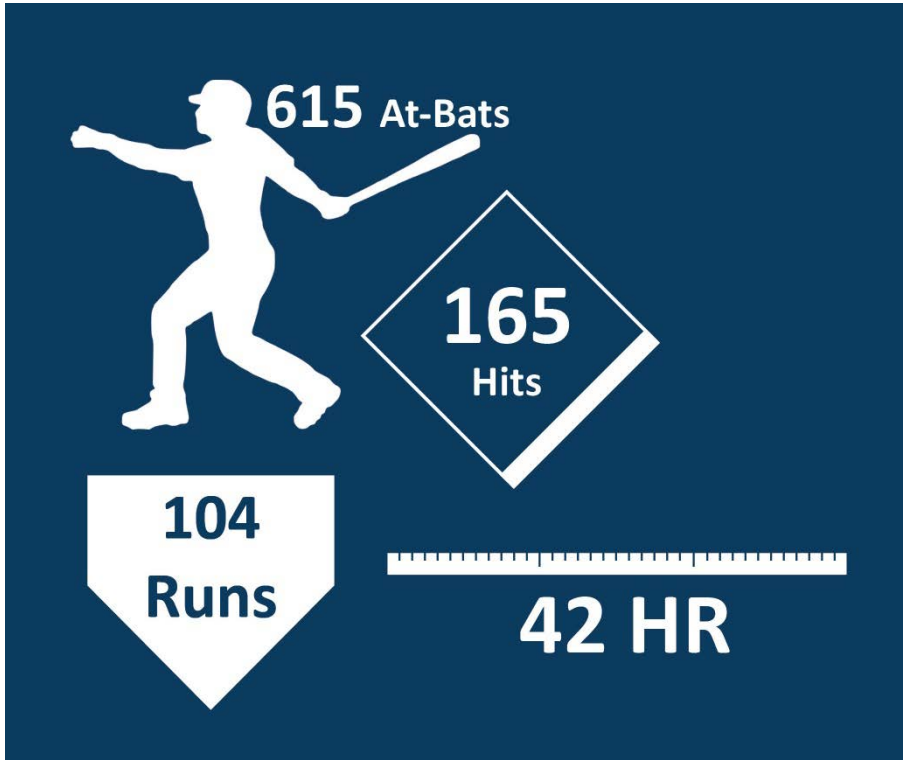
More Nancy Drew



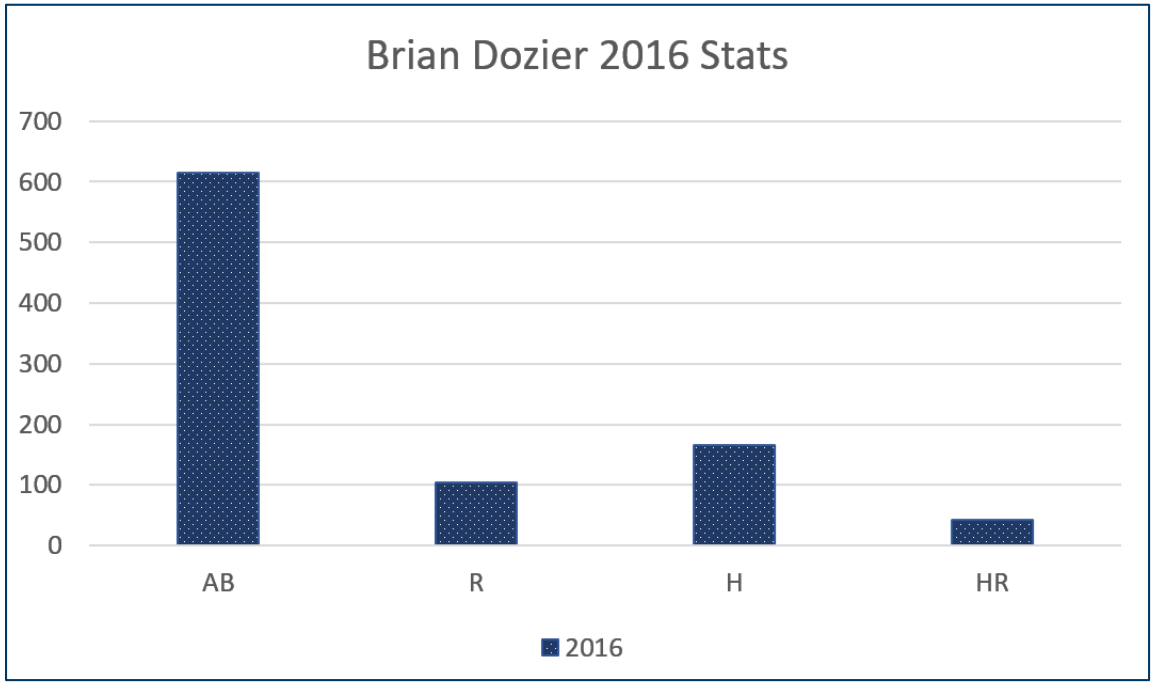
Universal Design



Different Ways to Share the Same Information

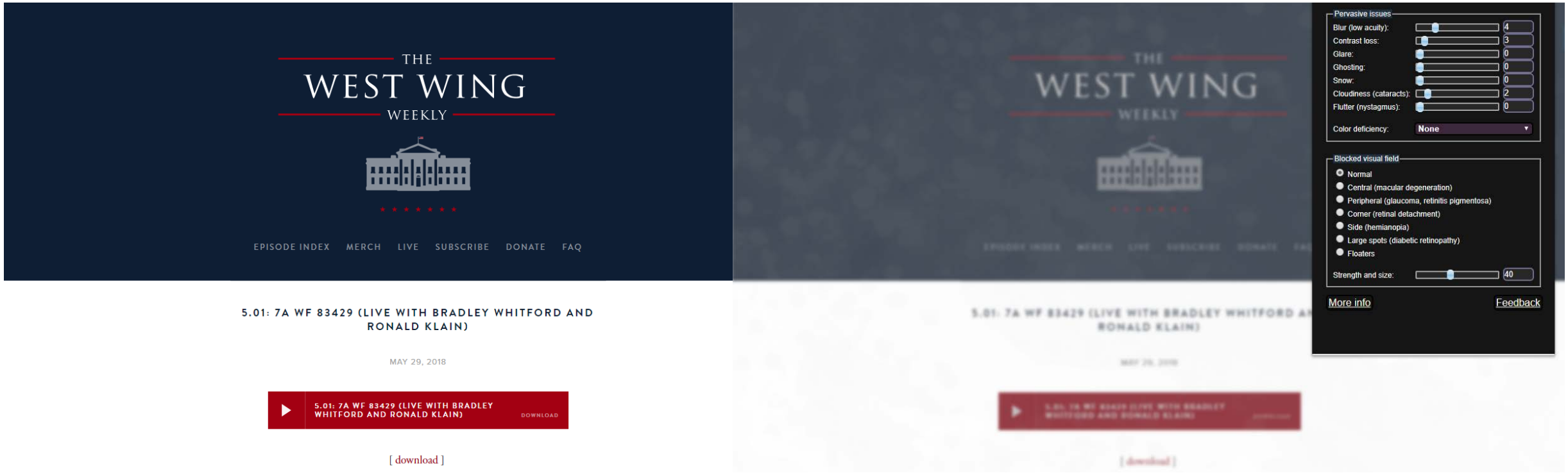


Brian Dozier	AB	R	H	HR
2016	615	104	165	42



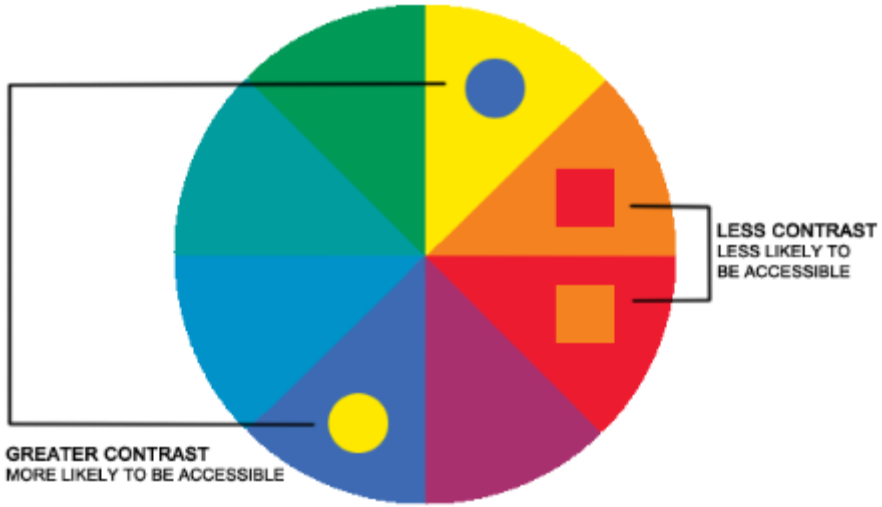
In 2016, Brian Dozier had 615 at-bats, 165 hits, 104 runs, and 42 home runs.

