W3C Web Accessibility initiative

How to Meet WCAG 2.0

A customizable quick reference to Web Content Accessibility Guidelines 2.0 requirements (success criteria) and techniques

Introduction

[Hide Introduction]

This web page can be used as a checklist for WCAG 2.0. It provides:

- **All of the requirements (called "success criteria")** from Web Content Accessibility Guidelines (WCAG) 2.0
- Techniques to meet the requirements, which are linked to pages with descriptions, code examples, browser and assistive technology support notes, and tests.
- Failures to avoid, which are linked to pages with descriptions, examples, and tests.
- **"Understanding" links** to pages that explain the intent of the guideline or success criterion, how it helps people with different disabilities, key terms, and resources.

You can customize what is included in this page by selecting from the Customize this Quick Reference section which Technologies, Levels of success criteria, and Sections of techniques you want to include.

For an introduction to WCAG, Techniques, and Understanding documents, see the WCAG Overview.

Customize this Quick Reference

Technologies:

- ☑ Show HTML techniques and failures
- ☑ Show CSS techniques and failures
- ☑ Show SMIL techniques and failures
- ☑ Show Client-side Scripting techniques and failures
- ☑ Show Server-side Scripting techniques and failures
- ☑ Show Flash techniques and failures
- ☑ Show PDF techniques and failures
- ☑ Show Silverlight techniques and failures
- ☑ Show WAI-ARIA techniques and failures

Levels:

- ☑ Show Level A Success Criteria
- ☑ Show Level AA Success Criteria
- ☑ Show Level AAA Success Criteria

Sections:

- ☑ Show Sufficient Techniques and Failures
- ☑ Show Advisory Techniques

Save Settings Option:

- ☐ Save these settings (requires cookies)

Customize with Settings Above

Note that even content that conforms at the highest level (AAA) will not be accessible to individuals with all types, degrees, or combinations of disability, particularly in the cognitive language and learning areas. Authors are encouraged to seek relevant advice about current best practice to ensure that Web content is accessible, as far as possible, to this community.

About the Techniques

For important information about the techniques, please see the Understanding Techniques for WCAG Success Criteria section of Understanding WCAG 2.0.

Note: The basis for determining conformance to WCAG 2.0 is the success criteria, not the techniques. (The success criteria have 3-level numbering (0.0.0) and in this page they are followed by a link "Understanding Success Criterion".) All techniques are informative; that means they are not required. There may be other techniques besides the ones listed here.

New Techniques and Comments

The *Techniques for WCAG 2.0* document is updated periodically, and anyone can submit techniques that will be considered for inclusion in an update. Please submit corrections, updates, or new information related to techniques, failures, or other WCAG documentation to the WCAG Working Group, per the instructions for commenting.

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WCAG 2.0 Quick Reference List

This Quick Reference is currently customized to include:

- **Techniques and Failures:** General, HTML, CSS, SMIL, Client-side Scripting, Server-side Scripting, Flash, PDF, Silverlight, WAI-ARIA
- **Success Criteria Levels:** A, AA, AAA
- **Sections:** Introduction, Sufficient Techniques and Failures, Advisory Techniques, Conformance Requirements

Text Alternatives

Guideline 1.1 Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language. Understanding Guideline 1.1

Advisory Techniques for Guideline 1.1

- Providing sign language videos for audio-only files (future link)

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Non-text Content

1.1.1 All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for the situations listed below. *(Level A)*
Understanding Success Criterion 1.1.1

- **Controls, Input:** If non-text content is a control or accepts user input, then it has a name that describes its purpose. (Refer to *Guideline 4.1* for additional requirements for controls and content that accepts user input.)
- **Time-Based Media:** If non-text content is time-based media, then text alternatives at least provide descriptive identification of the non-text content. (Refer to *Guideline 1.2* for additional requirements for media.)
- **Test:** If non-text content is a test or exercise that would be invalid if presented in text, then text alternatives at least provide descriptive identification of the non-text content.
- **Sensory:** If non-text content is primarily intended to create a specific sensory experience, then text alternatives at least provide descriptive identification of the non-text content.
- **CAPTCHA:** If the purpose of non-text content is to confirm that content is being accessed by a person rather than a computer, then text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.
- **Decoration, Formatting, Invisible:** If non-text content is pure decoration, is used only for visual formatting, or is not presented to users, then it is implemented in a way that it can be ignored by assistive technology.

Sufficient Techniques for 1.1.1 - Non-text Content

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: If a short description can serve the same purpose and present the same information as the non-text content:

1. G94: Providing short text alternative for non-text content that serves the same purpose and presents the same information as the non-text content using one of the following **Short text alternative techniques for Situation A** :

Short text alternative techniques for Situation A:

- ARIA6: Using aria-label to provide labels for objects (ARIA)

- ARIA10: Using aria-labelledby to provide a text alternative for non-text content (ARIA)
- G196: Using a text alternative on one item within a group of images that describes all items in the group
- FLASH1: Setting the name property for a non-text object (Flash)
- FLASH5: Combining adjacent image and text buttons for the same resource (Flash)
- FLASH28: Providing text alternatives for ASCII art, emoticons, and leetspeak in Flash (Flash)
- H2: Combining adjacent image and text links for the same resource (HTML)
- H35: Providing text alternatives on applet elements (HTML)
- H37: Using alt attributes on img elements (HTML)
- H53: Using the body of the object element (HTML)
- H86: Providing text alternatives for ASCII art, emoticons, and leetspeak (HTML)
- PDF1: Applying text alternatives to images with the Alt entry in PDF documents (PDF)
- SL5: Defining a Focusable Image Class for Silverlight (Silverlight)

