

Accessibility and Websites

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Date & Time:

July 27, 2022, 2 – 4pm

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ACCESSIBILITY AND WEBSITES

GETTING STARTED

1. Open a web browser on your computer (Firefox, Chrome, or Safari)
2. Enter the URL: <https://go.rutgers.edu/sasit-training>
3. You will be redirected to the training website at <https://www.sas.rutgers.edu/cms/training>

WHAT IS ACCESSIBILITY AND WHY IS IT IMPORTANT?

Accessibility is the extent to which anything (such as websites, mobile devices, computer software, or anything with a user interface) can be used or understood by anyone, regardless of whether or not they have a disability. When we say that a website is “accessible,” we mean that the information on it can be equally accessed by anyone.

There are many reasons why we should make our websites as accessible as possible:

- It improves the usability of the website for everyone – not just people with disabilities
- Approximately 26% of Americans have some kind of disability
- Almost everyone will experience some kind of disability at some point in their lives (e.g. injury or aging)
- It’s the law (Public universities must comply with Americans with Disabilities Act)
- It’s the right thing to do!

ACCESSIBILITY TESTING

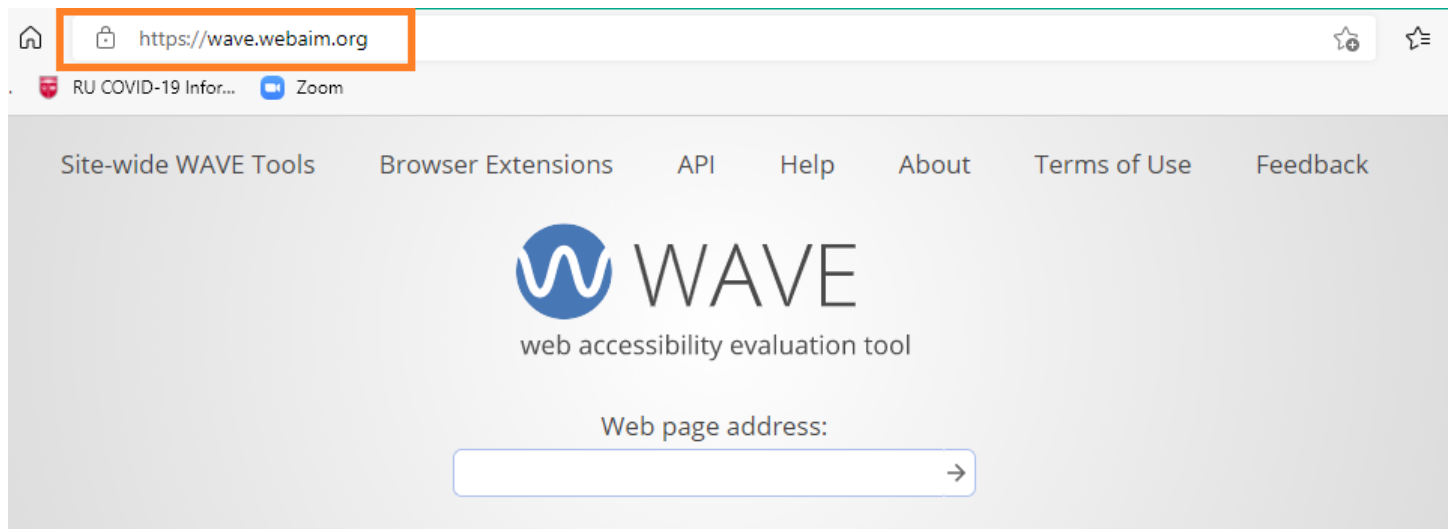
There are several free tools for analyzing the accessibility of websites. For this workshop, we will focus on the WAVE Web Accessibility Evaluation Tool, found at <https://wave.webaim.org/>. This tool scans a web page and reports any accessibility problems it finds. (Note: the WAVE Tool does not scan the entire website, only the specific page whose link you enter).

LIMITATIONS OF AUTOMATED TESTING

Some accessibility issues can’t be automatically detected by software. This is because software applications can’t always interpret the meaning of content. Something may be technically correct as far as the software is concerned, but may still present issues for users with disabilities. We will learn how to identify and fix some of these types of problems.

USING THE WAVE TOOLBAR

1. First, go to the **WAVE Web Accessibility Evaluation Tool** website at: <https://wave.webaim.org/>



WAVE Web Accessibility Evaluation Tool

WAVE is a suite of evaluation tools that helps authors make their web content more accessible to individuals with disabilities. WAVE can identify many accessibility and Web Content Accessibility Guideline (WCAG) errors, but also facilitates human evaluation of web content. Our philosophy is to focus on issues that we know impact end users, facilitate human evaluation, and to educate about web accessibility.

You can use the online WAVE tool by entering a web page address (URL) in the field above. [WAVE Firefox and Chrome extensions](#) are available for testing accessibility directly within your web browser - handy for checking password protected, locally stored, or highly dynamic pages. We also have a [WAVE Runner service](#), [subscription WAVE API](#) and a [stand-alone WAVE API](#) for easily collecting data on many pages. If you need enterprise-level reporting and tracking of accessibility, WAVE powers the [Pope Tech accessibility tool](#).

2. Copy the link for a web page to test, and paste it into the Web page address field on the WAVE website:



3. Click the arrow or press [Enter] to test the page
4. The WAVE website will display a summary of issues on the left, and will indicate where on your web page the issues are occurring:

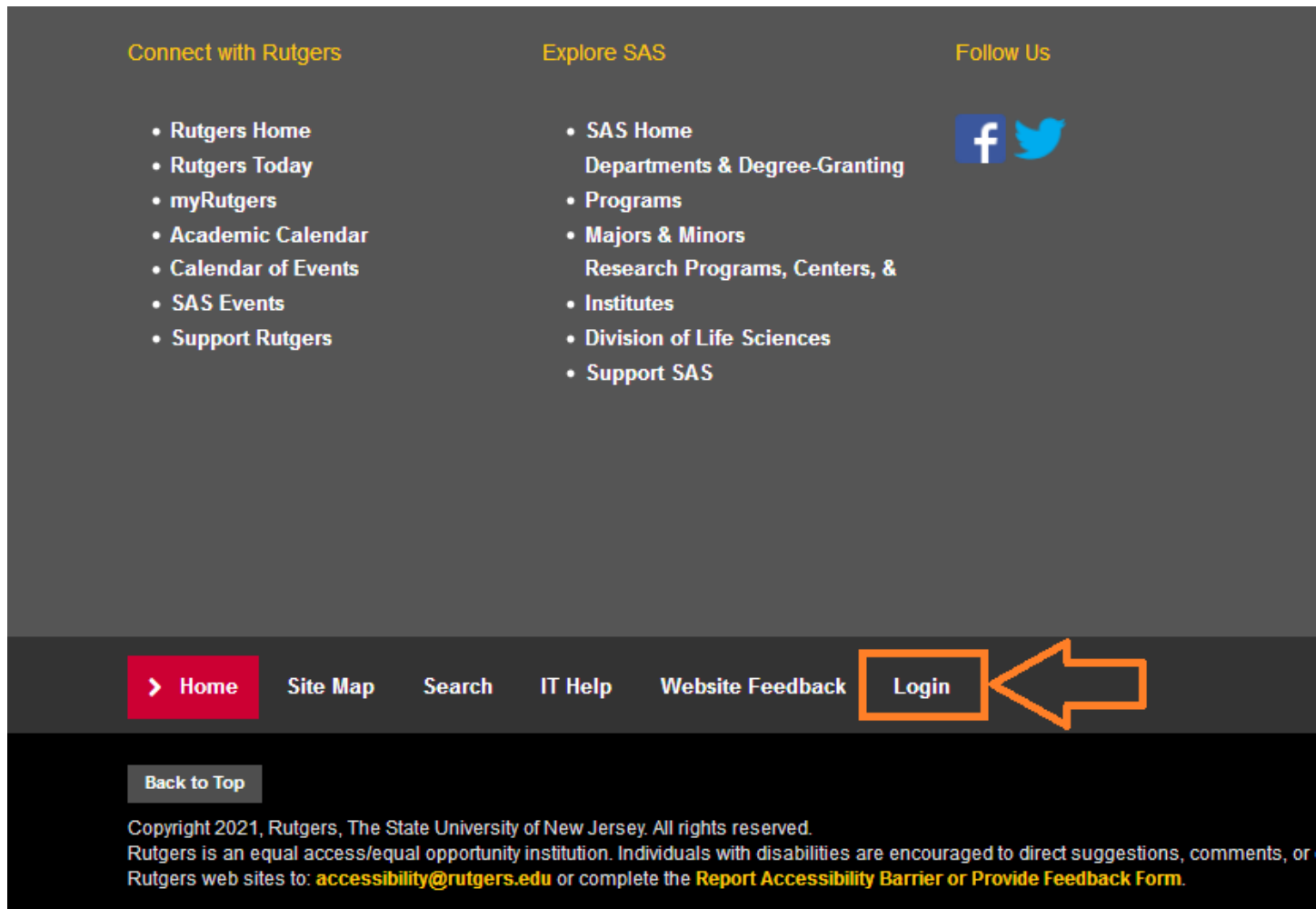
The screenshot displays the WAVE web accessibility evaluation tool interface. On the left, a sidebar shows the WAVE logo, the address `https://www.sas.rutgers.edu/cms/training/ε`, and a 'Summary' panel. The summary panel lists: 1 Error (red X icon), 1 Contrast Error (two red dots icon), 7 Alerts (yellow triangle icon), 12 Features (green checkmark icon), 34 Structural Elements (blue triangle icon), and 4 ARIA (purple square icon). A 'View details >' button is at the bottom of the summary panel. The main area on the right shows a preview of the web page. At the top, it says 'The following apply to the entire page:' with a globe icon and '*en-gb*'. The page content includes an 'h1 Accessibility' heading, an 'h2 Eddie Article 1' heading, an 'h4 Contact information' heading with a 'Click here' link, an 'h2 More important stuff' heading, an 'h4 Rutgers Locations:' heading with a list: '1. Camden', '2. New Brunswick', '3. Newark', and 'Some text'. Below this is a paragraph of placeholder text: 'This is a really important note that I would like to stand out from the rest of the paragraph. Nam a arcu tempus felis luctus ma tellus. Donec quis massa vitae velit bibendum facilisis a nec nisl. Phasellus pharetra est felis, non suscipit tellus finibus vel. S metus iaculis semper. Ut congue consectetur massa quis dapibus. Donec bibendum sapien ut felis efficitur, ac dignissim velit nec turpis malesuada rhoncus vitae id sem. Nam pharetra vehicula luctus. Proin vel porta augue.' The page also features a large image of a starry night sky and a sidebar menu icon on the right.