No Coffee Chrome Extension



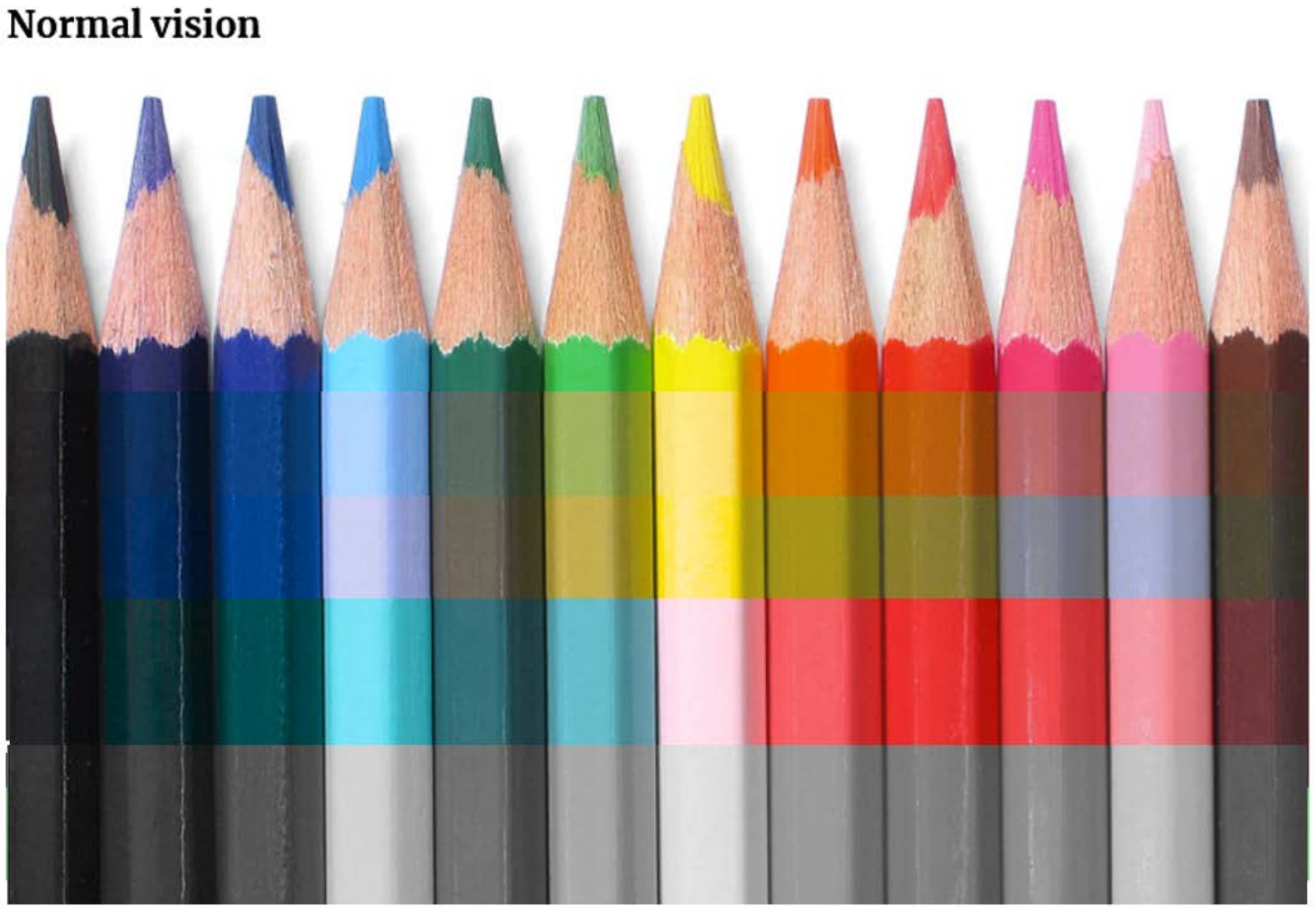
Add No Coffee Chrome Extension to Chrome browser simulate different vision impairments

Color Contrast



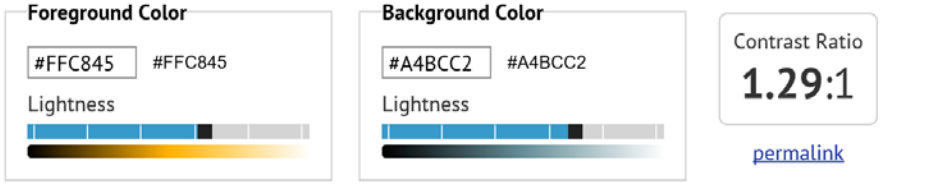
From MN.IT Office of Accessibility Accessible Word Documents Webinar Series

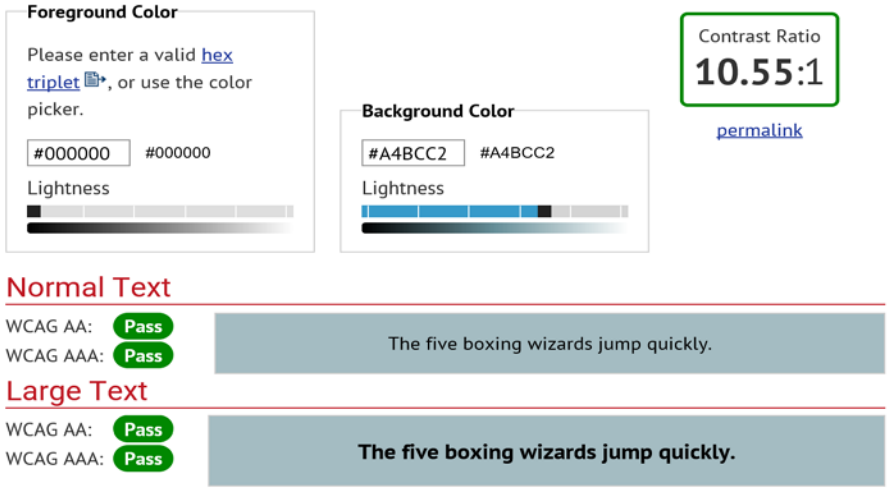
Examples of color blindness

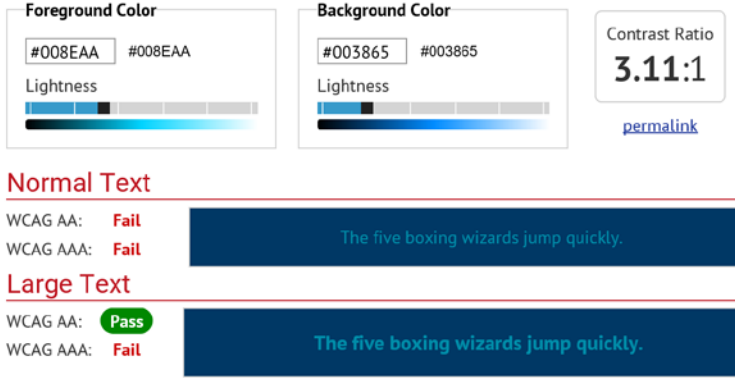


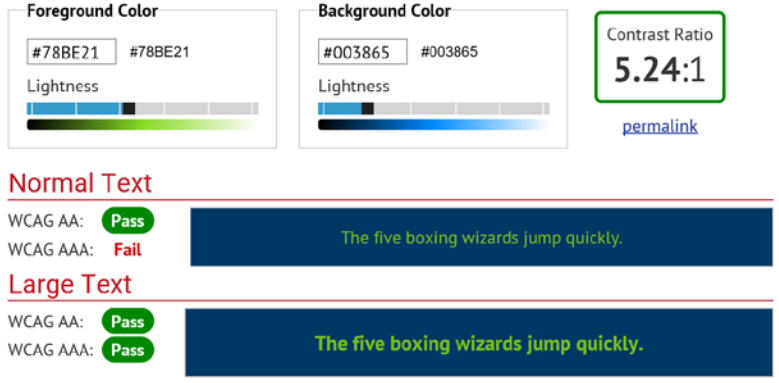
[© colors.finefix](#) [© color-blindness](#)

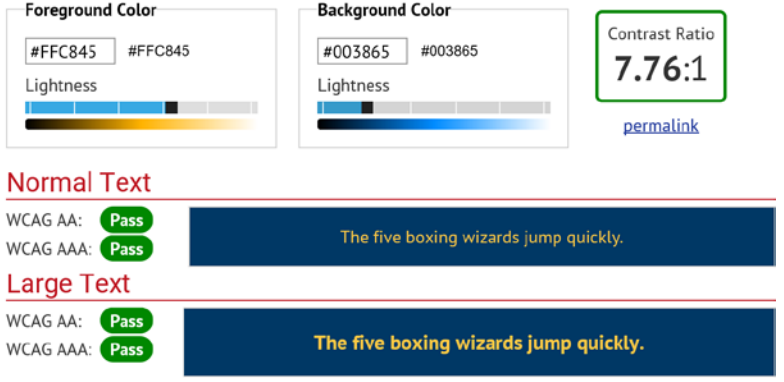
Color Contrast for Text







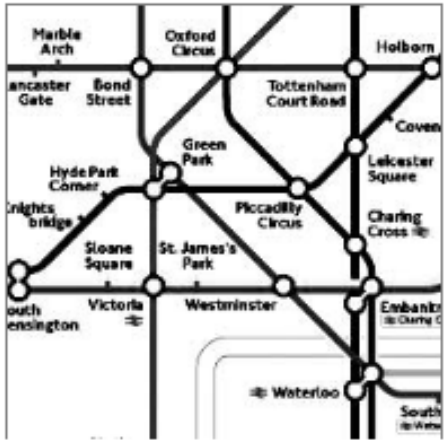




[WebAIM Color Contrast Checker (https://webaim.org/resources/contrastchecker/)](https://webaim.org/resources/contrastchecker/)

Don’t Use Only Color to Convey Importance





Examples from Webaim.org

Sign up. (Required forms in **red**)

School:

First Name:

Last Name:

Subject:

Email Address:

Sign up. (Required forms in **red**)

School:

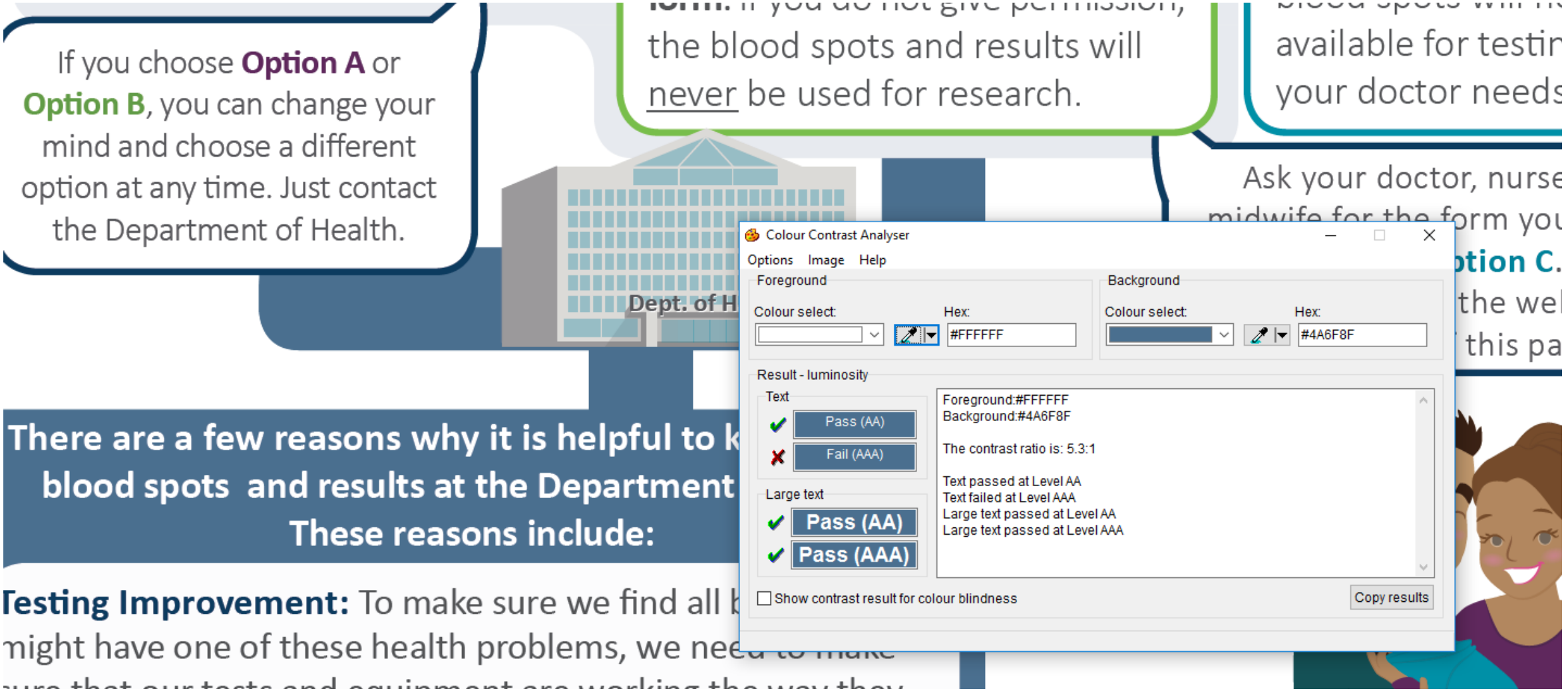
First Name:

Last Name:

Subject:

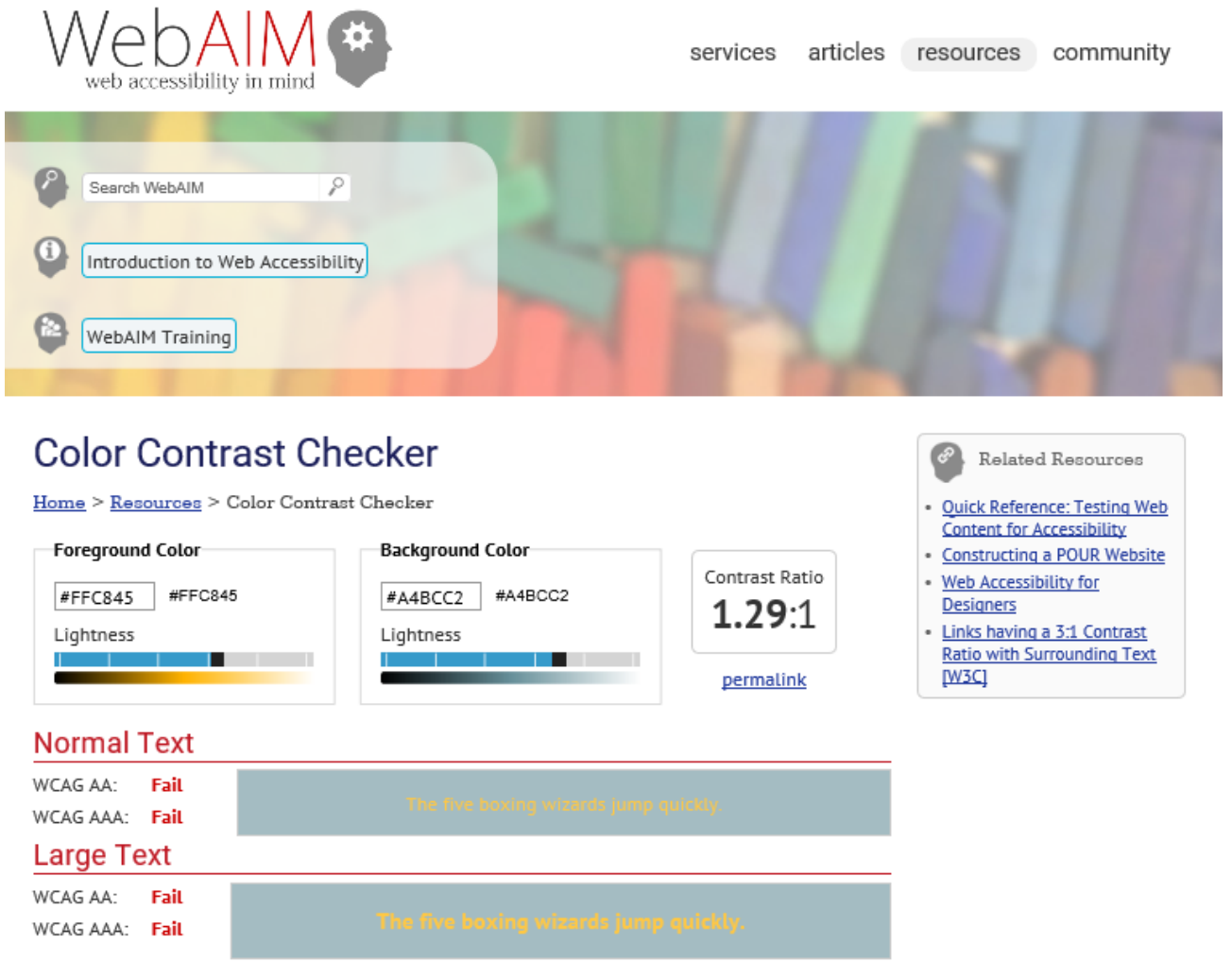
Email Address:

Paciello Group Colour Contrast Analyser



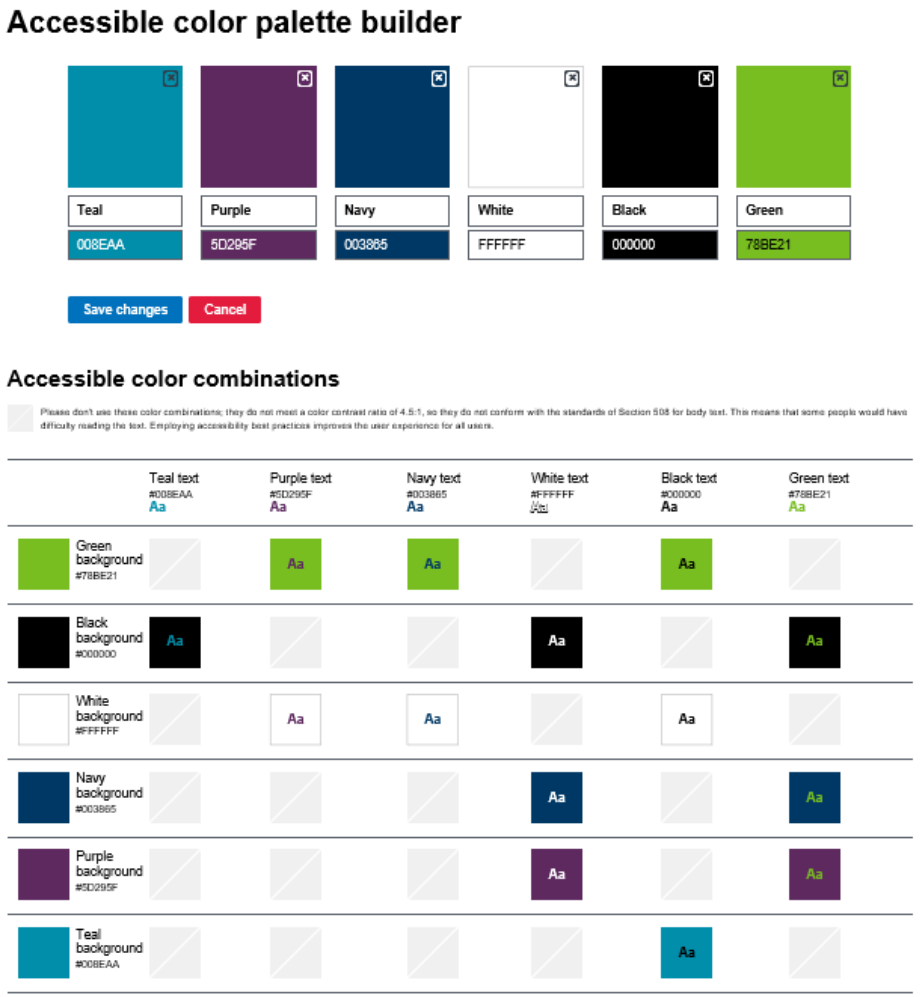
[Colour Contast Analyser (https://developer.paciellogroup.com/resources/contrastanalyser/)](https://developer.paciellogroup.com/resources/contrastanalyser/)