Situation B: If a short description can not serve the same purpose and present the same information as the non-text content (e.g., a chart or diagram):

1. G95: Providing short text alternatives that provide a brief description of the non-text content using one of the following **Short text alternative techniques for Situation B AND** one of the following **Long text alternative techniques for Situation B** :

Short text alternative techniques for Situation B:

- ARIA6: Using aria-label to provide labels for objects (ARIA)
- ARIA10: Using aria-labelledby to provide a text alternative for non-text content (ARIA)
- G196: Using a text alternative on one item within a group of images that describes all items in the group
- FLASH1: Setting the name property for a non-text object (Flash)
- FLASH5: Combining adjacent image and text buttons for the same resource (Flash)
- FLASH28: Providing text alternatives for ASCII art, emoticons, and leetspeak in Flash (Flash)
- H2: Combining adjacent image and text links for the same resource (HTML)
- H35: Providing text alternatives on applet elements (HTML)
- H37: Using alt attributes on img elements (HTML)
- H53: Using the body of the object element (HTML)
- H86: Providing text alternatives for ASCII art, emoticons, and leetspeak (HTML)
- PDF1: Applying text alternatives to images with the Alt entry in PDF documents (PDF)
- SL5: Defining a Focusable Image Class for Silverlight (Silverlight)

Long text alternative techniques for Situation B:

- ARIA15: Using aria-describedby to provide descriptions of images (ARIA)
- G73: Providing a long description in another location with a link to it that is immediately adjacent to the non-text content
- G74: Providing a long description in text near the non-text content, with a reference to the location of the long description in the short description
- G92: Providing long description for non-text content that serves the same purpose and presents the same information
- FLASH2: Setting the description property for a non-text object in Flash (Flash)
- FLASH11: Providing a longer text description of an object (Flash)
- H45: Using longdesc (HTML)
- H53: Using the body of the object element (HTML)
- SL8: Displaying HelpText in Silverlight User Interfaces (Silverlight)

Situation C: If non-text content is a control or accepts user input:

1. G82: Providing a text alternative that identifies the purpose of the non-text content using one of the following **Text alternative techniques for controls and input for Situation C** :

Text alternative techniques for controls and input for Situation C:

- ARIA6: Using aria-label to provide labels for objects (ARIA)
- ARIA9: Using aria-labelledby to concatenate a label from several text nodes (ARIA)
- FLASH6: Creating accessible hotspots using invisible buttons (Flash)
- FLASH25: Labeling a form control by setting its accessible name (Flash)
- FLASH27: Providing button labels that describe the purpose of a button (Flash)
- FLASH29: Setting the label property for form components (Flash)
- FLASH30: Specifying accessible names for image buttons (Flash)
- FLASH32: Using auto labeling to associate text labels with form controls (Flash)
- H24: Providing text alternatives for the area elements of image maps (HTML)
- H30: Providing link text that describes the purpose of a link for anchor elements (HTML)
- H36: Using alt attributes on images used as submit buttons (HTML)
- H44: Using label elements to associate text labels with form controls (HTML)
- H65: Using the title attribute to identify form controls when the label element cannot be used (HTML)
- SL18: Providing Text Equivalent for Nontext Silverlight Controls With AutomationProperties.Name (Silverlight)
- SL26: Using LabeledBy to Associate Labels and Targets in Silverlight (Silverlight)
- SL30: Using Silverlight Control Compositing and AutomationProperties.Name (Silverlight)

Situation D: If non-text content is time-based media (including live video-only and live audio-only); a test or exercise that would be invalid if presented in text; or primarily intended to create a specific sensory experience:

1. Providing a descriptive label using one of the following **Short text alternative techniques for Situation D** :
2. ARIA6: Using aria-label to provide labels for objects (ARIA)
3. ARIA10: Using aria-labelledby to provide a text alternative for non-text content (ARIA)
4. G68: Providing a short text alternative that describes the purpose of live audio-only and live video-only content using one of the following **Short text alternative techniques for Situation D** :
5. G100: Providing a short text alternative which is the accepted name or a descriptive name of the non-text content using one of the following **Short text alternative techniques for Situation D** :

Short text alternative techniques for Situation D:

- ARIA6: Using aria-label to provide labels for objects (ARIA)
- ARIA10: Using aria-labelledby to provide a text alternative for non-text content (ARIA)
- G196: Using a text alternative on one item within a group of images that describes all items in the group
- FLASH1: Setting the name property for a non-text object (Flash)
- FLASH5: Combining adjacent image and text buttons for the same resource (Flash)
- FLASH28: Providing text alternatives for ASCII art, emoticons, and leetspeak in Flash (Flash)
- H2: Combining adjacent image and text links for the same resource (HTML)
- H35: Providing text alternatives on applet elements (HTML)
- H37: Using alt attributes on img elements (HTML)
- H53: Using the body of the object element (HTML)
- H86: Providing text alternatives for ASCII art, emoticons, and leetspeak (HTML)
- PDF1: Applying text alternatives to images with the Alt entry in PDF documents (PDF)
- SL5: Defining a Focusable Image Class for Silverlight (Silverlight)