Our goal will be to address as many of the errors and alerts as possible. We will walk through the process of fixing one page together, then we will each practice fixing another page on our own.

DEMONSTRATION: FIXING ACCESSIBILITY ISSUES ON A WEB PAGE

LOGGING ON TO THE FRONT-END

Click the Login link at the bottom of the website; then login with your NetID:



FIND AND EDIT ARTICLE 1

1. Click on the **ACCESSIBILITY** link on the main menu (see #1 below)
2. Find the article starting with your name and ending in "Article 1" (see #2 below)
3. Click the **Edit** link to the right of your "Article 1" (see #3 below)

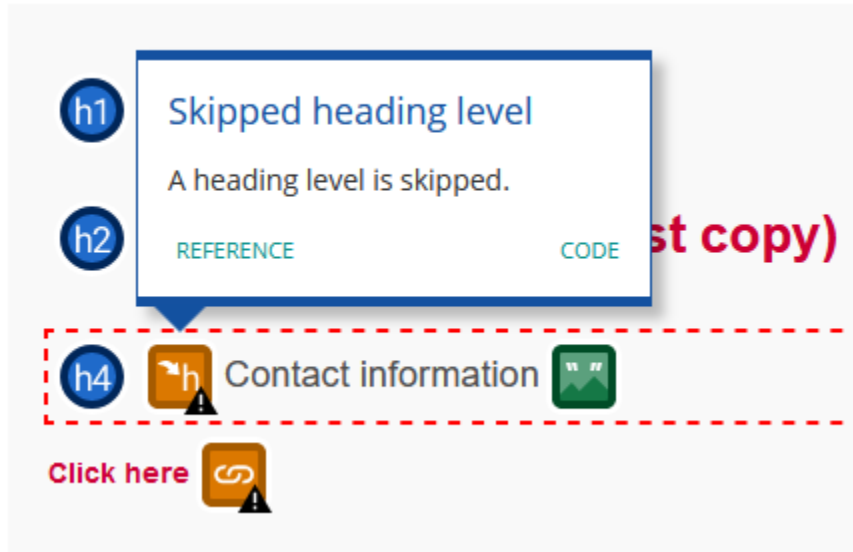
The screenshot shows the Rutgers School of Arts and Sciences website. The header is red with the Rutgers logo and name. Below the header is a dark navigation bar with links: HOME, INTRO TO JOOMLA!, **1 ACCESSIBILITY** (highlighted with a green box), ADVANCED CONTENT EDITING, EVENTS ▼, and MODULES. Below the navigation bar is a section titled "Accessibility" in red. To the right of this title is a dropdown menu showing "100". Below the title is a table with two columns: "Title" and "Edit Article". The table contains three rows of articles. The first row is highlighted with a green box and contains "Eddie K Article 1" with a green "2" next to it, and "3 Edit" with a green "3" next to it. The second row contains "Eddie K Article 1 (test copy)" and "Edit". The third row contains "Eddie K Article 2" and "Edit".

Title	Edit Article
Eddie K Article 1 2	3 Edit
Eddie K Article 1 (test copy)	Edit
Eddie K Article 2	Edit

Now we can work through the errors and alerts that the WAVE Testing Tool found on our web pages.

SKIPPED HEADING LEVELS

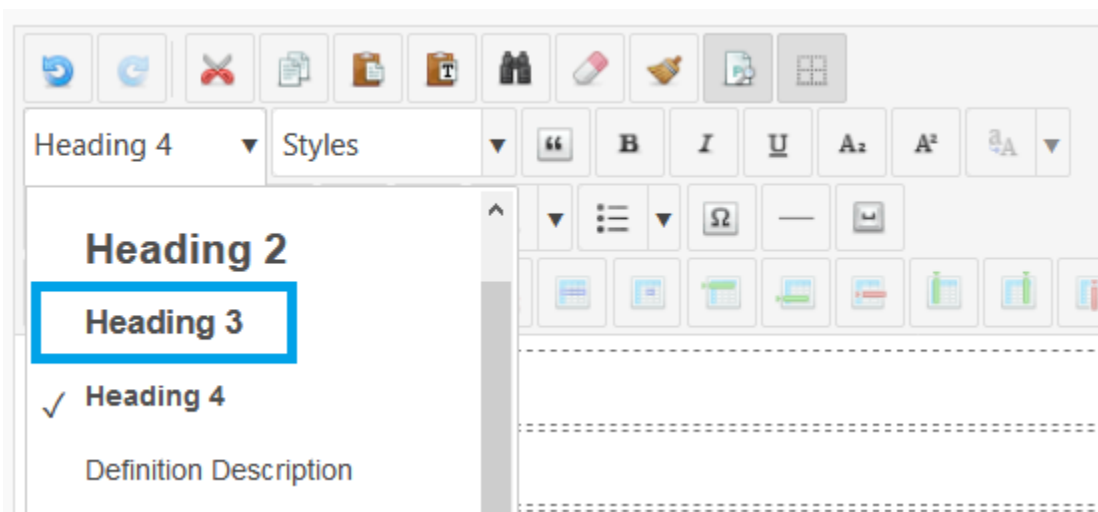
The WAVE tool displayed an orange “h” icon to the left of “Contact Information.” Clicking on the icon shows “Skipped heading level:”



Skipping heading levels (for example, jumping from Heading 2 to Heading 4) causes problems for screen reader users. Vision-impaired users can navigate web pages by having their screen reader software read the headings to them, and then jump to the desired heading. Missing heading levels disrupt their ability to navigate.