WebAIM Color Contrast Checker



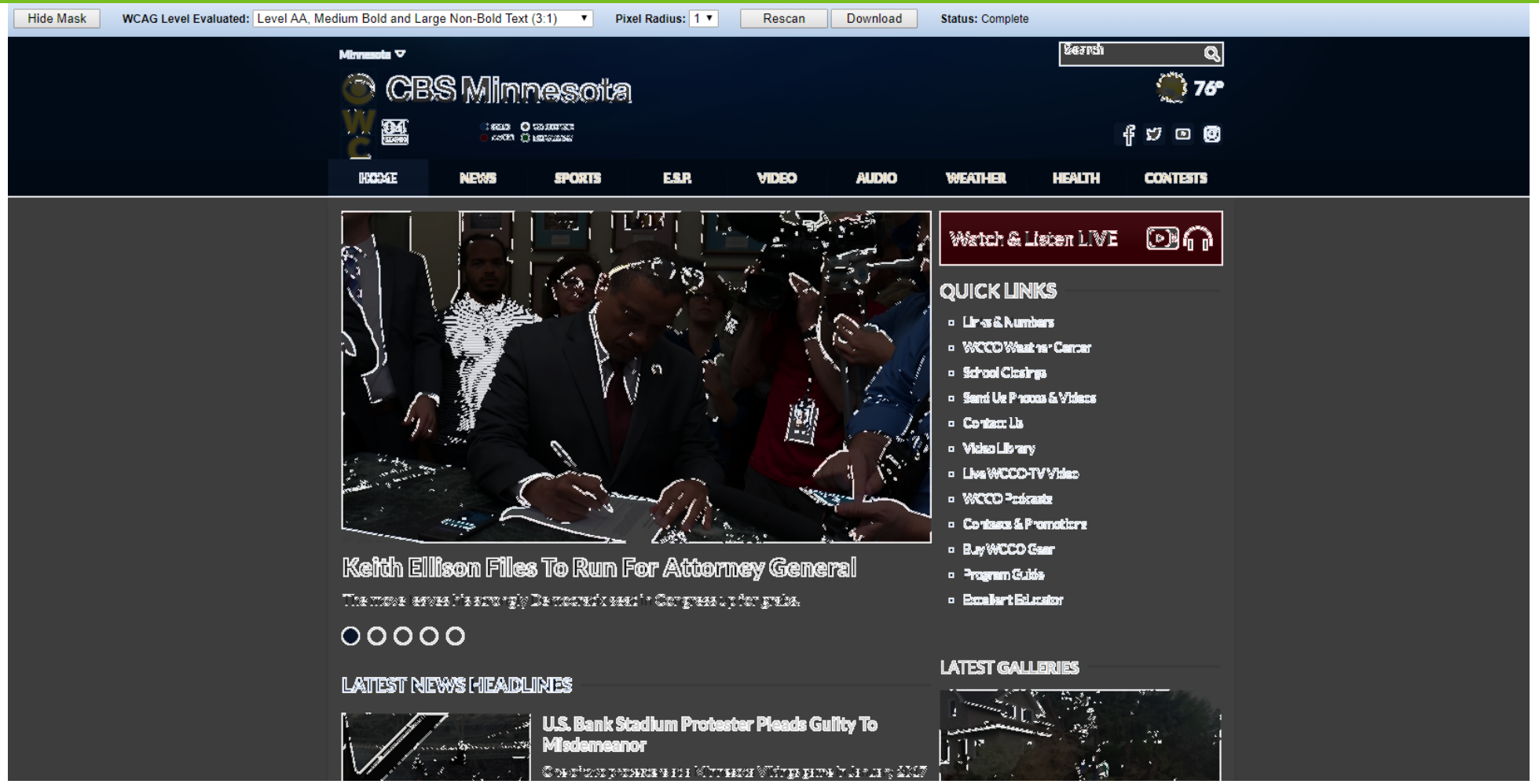
[WebAIM Color Contrast Checker (https://webaim.org/resources/contrastchecker/)](https://webaim.org/resources/contrastchecker/)

GitHub Accessible Color Palette Builder



[GitHub Accessible Color Palette Builder (https://toolness.github.io/accessible-color-matrix/)](https://toolness.github.io/accessible-color-matrix/)

Color Contrast Analyzer Chrome Extension



[Color Contrast Analyzer Chrome Extension (https://chrome.google.com/webstore/detail/color-contrast-analyzer/dagdlcijhfbmgkjokkjicnnfimlebcll)](https://chrome.google.com/webstore/detail/color-contrast-analyzer/dagdlcijhfbmgkjokkjicnnfimlebcll)

RGB-to-Hex Conversion

RGB-to-Hex Conversion

▸ Contents | JavaScript FAQ | JavaScript Colors FAQ G+

Question: How do I convert RGB values of a color to a hexadecimal string?

Answer: The RGB-to-hexadecimal converter algorithm is simple: make sure that your R, G, B (*red, green, blue*) values are in the range 0...255, convert R, G, B to hex strings, and then concatenate the three hex strings together. Convert RGB to Hex color values here:

R:255 G:255 B:255 Convert to Hex G+

⊞ Source code | See also Hex-to-RGB | RGB-to-CMYK | RGB-to-HSV | Color names

RGB/hex codes for named colors supported in most browsers are listed below:

	rgb(255,255,255)	#FFFFFF		rgb(255,0,255)	#FF00FF
	rgb(245,255,250)	#F5FFFA		rgb(238,130,238)	#EE82EE
	rgb(240,255,255)	#F0FFFF		rgb(218,112,214)	#DA70D6
	rgb(240,255,240)	#F0FFF0		rgb(186,85,211)	#BA55D3
	rgb(224,255,255)	#E0FFFF		rgb(147,112,219)	#9370DB
	rgb(240,248,255)	#F0F8FF		rgb(138,43,226)	#8A2BE2
	rgb(245,245,245)	#F5F5F5		rgb(148,0,211)	#9400D3
	rgb(248,248,255)	#F8F8FF		rgb(153,50,204)	#9932CC
	rgb(255,255,240)	#FFFFF0		rgb(139,0,139)	#8B008B

RGB-to-Hex Conversion (http://www.javascripter.net/faq/rgbtohex.htm)

Alt-Text

MNSCREEN Begins Live Reporting in Minnesota Hospitals



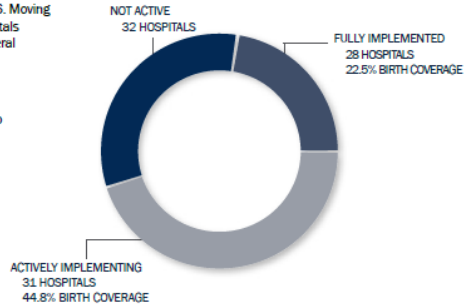
The implementation of MNScreen, the Newborn Screening Program's new system for reporting hearing and pulse oximetry screening results from hospitals directly to the program, continued in 2015 with much success. By the end of 2015, 28 (31%) Minnesota birth hospitals were using MNScreen to report their hearing and pulse oximetry results in real-time. Another 31 (34%) hospitals were actively working with the program to implement the system in their facility. Hospitals using MNScreen have seen improvements both in timeliness of reporting as well as completeness of reporting.

Statewide implementation of such a robust electronic system is a new initiative not only at the program level, but at the agency and national level as well. As such, we have encountered several uncharted challenges, including device networking issues, transitions between Electronic Medical Record systems, competing IT priorities at birth facilities, etc. Despite these obstacles, the MNScreen project continues to pave new ground, and is on pace to be the first statewide electronic newborn screening reporting system in the nation to receive hearing screening data exported directly from the screening equipment.

The program's goal is to have all hospitals fully implemented in MNScreen by the end of 2016. Moving forward, we will continue to reach out to hospitals to begin implementation. We have begun several initiatives in an effort to make statewide implementation a reality:

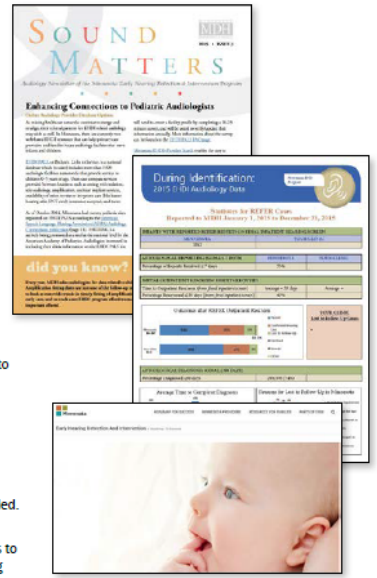
- Exploring the ability to provide grants to Critical Access Hospitals in Minnesota to aid in implementation costs
- Beginning the process for MDH to declare MNScreen a Public Health Specialized Registry for Meaningful Use Stage 2[1]

We look forward to exploring other improvements to the program that will be made as a result of MNScreen!



[1] A Specialized Registry must collect production data from the providers' EMR using certified electronic medical record (EMR) technology and is used to improve quality, safety, efficiency, and reduce health disparities. By declaring MNScreen a Public Health Specialized Registry for Meaningful Use eligible providers will be able to recieve an incentive for electronically reporting what they are already required to report to our program.

Audiology Partnerships Support EHDI Goals



Audiologists are key stakeholders when it comes to achieving EHDI goals and the MDH-EHDI partnership with Minnesota audiologists is vital for a successful MN EHDI system. We strive to provide ongoing support, foster effective communication, and encourage collaboration in a variety of ways to keep EHDI goals a priority.

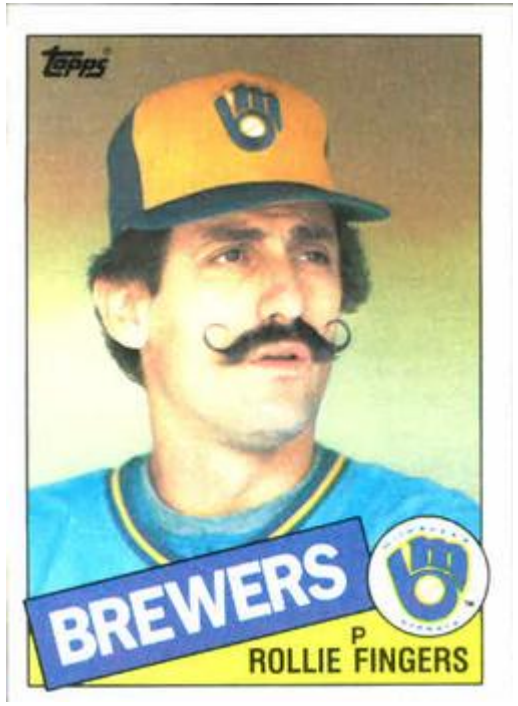
Personal contact, print & electronic media, formal education sessions, data, and quality improvement initiatives have been utilized to engage audiologists in working toward timely hearing diagnosis, referrals, and overall EHDI best practices. We also rely on Minnesota audiologists to shape guidelines by participating in workgroups.

Examples of resources that offer timely information specific to MN EHDI include:

- *SoundMatters* – a quarterly e-newsletter for pediatric audiologists that provides topic discussion, audiology highlights, data, and advisory committee highlights.
- Audiology Clinic EHDI Data Reports – provide data back to audiologists specific to their clinic to illustrate their improvements and where improvement may still be needed.
- *Improve EHDI* Website – shares information specific to audiology, but is also used as a reference by audiologists to learn what EHDI is providing to other stakeholders, giving audiologists the 'big picture' right at their fingertips.
- In 2015, MDH had the opportunity to partner with the Minnesota Academy of Audiology (MAA) to sponsor a pediatric pre-session to MAA's annual Upper Midwest Audiology Conference. Speakers Dr. Gail Whitelaw and Dr. Ryan McCreery presented best practices in pediatric audiology and maximizing outcomes for children with hearing loss. Round table forums following the lectures provided the opportunity for pediatric audiologists to discuss essential topics in pediatric audiology.