Situation E: If non-text content is a CAPTCHA:

1. G143: Providing a text alternative that describes the purpose of the CAPTCHA **AND** G144: Ensuring that the Web Page contains another CAPTCHA serving the same purpose using a different modality

Situation F: If the non-text content should be ignored by assistive technology:

1. Implementing or marking the non-text content so that it will be ignored by assistive technology using one of the following **Techniques to indicate that text alternatives are not required for Situation F** :

Techniques to indicate that text alternatives are not required for Situation F:

- C9: Using CSS to include decorative images (CSS)
- FLASH3: Marking objects in Flash so that they can be ignored by AT (Flash)
- H67: Using null alt text and no title attribute on img elements for images that AT should ignore (HTML)
- PDF4: Hiding decorative images with the Artifact tag in PDF documents (PDF)

Advisory Techniques for 1.1.1 - Non-text Content

General Techniques for Informative Non-Text Content (Advisory)

- Identifying informative non-text content (future link)
- Keeping short descriptions short (future link)
- Describing images that include text (future link)
- Providing a longer description of the non-text content where only a descriptive label is required using a technology-specific technique (for an accessibility-supported content technology) for long description listed above (future link)
- Providing different sizes for non-text content when it cannot have an equivalent accessible alternative (future link)
- Using server-side scripts to resize images of text (future link)

General Techniques for Live Non-Text Content (Advisory)

- Linking to textual information that provides comparable information (e.g., for a traffic Webcam, a municipality could provide a link to the text traffic report.) (future link)

General techniques to minimize the barrier of CAPTCHAs

- Providing more than two modalities of CAPTCHAs (future link)
- Providing access to a human customer service representative who can bypass CAPTCHA (future link)
- Not requiring CAPTCHAs for authorized users (future link)

HTML Techniques (Advisory)

- H46: Using noembed with embed (HTML)
- Writing for browsers that do not support frame (future link)
- Providing alternative content for iframe (future link)
- Not using long descriptions for iframe (future link)
- Providing redundant text links for client-side image maps (future link)

CSS Techniques (Advisory)

- C18: Using CSS margin and padding rules instead of spacer images for layout design (CSS)
- Using CSS background, :before or :after rules for decorative images instead of img elements (future link)
- Displaying empty table cells (future link)

WAI-ARIA Techniques (Advisory)

- Using the ARIA presentation role to indicate elements are purely presentational (future link)

Silverlight Techniques (Advisory)

- SL19: Providing User Instructions With AutomationProperties.HelpText in Silverlight (Silverlight)

Metadata Techniques (Advisory)

- Using metadata to associate text transcriptions with a video (future link)
- Using metadata to associate text transcriptions with audio-only content (future link)
  - EXAMPLE: Providing, in metadata, URI(s) that points to an audio description and a text transcript of a video.
  - EXAMPLE: Providing, in metadata, URI(s) that point to several text transcripts (English, French, Dutch) of an audio file.

Failures for SC 1.1.1 - Non-text Content

- F3: Failure of Success Criterion 1.1.1 due to using CSS to include images that convey important information
- F13: Failure of Success Criterion 1.1.1 and 1.4.1 due to having a text alternative that does not include information that is conveyed by color differences in the image
- F20: Failure of Success Criterion 1.1.1 and 4.1.2 due to not updating text alternatives when changes to non-text content occur
- F30: Failure of Success Criterion 1.1.1 and 1.2.1 due to using text alternatives that are not alternatives (e.g., filenames or placeholder text)
- F38: Failure of Success Criterion 1.1.1 due to not marking up decorative images in HTML in a way that allows assistive technology to ignore them
- F39: Failure of Success Criterion 1.1.1 due to providing a text alternative that is not null (e.g., alt="spacer" or alt="image") for images that should be ignored by assistive technology
- F65: Failure of Success Criterion 1.1.1 due to omitting the alt attribute or text alternative on img elements, area elements, and input elements of type "image"
- F67: Failure of Success Criterion 1.1.1 and 1.2.1 due to providing long descriptions for non-text content that does not serve the same purpose or does not present the same information
- F71: Failure of Success Criterion 1.1.1 due to using text look-alikes to represent text without providing a text alternative
- F72: Failure of Success Criterion 1.1.1 due to using ASCII art without providing a text alternative

Time-based Media

Guideline 1.2 Provide alternatives for time-based media. Understanding Guideline 1.2

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Audio-only and Video-only (Prerecorded)

1.2.1 For prerecorded audio-only and prerecorded video-only media, the following are true, except when the audio or video is a media alternative for text and is clearly labeled as such: *(Level A)* Understanding Success Criterion 1.2.1

- **Prerecorded Audio-only:** An alternative for time-based media is provided that presents equivalent information for prerecorded audio-only content.

- **Prerecorded Video-only:** Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.