To fix this problem, change the **Heading 4** to a **Heading 3**:

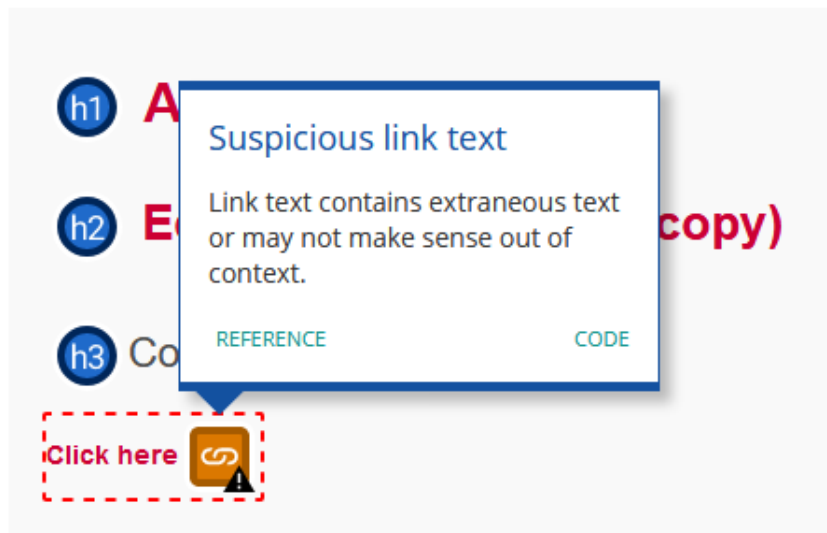
1. Click somewhere on the line containing the text “Contact Information.”
2. Select “Heading 3” from the “Paragraph” dropdown menu:



Note that **Heading 1** is reserved for page titles and is therefore not available. Use **Heading 2** for top-level headings in your article, **Heading 3** for sub-headings, and **Heading 4** for sub-sub-headings.

SUSPICIOUS LINK TEXT

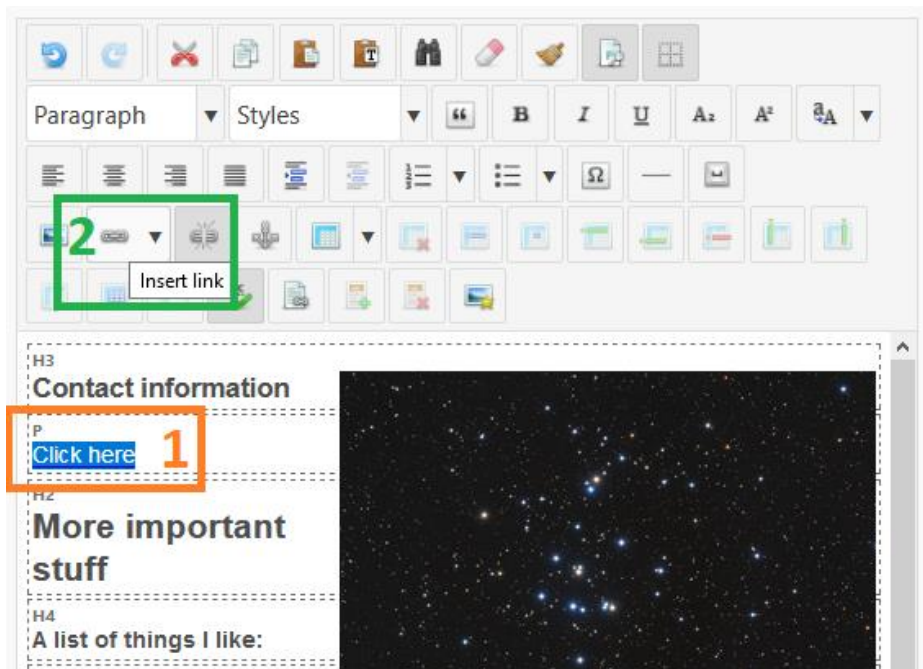
WAVE displays an orange link icon to the right of the “Click Here” linked text:



Linked text should always describe the destination of the link. Screen reader software can read a list of links on the page to users. If they hear “Click here” or “Read more,” they won’t get any information about the targets of the links.

To fix this problem:

1. Highlight the “Click here” link (*see #1 below*)
2. Click the “Insert Link” button on the toolbar (*see #2 below*)



3. Change “Click Here” to “Contact SAS” (see #3 below)
4. Click **Update** (see #4 below)

Link ✕

Link

Advanced

Popups

URL



Text

3

 Search 

▶  Contacts

▶  Content

▶  Menu

▶  Tags

▶  Weblinks

Article Anchors

▼

Target

▼

Title

 Cancel

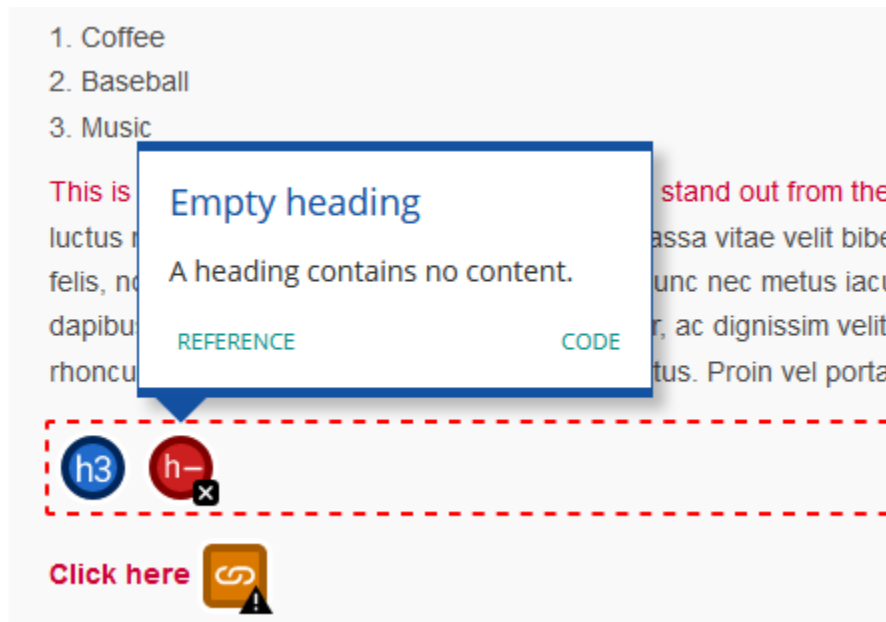
 Help

4

 Update

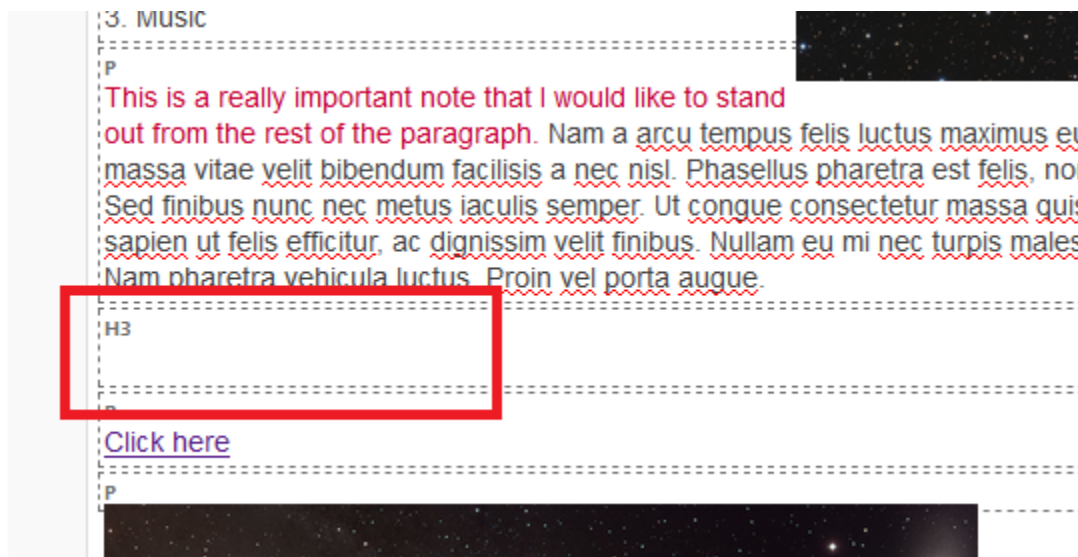
EMPTY HEADING

On the test page, WAVE displayed a blue “h3” icon with a red “h-” icon to the right of it. This indicates an empty heading:



Empty headings are bad for accessibility for the same reason as skipped heading levels: they prevent screen reader users from successfully navigating the web page.