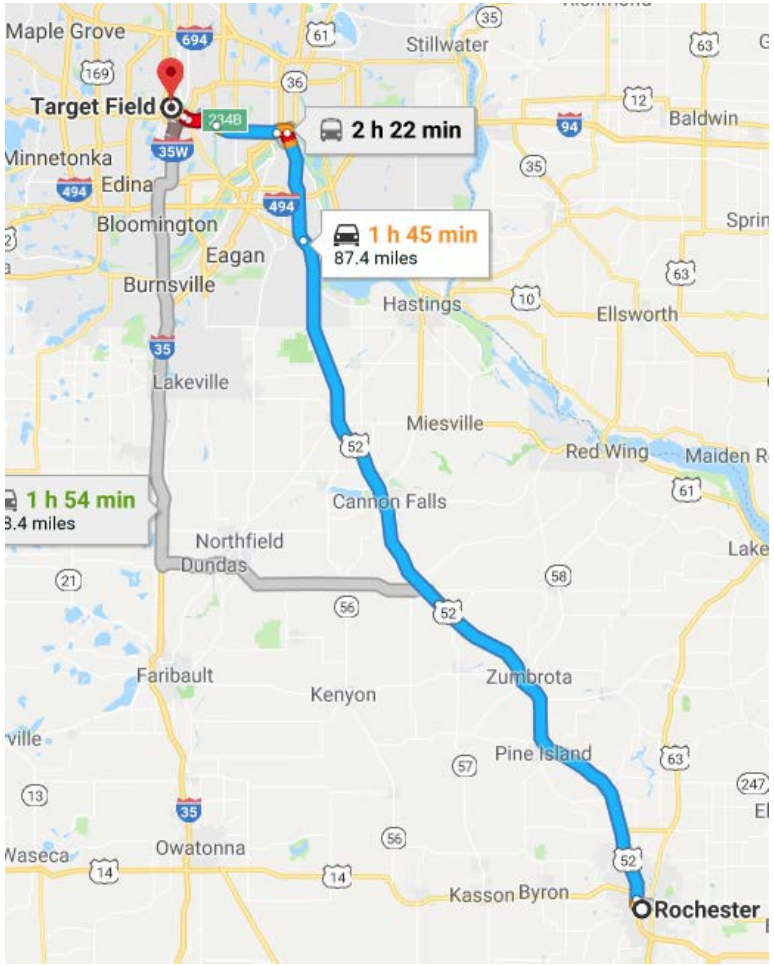
97.7% of attendees agreed/strongly agreed that the MAA pre-session gave them ideas to improve practices to meet EHDI goals

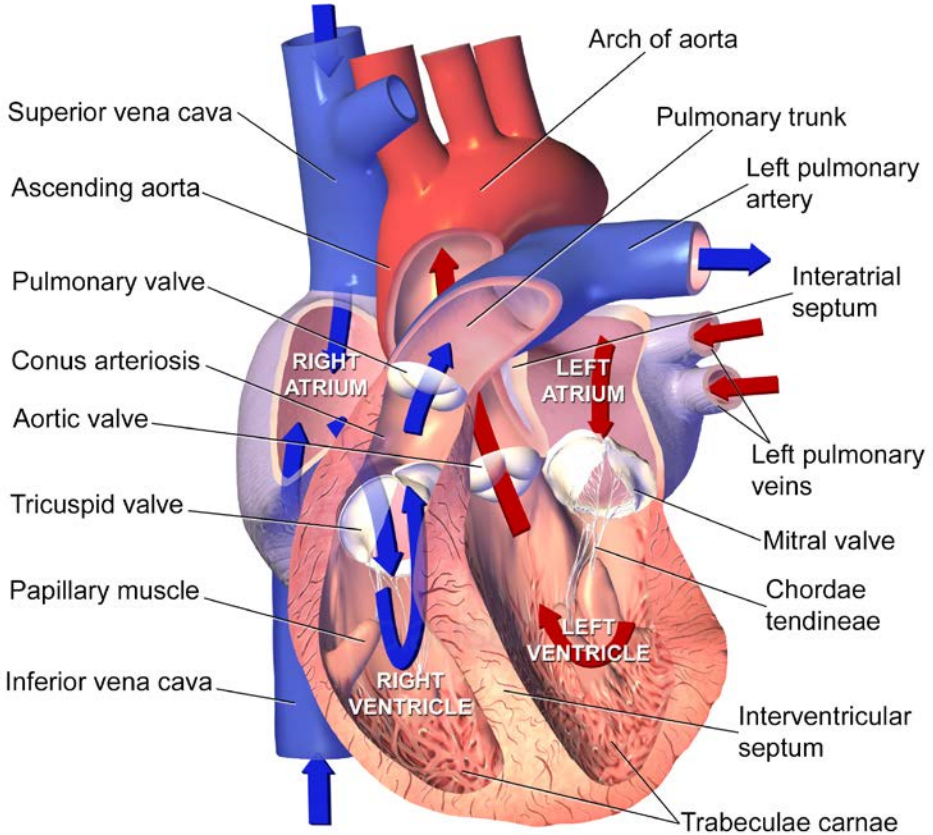
Alt-Text and Context



- Baseball card
- 1985 Topps baseball card, Rollie Fingers
- Rollie Fingers, a pitcher for the Milwaukee Brewers, was a 7x All-Star, MVP, Cy Young winner, and appeared in 3 World Series
- Rollie Fingers, great handlebar moustache

Images





Sectional Anatomy of the Heart

Don’t Use Images in Place of Words



“Stop, graphic carpenter hammer time.”

Example 2: Don’t Use Images in Place of Words

I have 

your proposal.

“I have blue rubber approval stamp your proposal.”

Don’t Use Images of Text

Climate intervention . . . fracking . . . vaccines . . . human genome editing . . . artificial intelligence. . . . With so many complex, important, and sometimes uncertain scientific issues facing our society, there has never been a more critical time to communicate science effectively. Polls show that the public has high trust and confidence in science and believes that science provides great benefits to the world. Yet, many people continue to deny the conclusions of science in areas such as evolution, climate change, and vaccination. Why do people refuse to accept the scientific consensus on these topics given their high confidence in science generally?

Miscellaneous

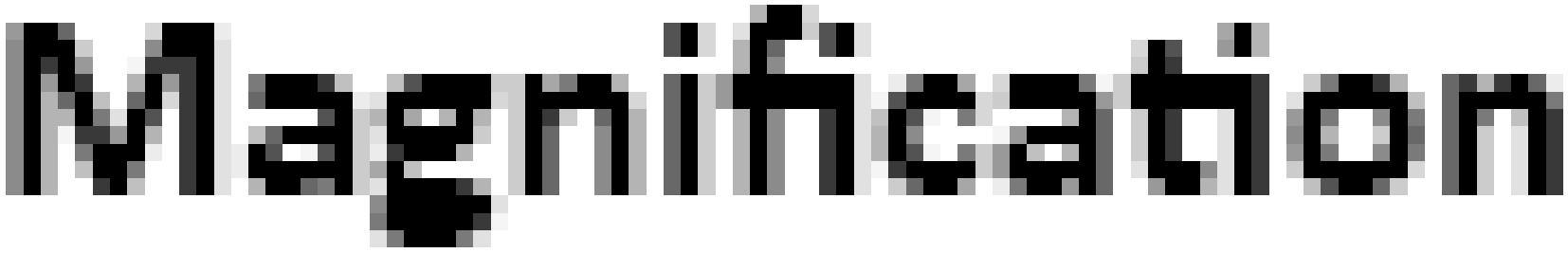
- When including images make sure they are merged/flattened. Images should reside in a separate layer in the Layers Panel.
  - Baby Toe Phenomenon



- Text should be text whenever possible
- Anchoring objects (ex. images)
  - Anchor objects only when you are specifically referring to them in the text and would like the reader to reference them
    - Ex: “...for data from 2013, please reference Figure 2.”
  - Anchoring objects inappropriately can alter your reading order