Sufficient Techniques for 1.2.1 - Audio-only and Video-only (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: If the content is prerecorded audio-only:

1. G158: Providing an alternative for time-based media for audio-only content
2. SL17: Providing Static Alternative Content for Silverlight Media Playing in a MediaElement (Silverlight)

Situation B: If the content is prerecorded video-only:

1. G159: Providing an alternative for time-based media for video-only content
2. G166: Providing audio that describes the important video content and describing it as such
3. SL17: Providing Static Alternative Content for Silverlight Media Playing in a MediaElement (Silverlight)

Advisory Techniques for 1.2.1 - Audio-only and Video-only (Prerecorded)

- H96: Using the track element to provide audio descriptions (HTML)
- Providing a transcript of a live audio only presentation after the fact (future link)
- Linking to textual information that provides comparable information (e.g., for a traffic Webcam, a municipality could provide a link to the text traffic report.) (future link)

Failures for SC 1.2.1 - Audio-only and Video-only (Prerecorded)

- F30: Failure of Success Criterion 1.1.1 and 1.2.1 due to using text alternatives that are not alternatives (e.g., filenames or placeholder text)
- F67: Failure of Success Criterion 1.1.1 and 1.2.1 due to providing long descriptions for non-text content that does not serve the same purpose or does not present the same information

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Captions (Prerecorded)

1.2.2 Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such. *(Level A)* Understanding Success Criterion 1.2.2

Sufficient Techniques for 1.2.2 - Captions (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G93: Providing open (always visible) captions

2. G87: Providing closed captions using any readily available media format that has a video player that supports closed captioning
3. G87: Providing closed captions using any of the technology-specific techniques below
    - SM11: Providing captions through synchronized text streams in SMIL 1.0 (SMIL)
    - SM12: Providing captions through synchronized text streams in SMIL 2.0 (SMIL)
    - H95: Using the track element to provide captions (HTML)
    - FLASH9: Applying captions to prerecorded synchronized media (Flash)
    - SL16: Providing Script-Embedded Text Captions for MediaElement Content (Silverlight)
    - SL28: Using Separate Text-Format Text Captions for MediaElement Content (Silverlight)

Advisory Techniques for 1.2.2 - Captions (Prerecorded)

- Providing a note saying "No sound is used in this clip" for video-only clips (future link)
- Using SMIL 1.0 to provide captions for all languages for which there are audio tracks (future link)
- Using SMIL 2.0 to provide captions for all languages for which there are audio tracks (future link)

Failures for SC 1.2.2 - Captions (Prerecorded)

- F8: Failure of Success Criterion 1.2.2 due to captions omitting some dialogue or important sound effects
- F75: Failure of Success Criterion 1.2.2 by providing synchronized media without captions when the synchronized media presents more information than is presented on the page
- F74: Failure of Success Criterion 1.2.2 and 1.2.8 due to not labeling a synchronized media alternative to text as an alternative

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Audio Description or Media Alternative (Prerecorded)

1.2.3 An alternative for time-based media or audio description of the prerecorded video content is provided for synchronized media, except when the media is a media alternative for text and is clearly labeled as such. *(Level A)* Understanding Success Criterion 1.2.3

Sufficient Techniques for 1.2.3 - Audio Description or Media Alternative (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G69: Providing an alternative for time based media using one of the following techniques
    - G58: Placing a link to the alternative for time-based media immediately next to the non-text content
    - SL17: Providing Static Alternative Content for Silverlight Media Playing in a MediaElement (Silverlight)
2. Linking to the alternative for time-based media using one of the following techniques

- H53: Using the body of the object element (HTML)

3. G78: Providing a second, user-selectable, audio track that includes audio descriptions
4. G78: Providing a second, user-selectable, audio track that includes audio descriptions **AND** SL1: Accessing Alternate Audio Tracks in Silverlight Media (Silverlight)
5. G173: Providing a version of a movie with audio descriptions using one of the following:
   - SM6: Providing audio description in SMIL 1.0 (SMIL)
   - SM7: Providing audio description in SMIL 2.0 (SMIL)
   - FLASH26: Applying audio descriptions to Flash video (Flash)
   - SL1: Accessing Alternate Audio Tracks in Silverlight Media (Silverlight)
   - Using any player that supports audio and video
6. G8: Providing a movie with extended audio descriptions using one of the following:
   - SM1: Adding extended audio description in SMIL 1.0 (SMIL)
   - SM2: Adding extended audio description in SMIL 2.0 (SMIL)
   - FLASH26: Applying audio descriptions to Flash video (Flash)
   - SL1: Accessing Alternate Audio Tracks in Silverlight Media (Silverlight)
   - Using any player that supports audio and video
7. G203: Using a static text alternative to describe a talking head video

Advisory Techniques for 1.2.3 - Audio Description or Media Alternative (Prerecorded)

- H96: Using the track element to provide audio descriptions (HTML)
- Providing audio description in multiple languages in SMIL 1.0 (future link)
- Providing audio description in multiple languages in SMIL 2.0 (future link)

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Captions (Live)

1.2.4 Captions are provided for all live audio content in synchronized media. *(Level AA)* Understanding Success Criterion 1.2.4

Sufficient Techniques for 1.2.4 - Captions (Live)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G9: Creating captions for live synchronized media **AND** G93: Providing open (always visible) captions
2. G9: Creating captions for live synchronized media **AND** G87: Providing closed captions using any readily available media format that has a video player that supports closed captioning
3. G9: Creating captions for live synchronized media **AND** G87: Providing closed captions using one of the following techniques:
   - SM11: Providing captions through synchronized text streams in SMIL 1.0 (SMIL)
   - SM12: Providing captions through synchronized text streams in SMIL 2.0 (SMIL)

Note: Captions may be generated using real-time text translation service.