To fix this problem, click on the blank line marked “H3” and add some text (if there should be a heading there), or press [Backspace] until the blank line and “H3” marker disappear:

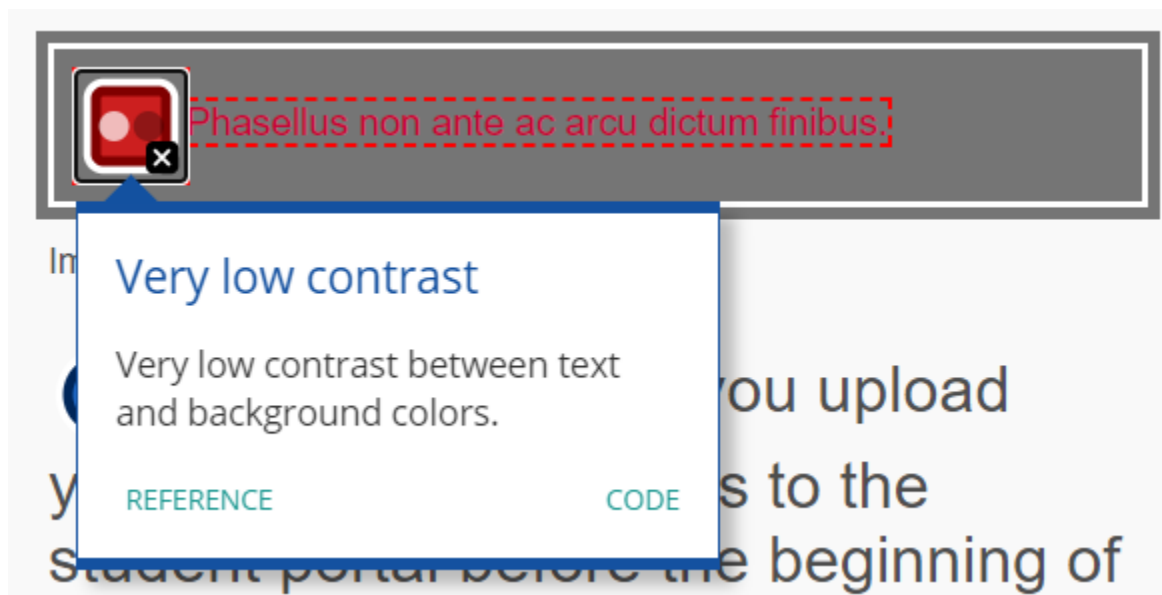


CONTRAST ERRORS

Contrast errors occur when there is not enough difference between the font color of text and the background color behind the text. These issues create problems for users with low vision or colorblindness. In fact, if the contrast is low enough, even users with normal vision may have difficulty reading the text.

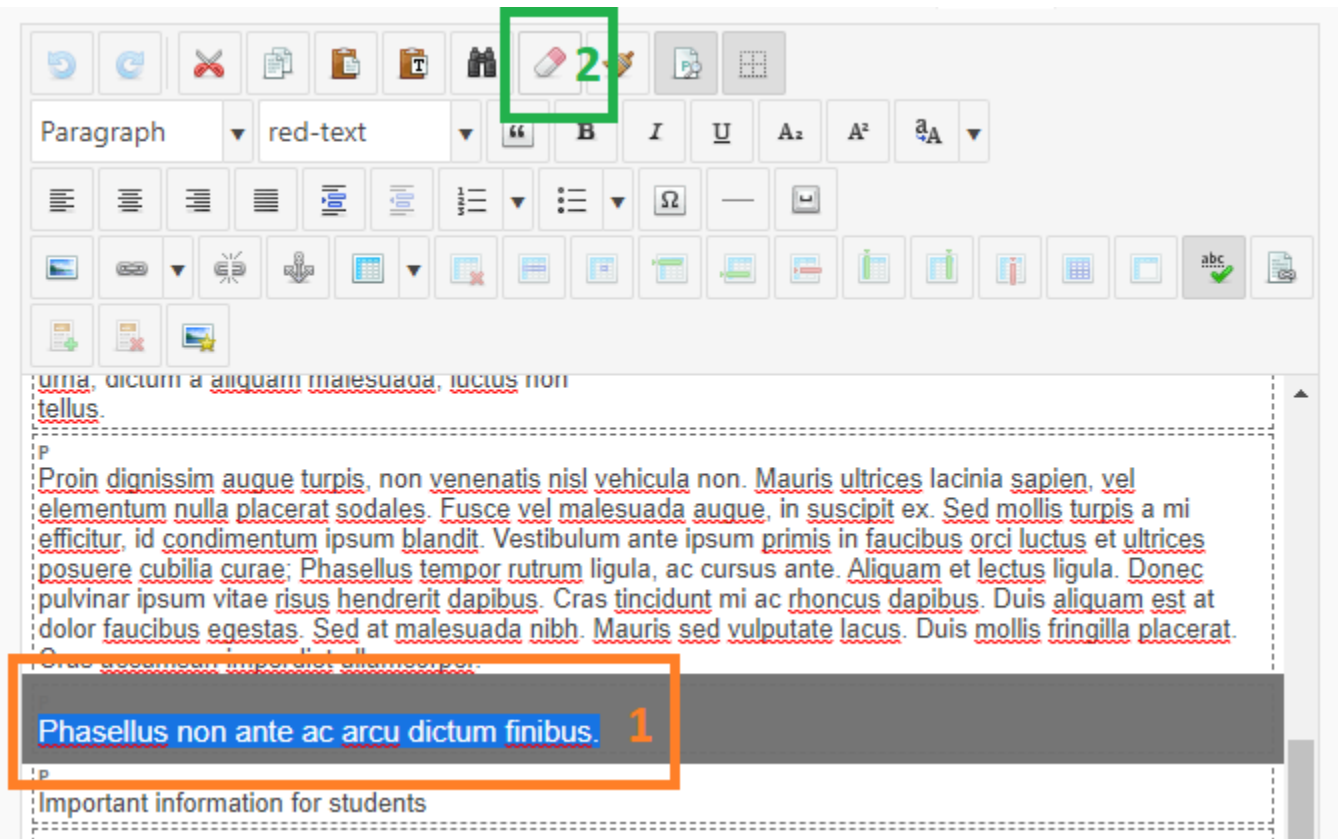
The standard template used for SAS websites is designed to ensure that there is enough contrast between the text and the background. However, contrast errors can still occur if two or more incompatible styles are applied to the same text.

The WAVE tool marks contrast errors with a red square containing two colored dots. In the below example, there is very little contrast between the red text and grey background:



To fix this problem, we need to highlight the text and eliminate the styles that create low contrast when combined:

1. Highlight the text that WAVE has flagged with the “Very low contrast” error (see #1 below)
2. Click the “Remove formatting” button on the editor toolbar to remove the styles (see #2 below)