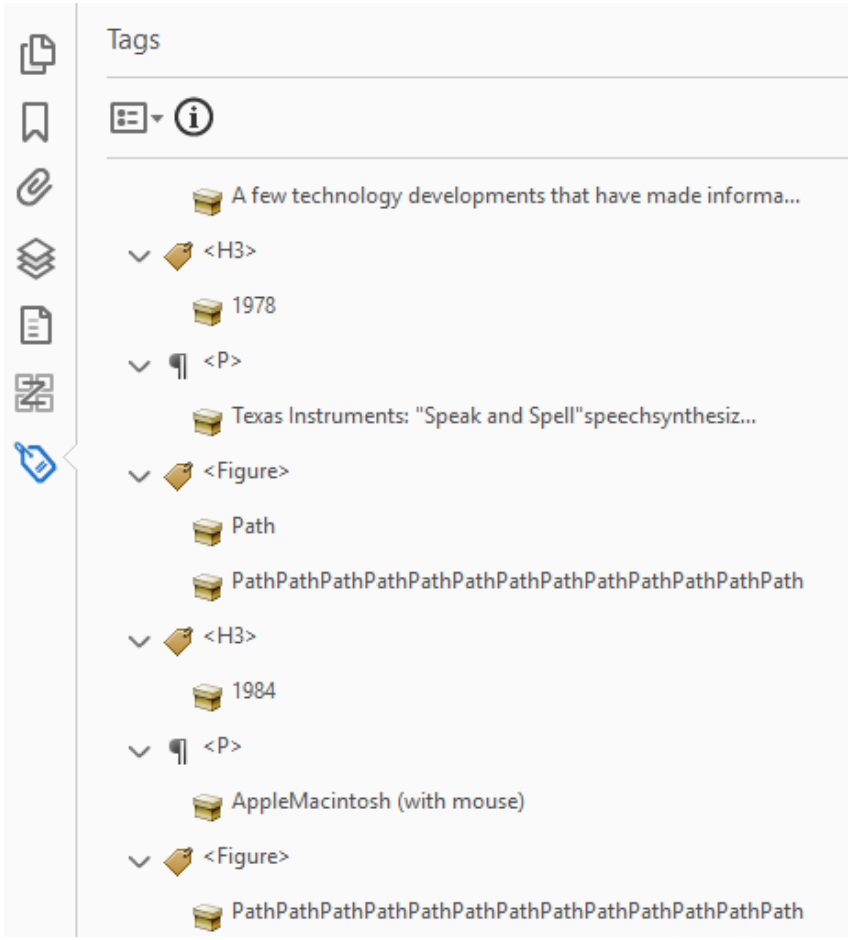
Check Magnification

Magnification

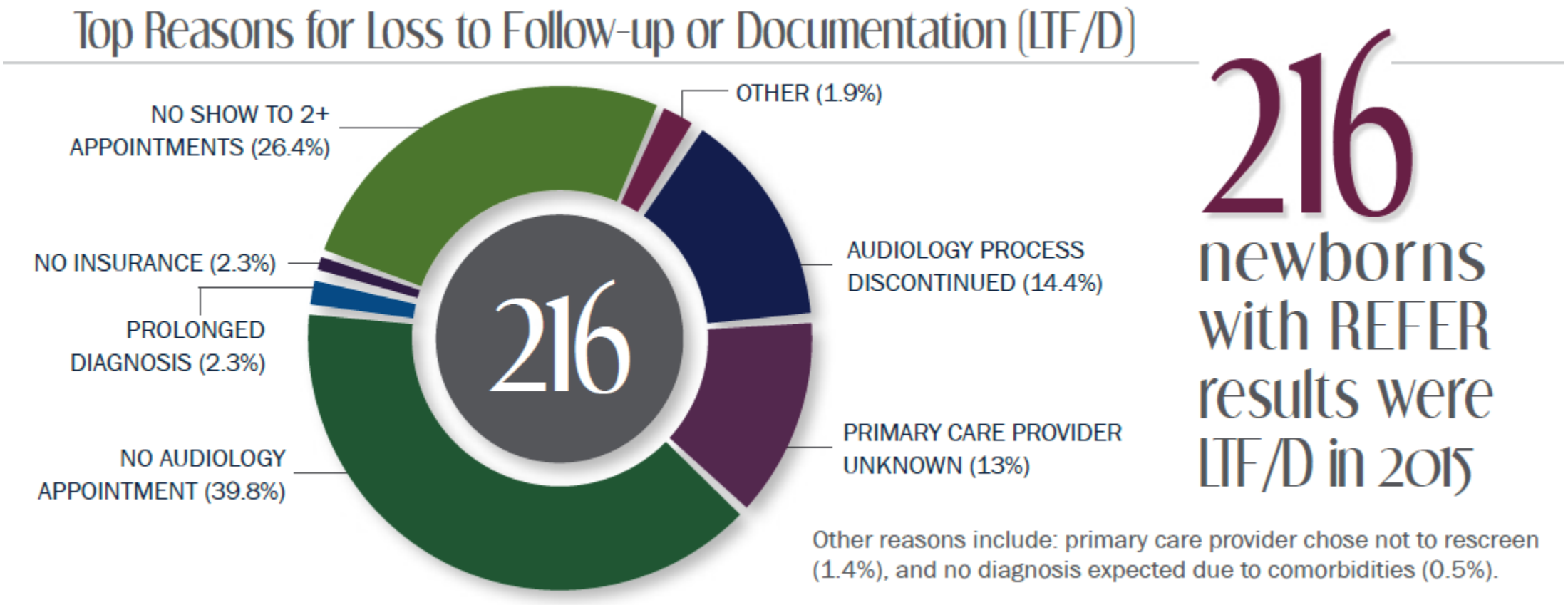


Magnification

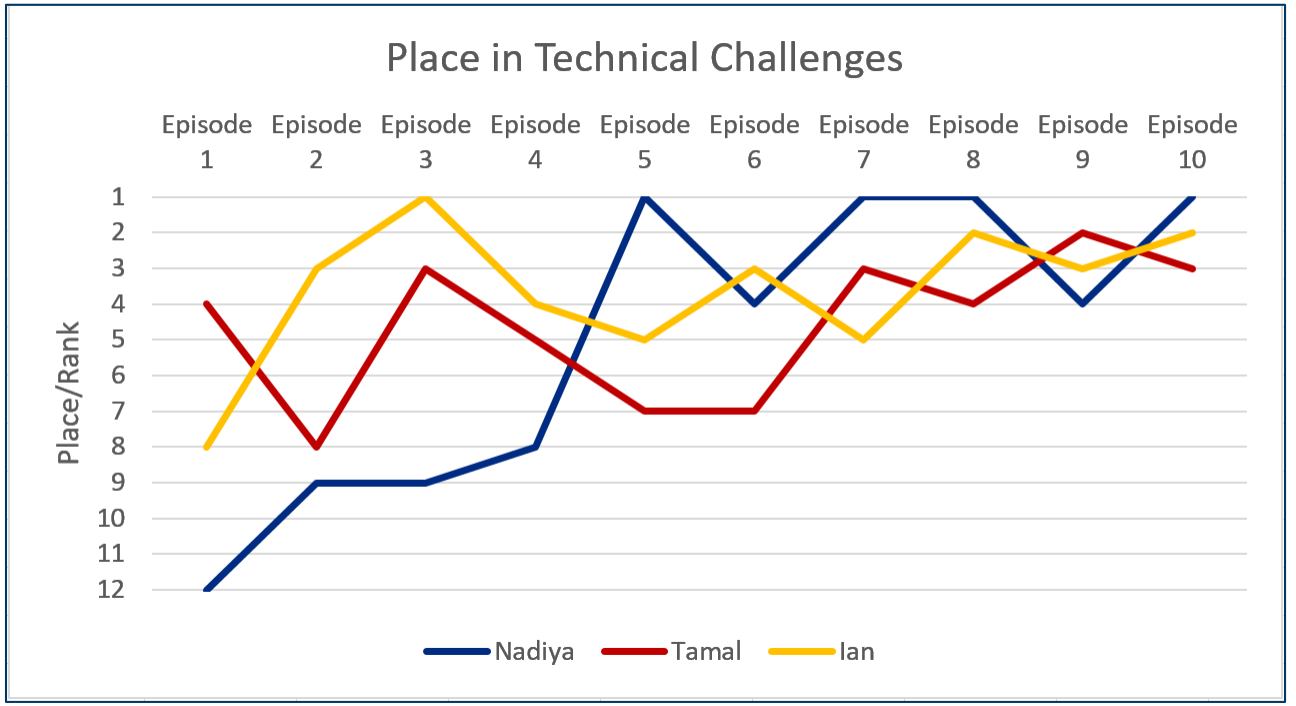
PDF Tagging


Tags
A few technology developments that have made informa...
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1978
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Texas Instruments: "Speak and Spell"speechsynthesiz...
<Figure>
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1984
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AppleMacintosh (with mouse)
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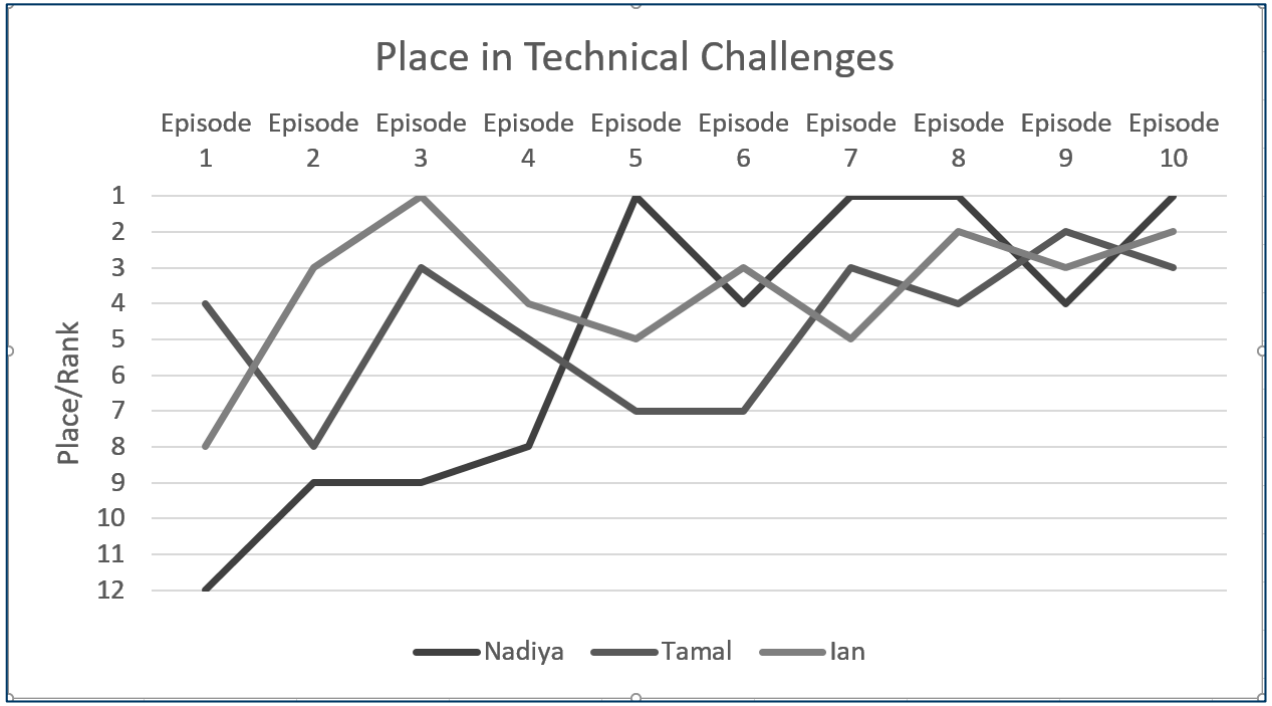
Charts and Graphs