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Audio Description (Prerecorded)

1.2.5 Audio description is provided for all prerecorded video content in synchronized media. *(Level AA)* Understanding Success Criterion 1.2.5

Sufficient Techniques for 1.2.5 - Audio Description (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G78: Providing a second, user-selectable, audio track that includes audio descriptions
2. G78: Providing a second, user-selectable, audio track that includes audio descriptions **AND** SL1: Accessing Alternate Audio Tracks in Silverlight Media (Silverlight)
3. G173: Providing a version of a movie with audio descriptions using one of the following:
   - SM6: Providing audio description in SMIL 1.0 (SMIL)
   - SM7: Providing audio description in SMIL 2.0 (SMIL)
   - FLASH26: Applying audio descriptions to Flash video (Flash)
   - Using any player that supports audio and video
4. G8: Providing a movie with extended audio descriptions using one of the following:
   - SM1: Adding extended audio description in SMIL 1.0 (SMIL)
   - SM2: Adding extended audio description in SMIL 2.0 (SMIL)
   - FLASH26: Applying audio descriptions to Flash video (Flash)
   - Using any player that supports audio and video
5. G203: Using a static text alternative to describe a talking head video

Advisory Techniques for 1.2.5 - Audio Description (Prerecorded)

- H96: Using the track element to provide audio descriptions (HTML)
- Providing audio description in multiple languages in SMIL 1.0 (future link)
- Providing audio description in multiple languages in SMIL 2.0 (future link)
- Providing audio description for live synchronized media (future link)

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Sign Language (Prerecorded)

1.2.6 Sign language interpretation is provided for all prerecorded audio content in synchronized media. *(Level AAA)* Understanding Success Criterion 1.2.6

Sufficient Techniques for 1.2.6 - Sign Language (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G54: Including a sign language interpreter in the video stream
2. G81: Providing a synchronized video of the sign language interpreter that can be displayed in a different viewport or overlaid on the image by the player using one of the following techniques

- SM13: Providing sign language interpretation through synchronized video streams in SMIL 1.0 (SMIL)
- SM14: Providing sign language interpretation through synchronized video streams in SMIL 2.0 (SMIL)

Advisory Techniques for 1.2.6 - Sign Language (Prerecorded)

Metadata Techniques

- Using metadata to associate sign language alternatives of a video to enable choice of sign language (future link)
  - EXAMPLE: Providing, in metadata, URI(s) that point to several English sign language translations (ASL, SASL, BSL, Auslan, ISL, NZSL) of a Web page.

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Extended Audio Description (Prerecorded)

1.2.7 Where pauses in foreground audio are insufficient to allow audio descriptions to convey the sense of the video, extended audio description is provided for all prerecorded video content in synchronized media. *(Level AAA)*
Understanding Success Criterion 1.2.7

Sufficient Techniques for 1.2.7 - Extended Audio Description (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G8: Providing a movie with extended audio descriptions using one of the following:
   - SM1: Adding extended audio description in SMIL 1.0 (SMIL)
   - SM2: Adding extended audio description in SMIL 2.0 (SMIL)
   - Using any player that supports audio and video

Advisory Techniques for 1.2.7 - Extended Audio Description (Prerecorded)

- H96: Using the track element to provide audio descriptions (HTML)
- Adding extended audio description in multiple languages in SMIL 1.0 (future link)
- Adding extended audio description in multiple languages in SMIL 2.0 (future link)

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Media Alternative (Prerecorded)

1.2.8 An alternative for time-based media is provided for all prerecorded synchronized media and for all prerecorded video-only media. *(Level AAA)*
Understanding Success Criterion 1.2.8

Sufficient Techniques for 1.2.8 - Media Alternative (Prerecorded)

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: If the content is prerecorded synchronized media:

1. G69: Providing an alternative for time based media using one of the following techniques
   - G58: Placing a link to the alternative for time-based media immediately next to the non-text content
   - SL17: Providing Static Alternative Content for Silverlight Media Playing in a MediaElement (Silverlight)
2. Linking to the alternative for time-based media using one of the following techniques
   - H53: Using the body of the object element (HTML)

Situation B: If the content is prerecorded video-only:

1. G159: Providing an alternative for time-based media for video-only content

Advisory Techniques for 1.2.8 - Media Alternative (Prerecorded)

- H46: Using noembed with embed (HTML)
- Providing a corrected script (future link)
- Adding detail to audio description (future link)

Failures for SC 1.2.8 - Media Alternative (Prerecorded)

- F74: Failure of Success Criterion 1.2.2 and 1.2.8 due to not labeling a synchronized media alternative to text as an alternative

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Audio-only (Live)

1.2.9 An alternative for time-based media that presents equivalent information for live audio-only content is provided. *(Level AAA)* Understanding Success Criterion 1.2.9

Sufficient Techniques for 1.2.9 - Audio-only (Live)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G151: Providing a link to a text transcript of a prepared statement or script if the script is followed
2. G150: Providing text based alternatives for live audio-only content
3. G157: Incorporating a live audio captioning service into a Web page

Advisory Techniques for 1.2.9 - Audio-only (Live)

- Using metadata to associate text transcriptions with audio-only content (future link)
  Example: Providing, in metadata, URI(s) that point to several text transcripts (English, French, Dutch) of an audio file.