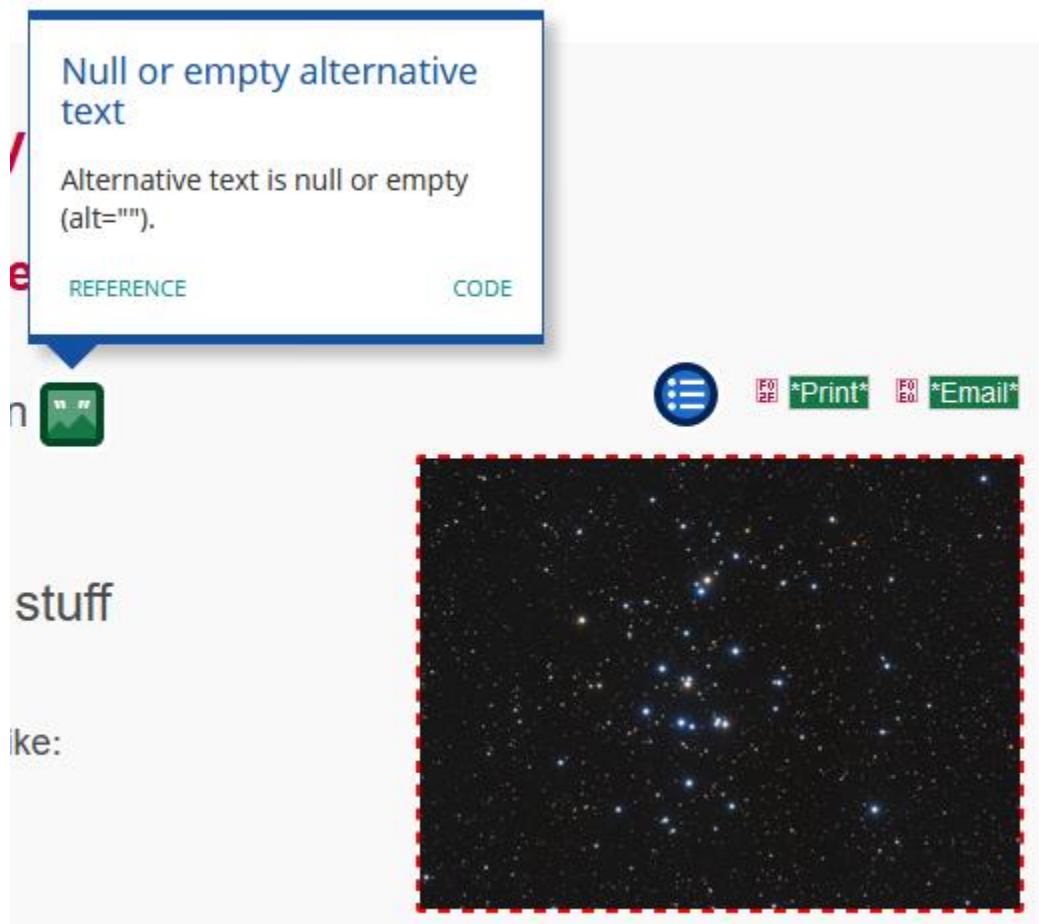
THINGS NOT RECOGNIZED AS ERRORS THAT WE STILL NEED TO CHECK

ALTERNATIVE TEXT

Tools like WAVE can only determine if the alternative text (“alt txt”) attribute for an image is empty or not. They can’t interpret the alt txt to determine if it’s accurate. It’s up to us to check the alt txt value and make sure it’s correct.

Null or Empty Alternative Text

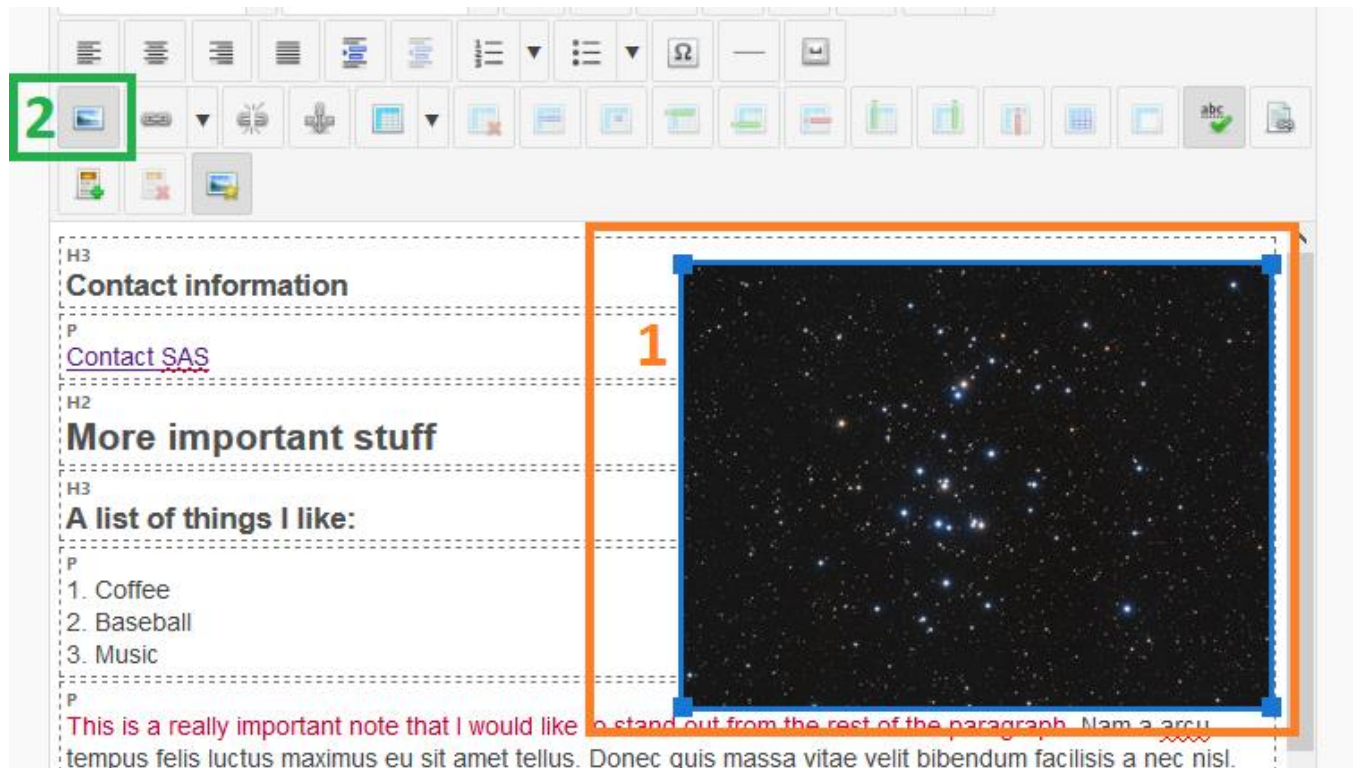
WAVE may display a green icon with two quotation marks (“”). This indicates “Null or empty alternative text:”



WAVE doesn’t flag it as an error because empty alternative text is allowed for decorative images that don’t contain important content. If the image contains information that a visitor would be interested in, then you should include a short description of the image in the alt txt. Screen reader users will hear the alt txt read to them when they encounter the image.

Setting alternate text for your images

1. Select the image (see #1 below)
2. Click the “Insert Image” button (see #2 below)

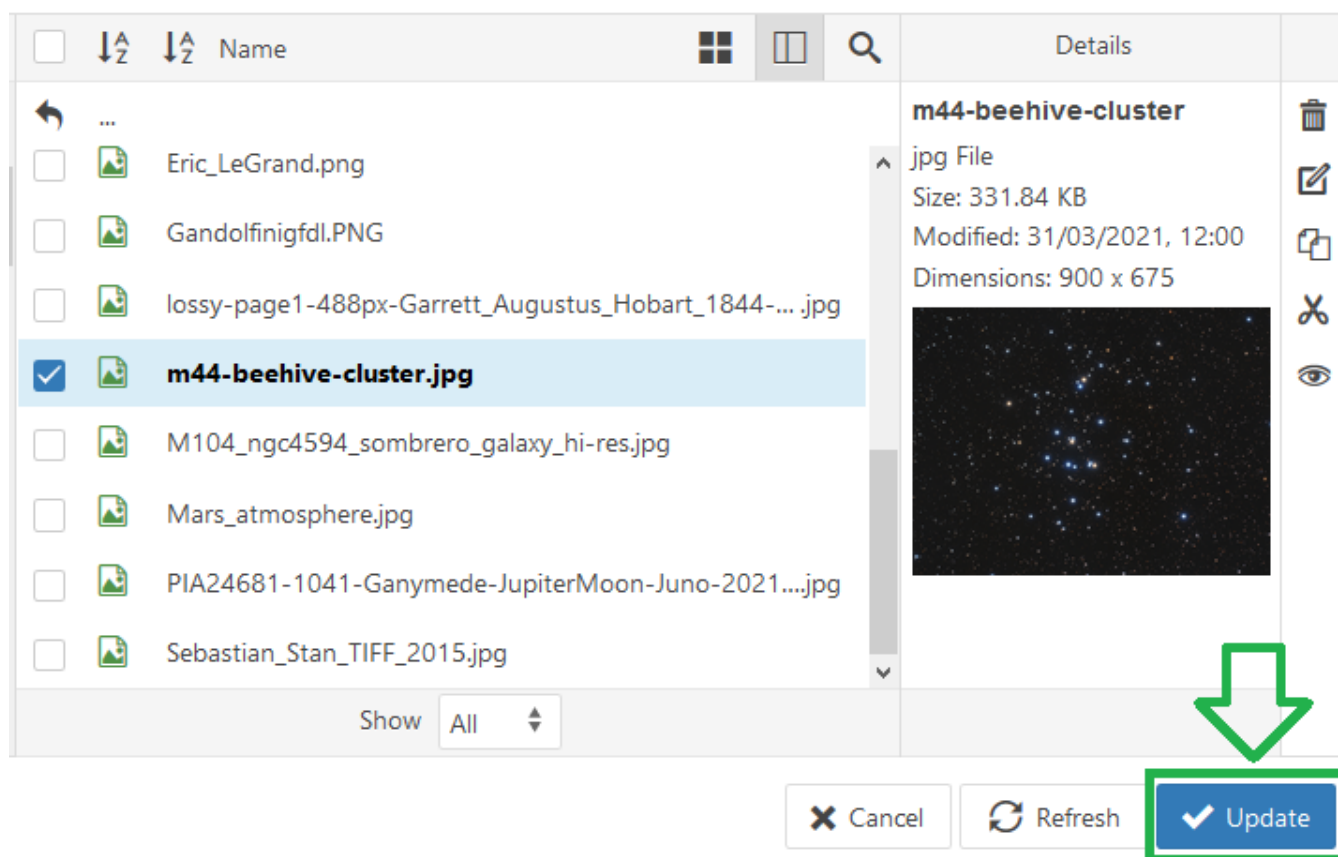


3. Enter a short description of the image in the “Alternate Text” field:

Image Manager

Image	Rollover	Advanced
URL	images/Admin-2021/m44-beehive-cluster.jpg	
Alternate Text	Beehive Cluster	
Dimensions	300 × 225 ☒ Proportional	
Alignment	Right Clear --Not Set--	
Margin	Top Right Bottom Left ☒ Equalize	
Border	☐ Width 0 Style solid Colour # 999999	