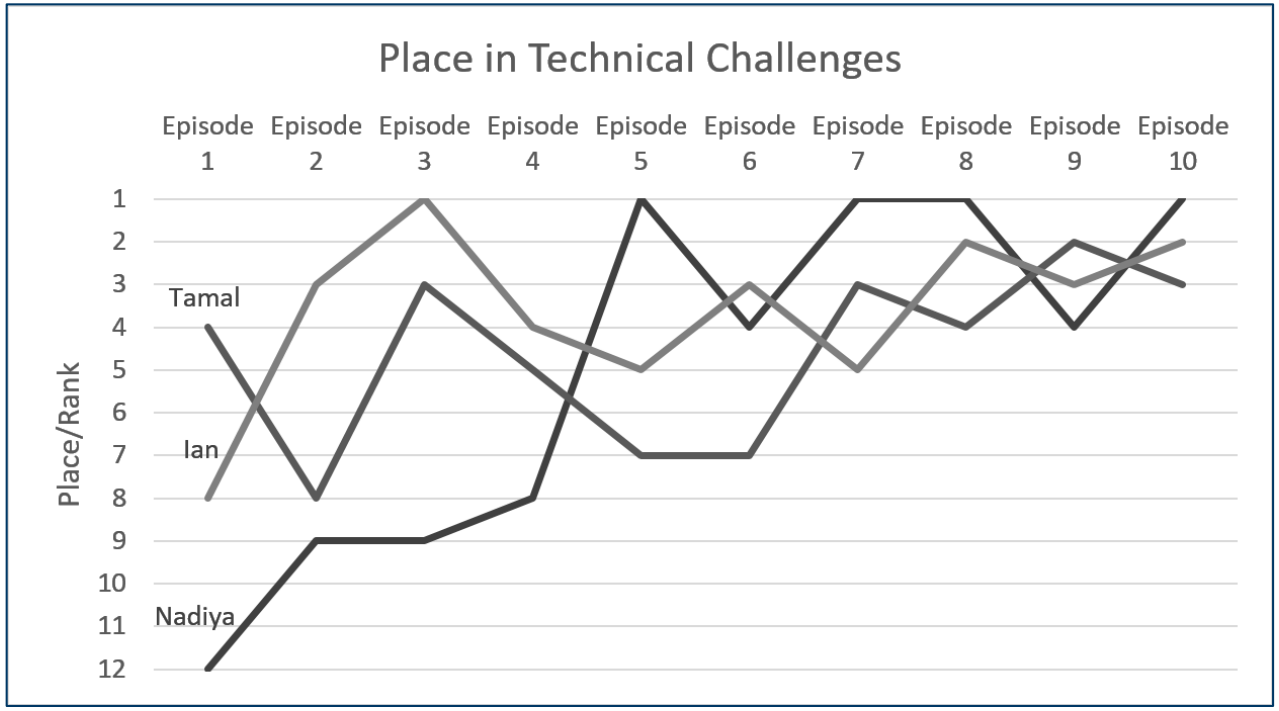
Line Chart: Only Color



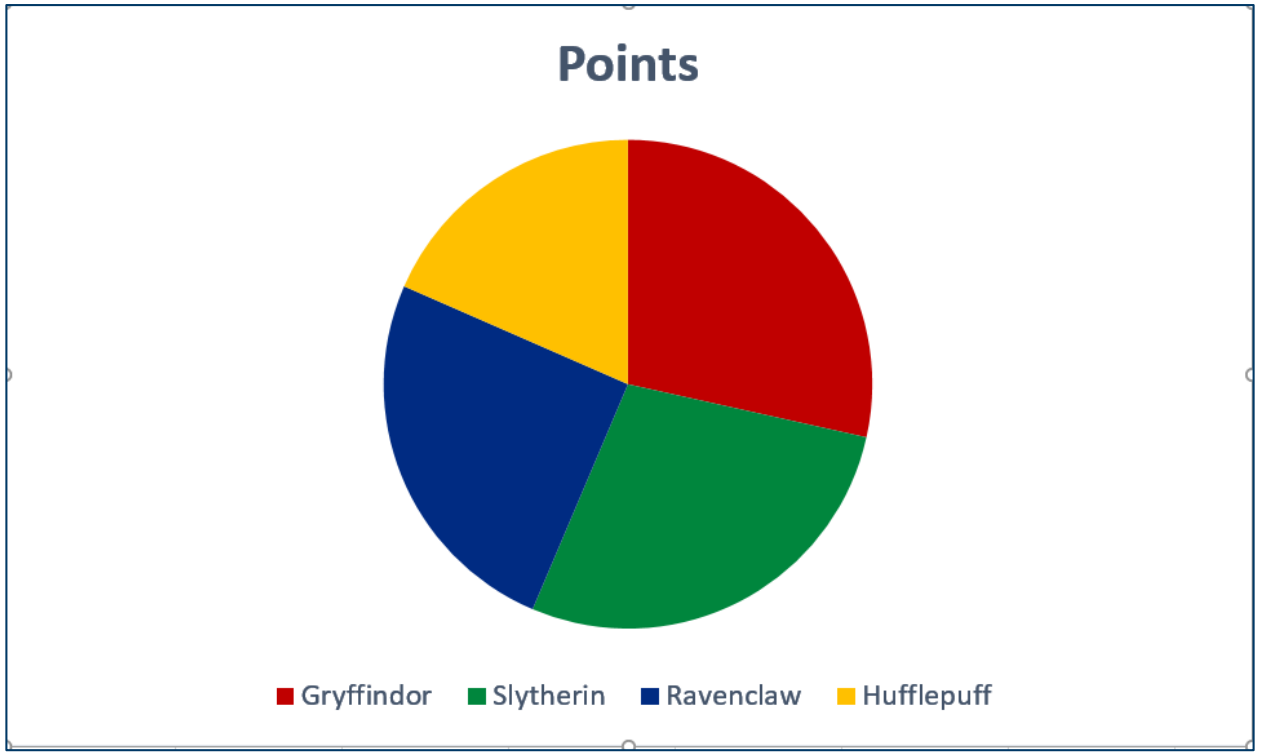
Line Chart: Only Color, Not Enough Contrast