Adaptable

Guideline 1.3 Create content that can be presented in different ways (for example simpler layout) without losing information or structure. Understanding Guideline 1.3

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Info and Relationships

1.3.1 Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text. *(Level A)* Understanding Success Criterion 1.3.1

Sufficient Techniques for 1.3.1 - Info and Relationships

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: The technology provides semantic structure to make information and relationships conveyed through presentation programmatically determinable:

1. ARIA11: Using ARIA landmarks to identify regions of a page (ARIA)
2. ARIA12: Using role=heading to identify headings (ARIA)
3. ARIA13: Using aria-labelledby to name regions and landmarks (ARIA)
4. ARIA16: Using aria-labelledby to provide a name for user interface controls (ARIA)
5. ARIA17: Using grouping roles to identify related form controls (ARIA)
6. ARIA20: Using the region role to identify a region of the page (ARIA)
7. G115: Using semantic elements to mark up structure **AND** H49: Using semantic markup to mark emphasized or special text (HTML)
8. G117: Using text to convey information that is conveyed by variations in presentation of text
9. G140: Separating information and structure from presentation to enable different presentations
10. Making information and relationships conveyed through presentation programmatically determinable using the following techniques:
    - G138: Using semantic markup whenever color cues are used
    - H51: Using table markup to present tabular information (HTML)
    - PDF6: Using table elements for table markup in PDF Documents (PDF)
    - PDF20: Using Adobe Acrobat Pro's Table Editor to repair mistagged tables (PDF)
    - H39: Using caption elements to associate data table captions with data tables (HTML)
    - FLASH31: Specifying caption text for a DataGrid (Flash)
    - H73: Using the summary attribute of the table element to give an overview of data tables (HTML)
    - FLASH23: Adding summary information to a DataGrid (Flash)
    - H63: Using the scope attribute to associate header cells and data cells in data tables (HTML)
    - H43: Using id and headers attributes to associate data cells with header cells in data tables (HTML)
    - FLASH21: Using the DataGrid component to associate column headers with cells (Flash)
    - H44: Using label elements to associate text labels with form controls (HTML)
    - H65: Using the title attribute to identify form controls when the label element cannot be used (HTML)

- PDF10: Providing labels for interactive form controls in PDF documents (PDF)
- PDF12: Providing name, role, value information for form fields in PDF documents (PDF)
- FLASH32: Using auto labeling to associate text labels with form controls (Flash)
- FLASH29: Setting the label property for form components (Flash)
- FLASH25: Labeling a form control by setting its accessible name (Flash)
- H71: Providing a description for groups of form controls using fieldset and legend elements (HTML)
- SL20: Relying on Silverlight AutomationPeer Behavior to Set AutomationProperties.Name (Silverlight)
- SL26: Using LabeledBy to Associate Labels and Targets in Silverlight (Silverlight)
- H85: Using OPTGROUP to group OPTION elements inside a SELECT (HTML)
- H48: Using ol, ul and dl for lists or groups of links (HTML)
- H42: Using h1-h6 to identify headings (HTML)
- PDF9: Providing headings by marking content with heading tags in PDF documents (PDF)
- SCR21: Using functions of the Document Object Model (DOM) to add content to a page (Scripting)
- PDF11: Providing links and link text using the Link annotation and the /Link structure element in PDF documents (PDF)
- PDF17: Specifying consistent page numbering for PDF documents (PDF)
- PDF21: Using List tags for lists in PDF documents (PDF)
- H97: Grouping related links using the nav element (HTML)

Situation B: The technology in use does NOT provide the semantic structure to make the information and relationships conveyed through presentation programmatically determinable:

1. G117: Using text to convey information that is conveyed by variations in presentation of text
2. FLASH8: Adding a group name to the accessible name of a form control (Flash)
3. Making information and relationships conveyed through presentation programmatically determinable or available in text using the following techniques:
   - T1: Using standard text formatting conventions for paragraphs (Text)
   - T2: Using standard text formatting conventions for lists (Text)
   - T3: Using standard text formatting conventions for headings (Text)

Advisory Techniques for 1.3.1 - Info and Relationships

- C22: Using CSS to control visual presentation of text (CSS)
- Using CSS rather than tables for page layout (future link)
- G162: Positioning labels to maximize predictability of relationships
- ARIA1: Using the aria-describedby property to provide a descriptive label for user interface controls (ARIA)
- ARIA2: Identifying a required field with the aria-required property (ARIA)
- Providing labels for all form controls that do not have implicit labels (future link)
- G141: Organizing a page using headings

Failures for SC 1.3.1 - Info and Relationships

- F2: Failure of Success Criterion 1.3.1 due to using changes in text presentation to convey information without using the appropriate markup or text