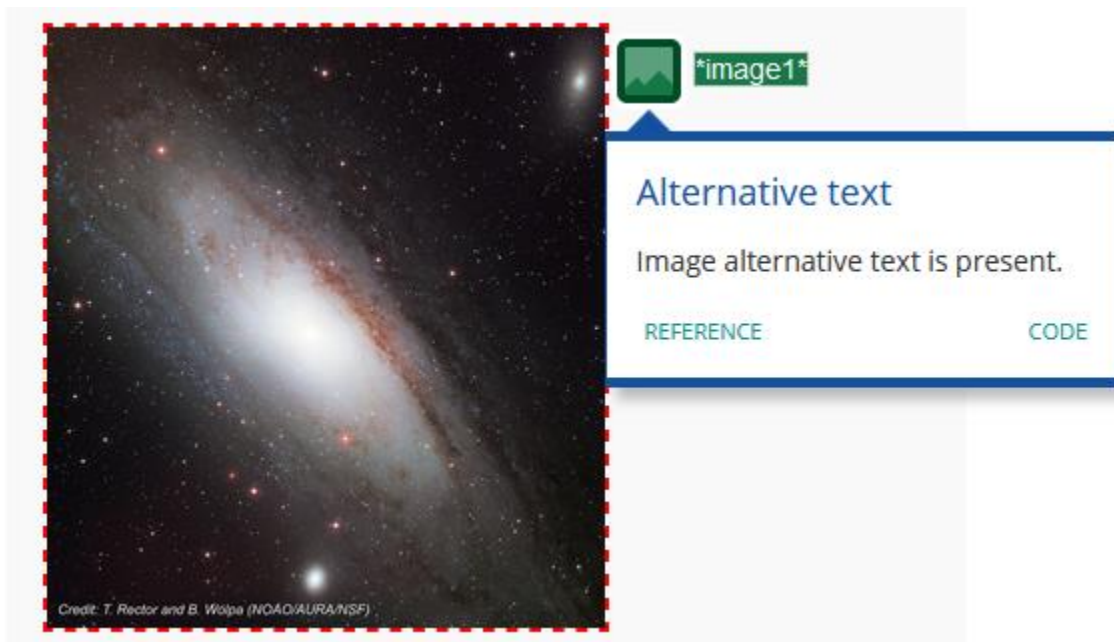
4. Click **Update** to the lower right:



5. Click **Save** to the lower left to save your changes.

Incorrect Alternative Text

If alternate text does exist for an image, WAVE will display a green image icon with the alternate text:



However, just because alternative text is present does not mean that it is correct. In the above example, “image1” does not properly describe the image.

Also, note that the above image has some embedded text. If this text is important, it should also be included in the alternate text, or shown somewhere else on the page (for example, in a caption for the image).

We can resolve this issue the same way we did for missing alt txt (see “Setting alternate text for your images” above for screenshots).

1. Select the image
2. Click the “Insert Image” button
3. Enter a short description of the image in the “Alternate Text” field
4. Click **Update** to the lower right
5. Click **Save** to the lower left to save your changes

HEADINGS

Only use Heading Styles to designate actual headings for information in your article. As discussed earlier, vision-impaired users use headings to navigate the web page.

Headings Not Marked as Headings

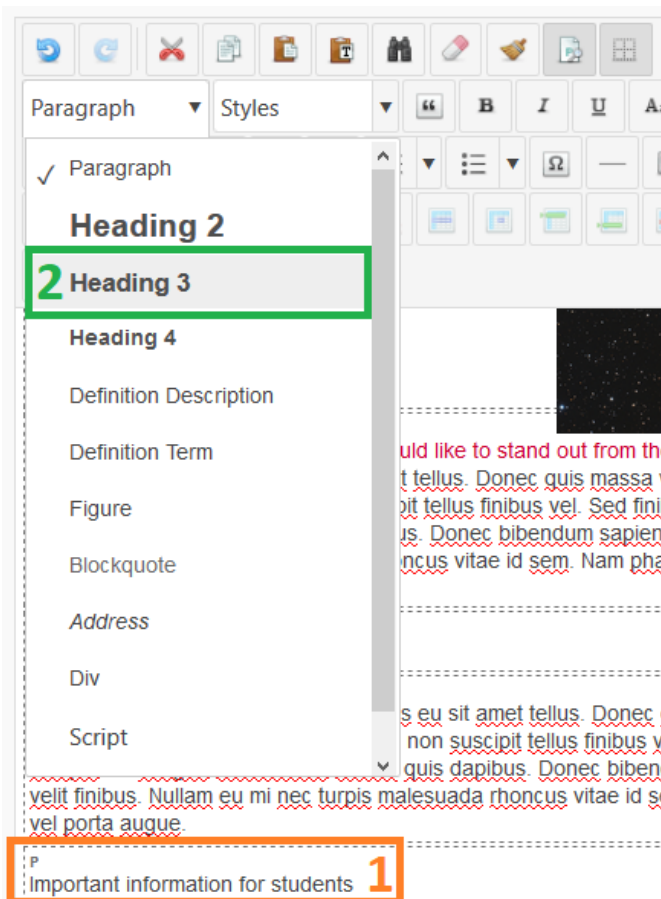
If text that *should* be a heading does not have a heading style, a screen reader user can't easily navigate to it.

In this example, the text “Important information for students” describes the text below it, but does not have a heading style. A vision impaired user won't hear this text when their screen reader announces the list of page headings.

Important information for students

Please make sure you upload your vaccination records to the student portal before the beginning of the semester!

To fix the problem, click on the text and select the appropriate heading level from the “Paragraph” dropdown menu (make sure you don't skip a heading level):



Non-Headings Marked as Headings

Don't use a heading style to make important text stand out if that text would not be considered a heading. In the below example, the text "Please make sure you upload your vaccination records to the student portal before the beginning of the semester!" is not a heading; it doesn't describe the content that comes after it.

H3

Please make sure you upload your vaccination records to the student portal before the beginning of the semester!

H3

Andromeda Galaxy (M31)