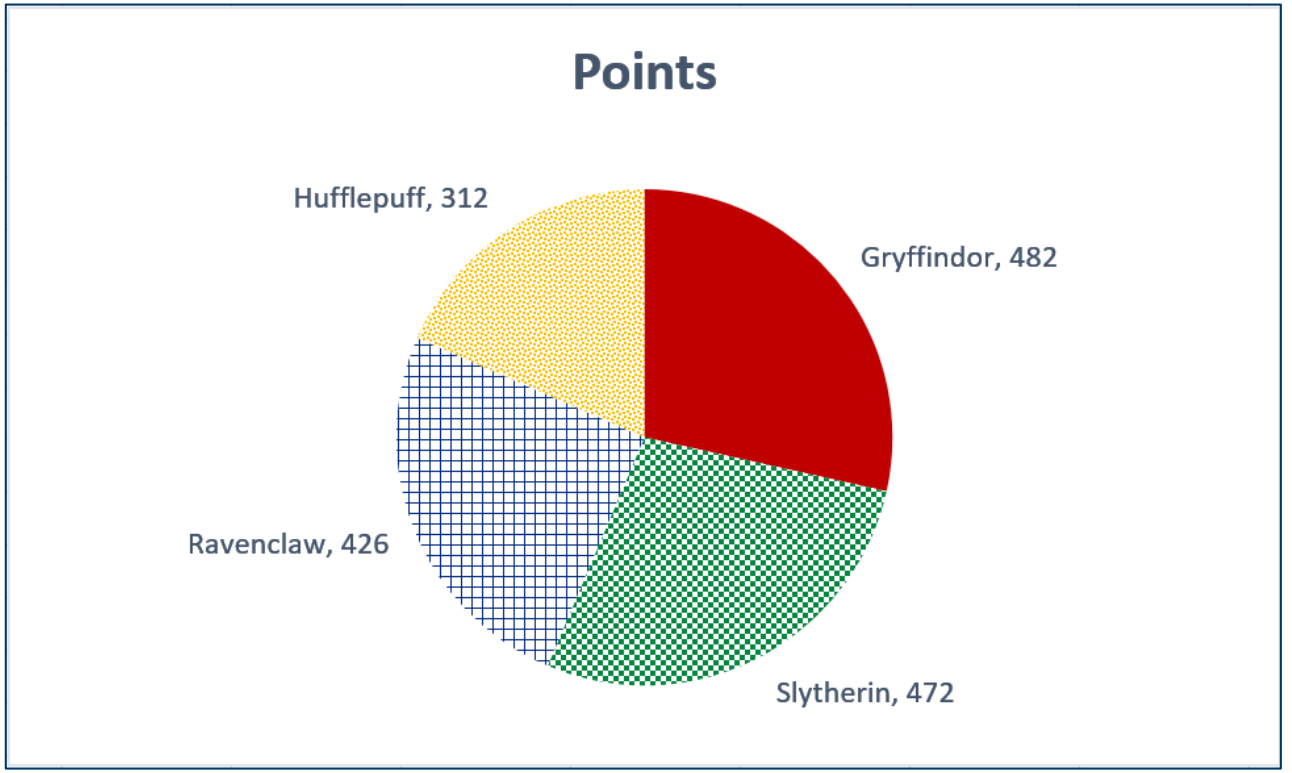
Add Data Labels



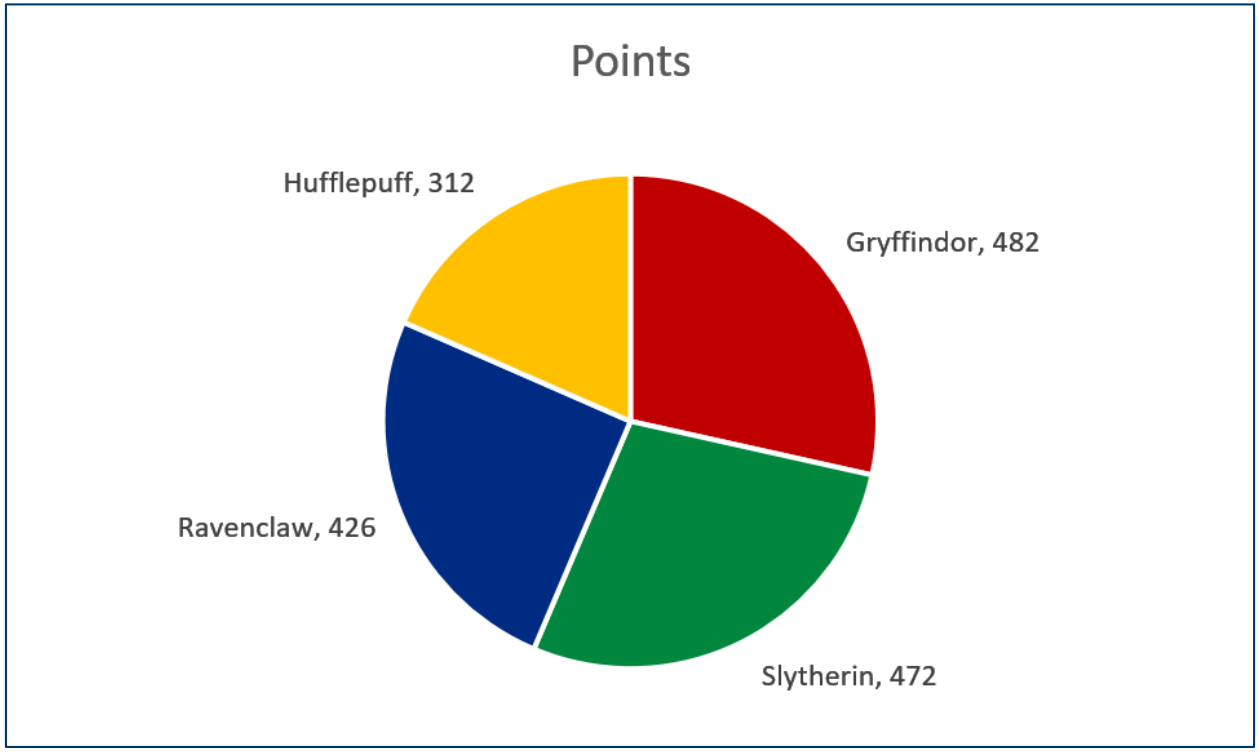
Pie Chart: Only Color



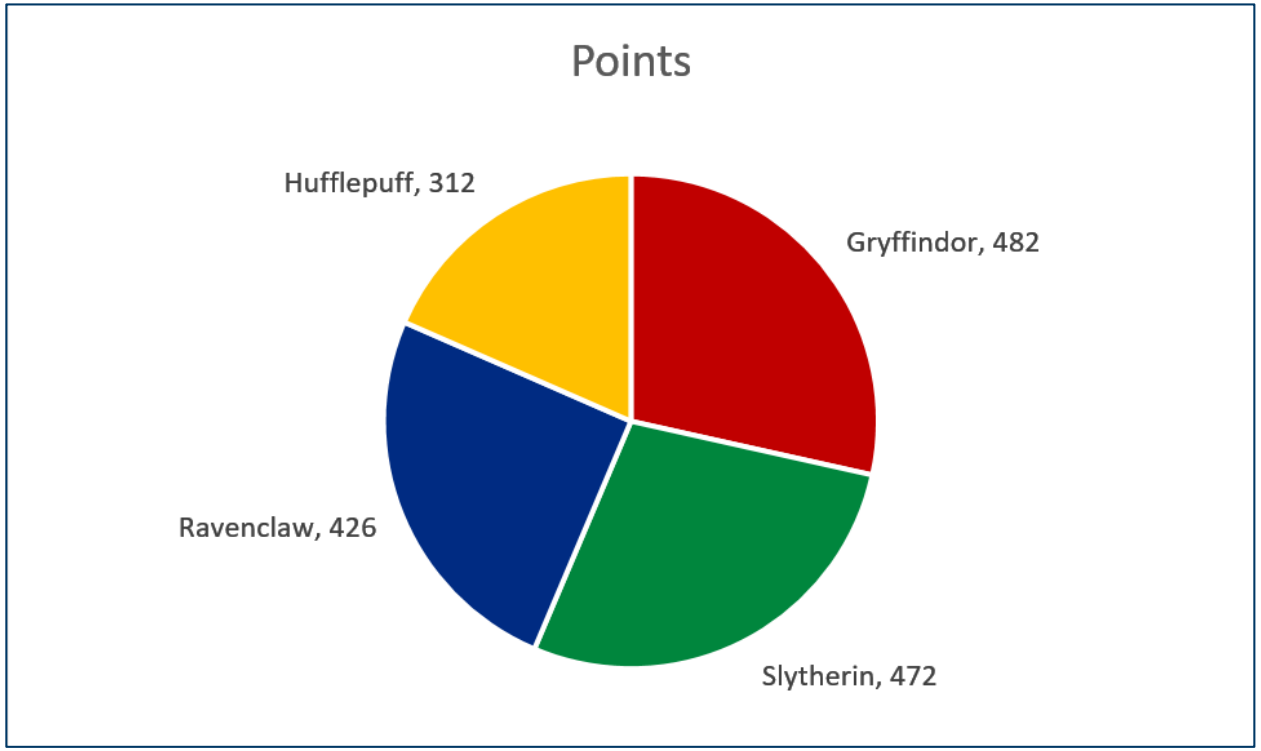
Use Pattern Fills



Use White Space

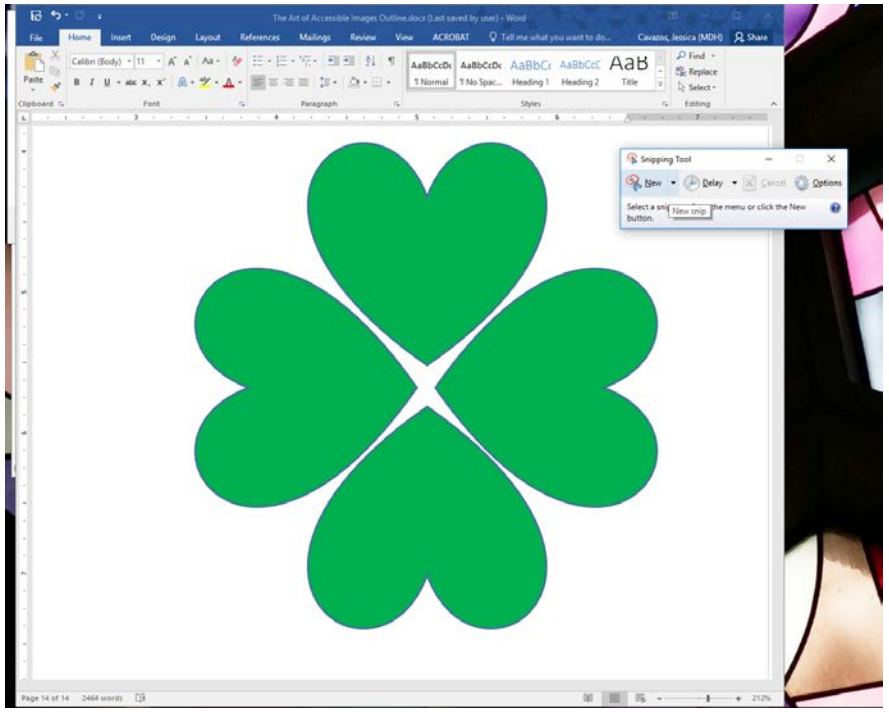


Include Tables



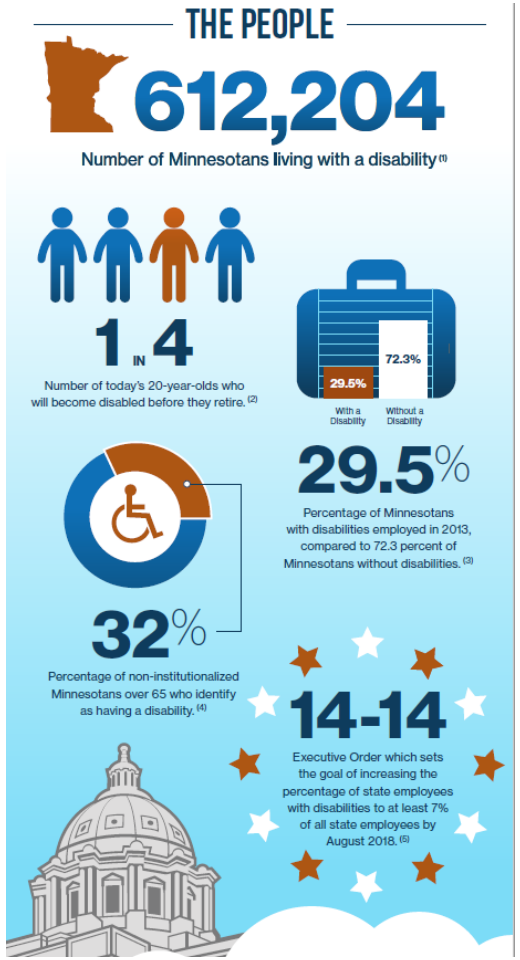
House	Points
Gryffindor	482
Slytherin	472
Ravenclaw	426
Hufflepuff	312

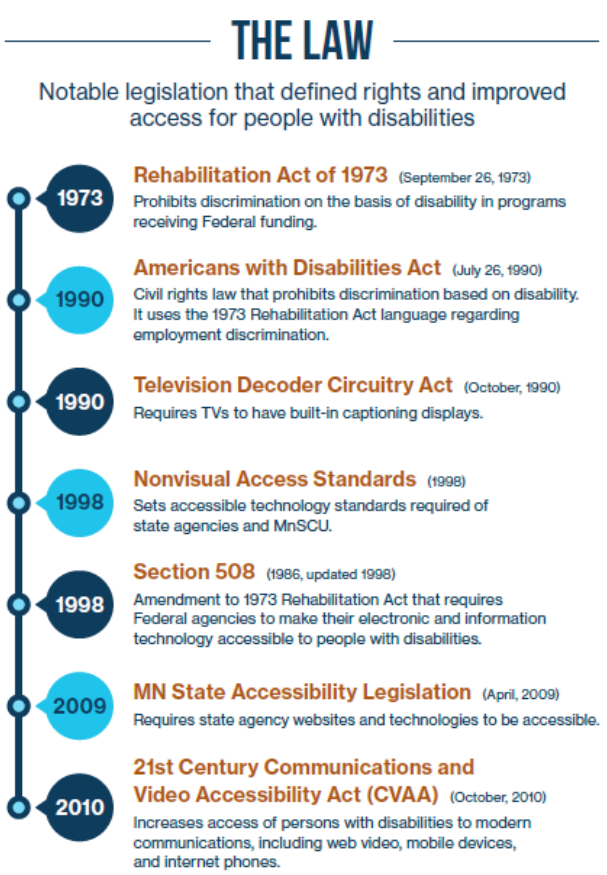
Complex Images





Infographics





[25th Anniversary of the ADA Office of Accessibility Infographic (https://mn.gov/mnit/assets/Employment%20and%20Disability%20in%20Minnesota%20Infographic%20(final%20tagged%20graphics%20added).pdf_tcm38-61699.pdf)]

DEPARTMENT OF HEALTH

Thank you!

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