- F17: Failure of Success Criterion 1.3.1 and 4.1.1 due to insufficient information in DOM to determine one-to-one relationships (e.g., between labels with same id) in HTML
- F33: Failure of Success Criterion 1.3.1 and 1.3.2 due to using white space characters to create multiple columns in plain text content
- F34: Failure of Success Criterion 1.3.1 and 1.3.2 due to using white space characters to format tables in plain text content
- F42: Failure of Success Criterion 1.3.1 and 2.1.1 due to using scripting events to emulate links in a way that is not programmatically determinable
- F43: Failure of Success Criterion 1.3.1 due to using structural markup in a way that does not represent relationships in the content
- F46: Failure of Success Criterion 1.3.1 due to using th elements, caption elements, or non-empty summary attributes in layout tables
- F48: Failure of Success Criterion 1.3.1 due to using the pre element to markup tabular information
- F62: Failure of Success Criterion 1.3.1 and 4.1.1 due to insufficient information in DOM to determine specific relationships in XML
- F68: Failure of Success Criterion 1.3.1 and 4.1.2 due to the association of label and user interface controls not being programmatically determined
- F87: Failure of Success Criterion 1.3.1 due to inserting non-decorative content by using :before and :after pseudo-elements and the 'content' property in CSS
- F90: Failure of Success Criterion 1.3.1 for incorrectly associating table headers and content via the headers and id attributes
- F91: Failure of Success Criterion 1.3.1 for not correctly marking up table headers
- F92: Failure of Success Criterion 1.3.1 due to the use of role presentation on content which conveys semantic information

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Meaningful Sequence

1.3.2 When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined. *(Level A)*

Understanding Success Criterion 1.3.2

Sufficient Techniques for 1.3.2 - Meaningful Sequence

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G57: Ordering the content in a meaningful sequence for all the content in the Web page
2. Marking sequences in the content as meaningful using one of the following techniques **AND** G57: Ordering the content in a meaningful sequence for those sequences
   - H34: Using a Unicode right-to-left mark (RLM) or left-to-right mark (LRM) to mix text direction inline (HTML)
   - H56: Using the dir attribute on an inline element to resolve problems with nested directional runs (HTML)
   - C6: Positioning content based on structural markup (CSS)
   - C8: Using CSS letter-spacing to control spacing within a word (CSS)
3. C27: Making the DOM order match the visual order (CSS)
4. FLASH15: Using the tabIndex property to specify a logical reading order and a logical tab order in Flash (Flash)
5. PDF3: Ensuring correct tab and reading order in PDF documents (PDF)

6. SL34: Using the Silverlight Default Tab Sequence and Altering Tab Sequences With Properties (Silverlight)

Advisory Techniques for 1.3.2 - Meaningful Sequence

- Using left-justified text for languages that are written left to right and right-justified text for languages that are written right-to-left (future link)
- Providing a link to linearized rendering (future link)
- Providing a style switcher between style sheets that affect presentation order (future link)

Failures for SC 1.3.2 - Meaningful Sequence

- F34: Failure of Success Criterion 1.3.1 and 1.3.2 due to using white space characters to format tables in plain text content
- F33: Failure of Success Criterion 1.3.1 and 1.3.2 due to using white space characters to create multiple columns in plain text content
- F32: Failure of Success Criterion 1.3.2 due to using white space characters to control spacing within a word
- F49: Failure of Success Criterion 1.3.2 due to using an HTML layout table that does not make sense when linearized
- F1: Failure of Success Criterion 1.3.2 due to changing the meaning of content by positioning information with CSS

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Sensory Characteristics

1.3.3 Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, size, visual location, orientation, or sound. *(Level A)* Understanding Success Criterion 1.3.3

Note: For requirements related to color, refer to *Guideline 1.4*.

Sufficient Techniques for 1.3.3 - Sensory Characteristics

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G96: Providing textual identification of items that otherwise rely only on sensory information to be understood

Advisory Techniques for 1.3.3 - Sensory Characteristics

- Using an image with a text alternative for graphical symbols instead of a Unicode font glyph with the desired graphical appearance but different meaning (future link)

Failures for SC 1.3.3 - Sensory Characteristics

- F14: Failure of Success Criterion 1.3.3 due to identifying content only by its shape or location
- F26: Failure of Success Criterion 1.3.3 due to using a graphical symbol alone to convey information

Distinguishable

Guideline 1.4 Make it easier for users to see and hear content including separating foreground from background. Understanding Guideline 1.4

Advisory Techniques for Guideline 1.4

- Using readable fonts (future link)
- Making sure any text in images of text is at least 14 points and has good contrast (future link)
- Providing a highly visible highlighting mechanism for links or controls when they receive keyboard focus (future link)

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Use of Color

1.4.1 Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. *(Level A)* Understanding Success Criterion 1.4.1

Note: This success criterion addresses color perception specifically. Other forms of perception are covered in *Guideline 1.3* including programmatic access to color and other visual presentation coding.