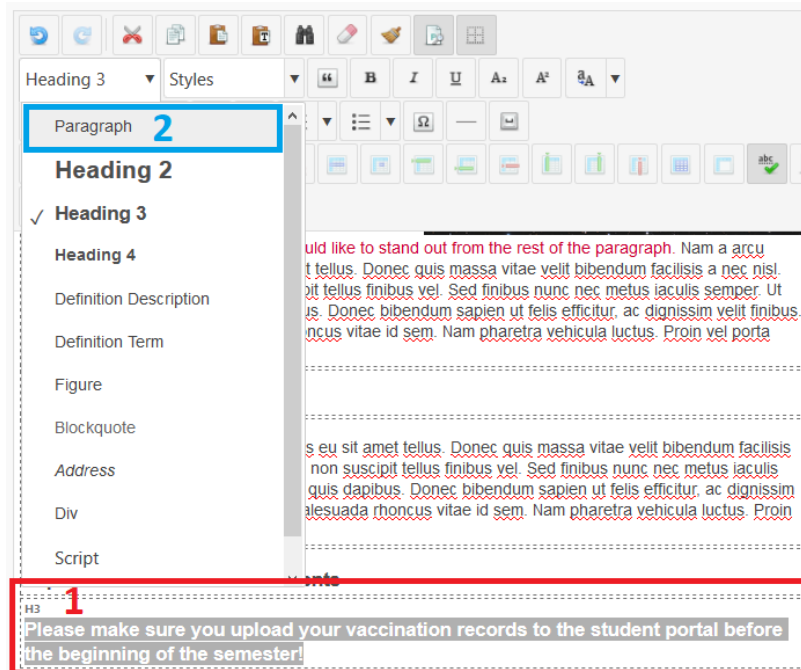
P



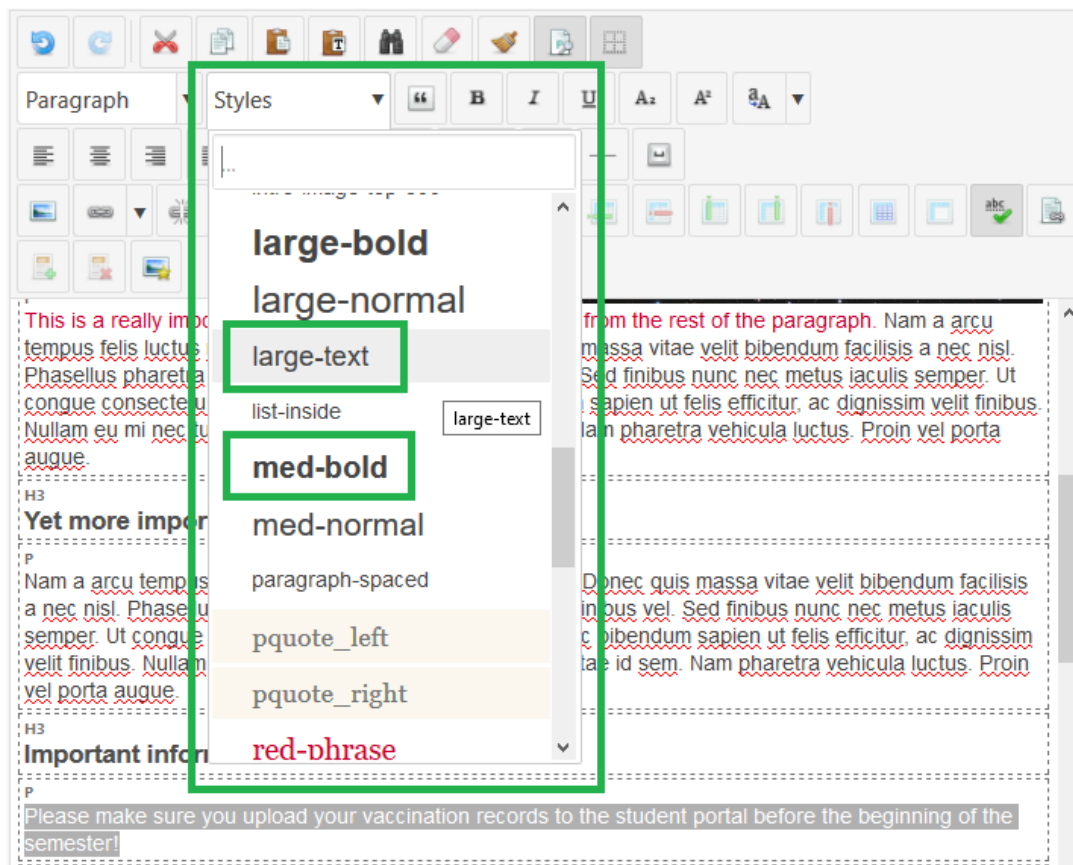
Credit: T. Rector and B. Wolpa (NOAO/AURA/NSF)

To fix the problem:

1. Highlight the text that should not be marked as a heading (*see #1 below*)
2. Select “Paragraph” from the first dropdown menu on the toolbar to change the text from a heading back to a paragraph (*see #2 below*)



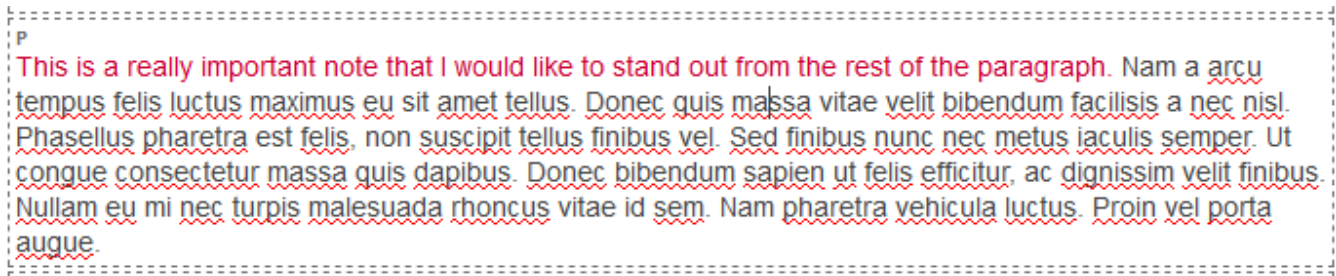
3. If you want the important text to stand out, select a large or bold style (for example, “large-text” or “medium-bold”) from the “Styles” dropdown menu instead of a heading:



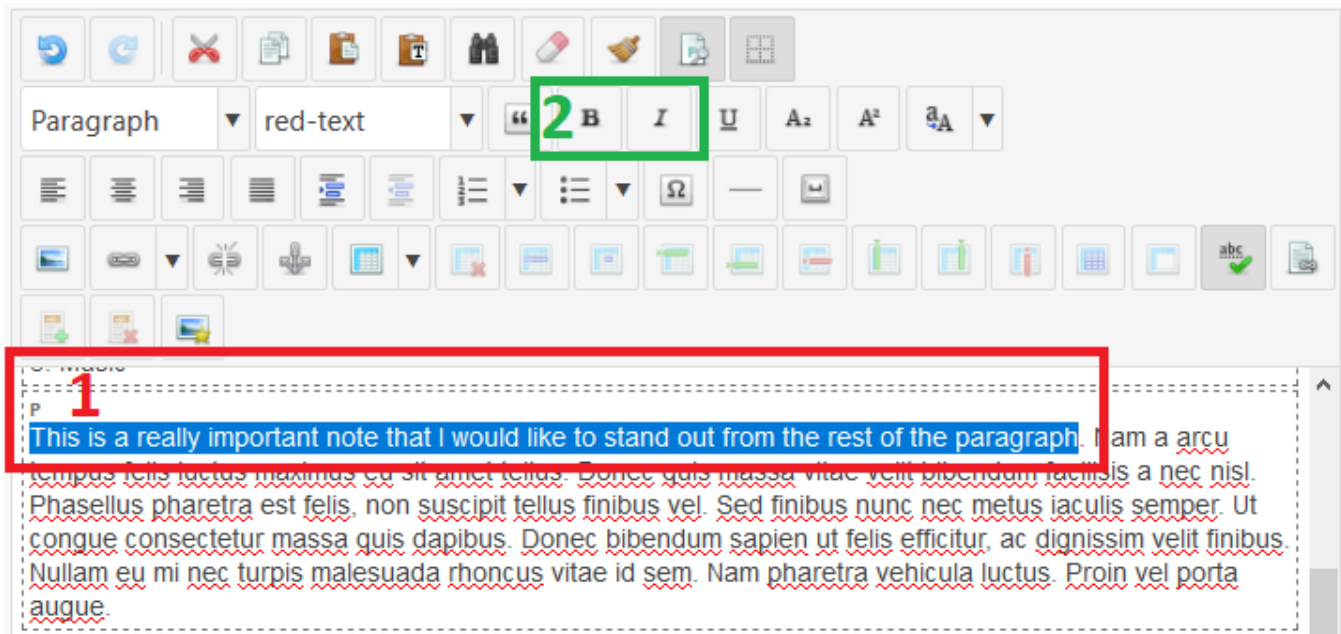
IMPORTANT TEXT ONLY INDICATED BY COLOR

Color should not be the only means of highlighting important text; also use bold or italics. Colorblind users may not be able to distinguish the text in color from the surrounding text.

In the next example, the first sentence in the paragraph is important. It has been given the style “red-text,” but a colorblind user might not see this color. Also, WAVE doesn’t recognize this as an error because it can’t actually read the text to determine if it’s important.



To fix the problem, select the important text (see #1 below), then click either the “Bold” or “Italics” button (see #2 below):



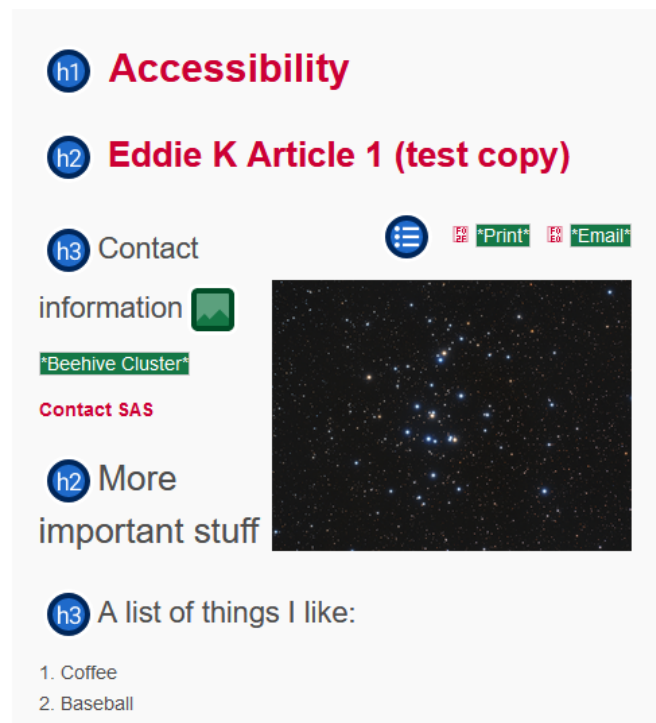
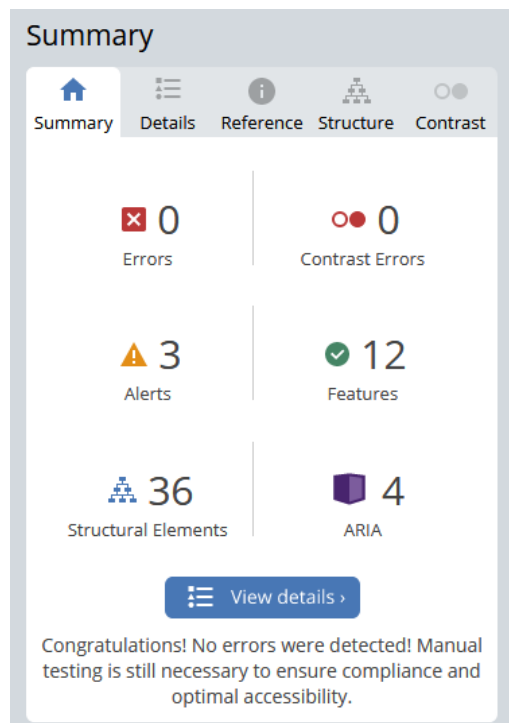
Click **Save** to the lower left to save your changes.

SCAN THE PAGE AGAIN AFTER ALL ISSUES HAVE BEEN ADDRESSED

After you have resolved as many accessibility issues as possible, go back to the WAVE Web Accessibility Evaluation Tool website at: <https://wave.webaim.org/> and re-submit your web page for testing:



You should see that WAVE is reporting less errors and warnings than before:



PRACTICE: RESOLVING ACCESSIBILITY ISSUES

Now, we will practice what we learned by trying to fix accessibility errors on another article.

FIND ARTICLE 2

1. Click on the **ACCESSIBILITY** link on the main menu (*see #1 below*)
2. Find the article starting with your name and editing in “Article 2” and click on it (*see #2 below*)

RUTGERS
School of Arts and Sciences

HOME INTRO TO JOOMLA! **1 ACCESSIBILITY** ADVANCED CONTENT EDITING EVENTS MODULES

Accessibility

100

Title	Edit Article
Eddie K Article 1	Edit
Eddie K Article 1 (test copy)	Edit
2 Eddie K Article 2	Edit

TEST ARTICLE 2 USING WAVE

1. Copy the URL of your article by highlighting it and pressing **[Ctrl]+C**:

Eddie K Article 2 - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop **https://www.sas.rutgers.edu/cms/training/accessibility/4106-eddie-k-article-2**

Home Bookmarks Most Visited SeaMonkey mozillaZine Simple List Manager <https://sasit.rutgers.ed...> <https://webde...>

Maintenance: Clear Cache (Site) - CMS T... Eddie K Article 2

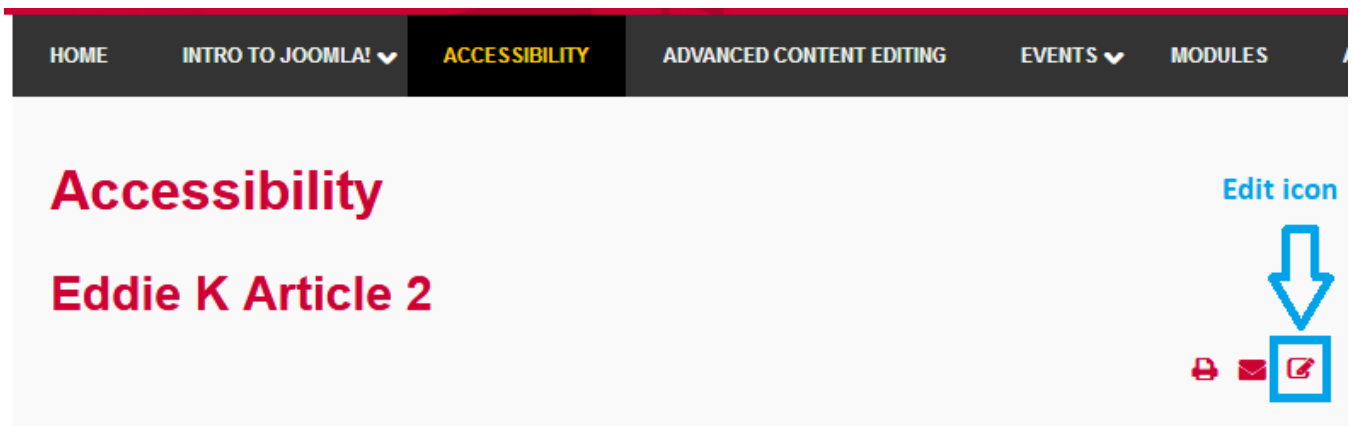
School of Arts and Sciences Support SAS Search Rutgers Rutgers Home Search ...

2. Go to the WAVE Web Accessibility Evaluation Tool website at: <https://wave.webaim.org/> and test your article.
3. Make note of the errors and warnings that WAVE reports for your article. Don't worry about errors or warnings that appear outside the article, such as these warnings about links in the banner:



EDIT ARTICLE 2

1. Come back to the Training website and click the **Edit** icon for your article (*see #2 below*)



2. Fix the problems that caused WAVE to report any errors and warnings for your article.

RE-TEST YOUR PAGE

1. Go back to the WAVE Web Accessibility Evaluation Tool website at: <https://wave.webaim.org/> and test your article again.
2. If any errors or alerts still occur within your article, edit your article to remove the causes of the errors or alerts.
3. When done editing your article, click the **Logout** link on the footer menu

ADDITIONAL INFORMATION

COURSE ACCESSIBILITY GUIDELINES

If your unit's website contains any course-related content, please review Rutgers' Course Accessibility Guidelines:

<https://it.rutgers.edu/it-accessibility-initiative/knowledgebase/course-accessibility-guidelines/>

VIDEOS

ACCESSIBILITY FOR VIDEOS

To comply with accessibility standards, make sure all videos are closed-captioned before you add them to your website.

RUTGERS YOUTUBE CHANNEL

We recommend that you have your videos uploaded to the Rutgers YouTube channel, managed by the Rutgers iTV studio. For more information, please visit:

<https://tvstudio.rutgers.edu/webform/youtube-upload-request-form>

KALTURA

You can also upload videos to Kaltura, which is part of Canvas. Any videos uploaded to Kaltura will give you the option to add closed captioning automatically. Rutgers faculty or staff can request a Kaltura account. To get started with Kaltura, go to:

<https://canvas.rutgers.edu/external-apps/kaltura/>

ADDITIONAL TRAINING / DOCUMENTATION

Visit our website: <https://sasit.rutgers.edu/how-to-guides/web-development-documentation>

FUTURE WORKSHOPS

Please visit: <https://sas-it.rutgers.edu/itservices/web-development-and-support/workshops-and-training>