Sufficient Techniques for 1.4.1 - Use of Color

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: If the color of particular words, backgrounds, or other content is used to indicate information:

1. G14: Ensuring that information conveyed by color differences is also available in text
2. G205: Including a text cue for colored form control labels
3. G182: Ensuring that additional visual cues are available when text color differences are used to convey information
4. G183: Using a contrast ratio of 3:1 with surrounding text and providing additional visual cues on focus for links or controls where color alone is used to identify them

Situation B: If color is used within an image to convey information:

1. G111: Using color and pattern
2. G14: Ensuring that information conveyed by color differences is also available in text

Advisory Techniques for 1.4.1 - Use of Color

- Conveying information redundantly using color (future link)
- C15: Using CSS to change the presentation of a user interface component when it receives focus (CSS)

Failures for SC 1.4.1 - Use of Color

- F13: Failure of Success Criterion 1.1.1 and 1.4.1 due to having a text alternative that does not include information that is conveyed by color differences in the image
- F73: Failure of Success Criterion 1.4.1 due to creating links that are not visually evident without color vision
- F81: Failure of Success Criterion 1.4.1 due to identifying required or error fields using color differences only

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Audio Control

1.4.2 If any audio on a Web page plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level. *(Level A)* Understanding Success Criterion 1.4.2

Note: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether or not it is used to meet other success criteria) must meet this success criterion. See *Conformance Requirement 5: Non-Interference*.

Sufficient Techniques for 1.4.2 - Audio Control

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G60: Playing a sound that turns off automatically within three seconds
2. G170: Providing a control near the beginning of the Web page that turns off sounds that play automatically
3. G171: Playing sounds only on user request
4. SL24: Using AutoPlay to Keep Silverlight Media from Playing Automatically (Silverlight)
5. FLASH18: Providing a control to turn off sounds that play automatically in Flash (Flash)
6. FLASH34: Turning off sounds that play automatically when an assistive technology is detected (Flash)
7. SL3: Controlling Silverlight MediaElement Audio Volume (Silverlight)

Advisory Techniques for 1.4.2 - Audio Control

- Providing a site-wide preference to turn off audio in addition to providing a control near the top of the Web page that turns off sounds that play automatically (future link)

Failures for SC 1.4.2 - Audio Control

- F23: Failure of 1.4.2 due to playing a sound longer than 3 seconds where there is no mechanism to turn it off
- F93: Failure of Success Criterion 1.4.2 for absence of a way to pause or stop an HTML5 media element that autoplays

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Contrast (Minimum)

1.4.3 The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following: *(Level AA)* Understanding Success Criterion 1.4.3

- **Large Text:** Large-scale text and images of large-scale text have a contrast ratio of at least 3:1;
- **Incidental:** Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.
- **Logotypes:** Text that is part of a logo or brand name has no minimum contrast requirement.

Sufficient Techniques for 1.4.3 - Contrast (Minimum)

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: text is less than 18 point if not bold and less than 14 point if bold

1. G18: Ensuring that a contrast ratio of at least 4.5:1 exists between text (and images of text) and background behind the text
2. G148: Not specifying background color, not specifying text color, and not using technology features that change those defaults
3. G174: Providing a control with a sufficient contrast ratio that allows users to switch to a presentation that uses sufficient contrast
4. SL13: Providing A Style Switcher To Switch To High Contrast (Silverlight)

Situation B: text is at least 18 point if not bold and at least 14 point if bold

1. G145: Ensuring that a contrast ratio of at least 3:1 exists between text (and images of text) and background behind the text
2. G148: Not specifying background color, not specifying text color, and not using technology features that change those defaults
3. G174: Providing a control with a sufficient contrast ratio that allows users to switch to a presentation that uses sufficient contrast
4. SL13: Providing A Style Switcher To Switch To High Contrast (Silverlight)

Advisory Techniques for 1.4.3 - Contrast (Minimum)

- G156: Using a technology that has commonly-available user agents that can change the foreground and background of blocks of text
- Using a higher contrast value for text that is over a patterned background (future link)

- Using Unicode text and style sheets instead of images of text (future link)
- Using a higher contrast values for lines in diagrams (future link)
- Using greater contrast level for red-black text/background combinations (future link)
- Using colors that are composed predominantly of mid spectral components for the light and spectral extremes (blue and red wavelengths) for the dark
- Using a light pastel background rather than a white background behind black text to create sufficient but not extreme contrast (future link)
- Making icons using simple line drawings that meet the contrast provisions for text (future link)
- Providing sufficient contrast ratio in graphs and charts (future link)
- Using a 3:1 contrast ratio or higher as the default presentation (future link)
- Providing sufficient color contrast for empty text fields (future link)

Failures for SC 1.4.3 - Contrast (Minimum)

- F24: Failure of Success Criterion 1.4.3, 1.4.6 and 1.4.8 due to specifying foreground colors without specifying background colors or vice versa
- F83: Failure of Success Criterion 1.4.3 and 1.4.6 due to using background images that do not provide sufficient contrast with foreground text (or images of text)

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Resize text

1.4.4 Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality. *(Level AA)*
Understanding Success Criterion 1.4.4

Sufficient Techniques for 1.4.4 - Resize text

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G142: Using a technology that has commonly-available user agents that support zoom
2. SL22: Supporting Browser Zoom in Silverlight (Silverlight)
3. SL23: Using A Style Switcher to Increase Font Size of Silverlight Text Elements (Silverlight)
4. Ensuring that text containers resize when the text resizes **AND** using measurements that are relative to other measurements in the content by using one or more of the following techniques:
    - C28: Specifying the size of text containers using em units (CSS)
    - Techniques for relative measurements
        - C12: Using percent for font sizes (CSS)
        - C13: Using named font sizes (CSS)
        - C14: Using em units for font sizes (CSS)
    - Techniques for text container resizing
        - SCR34: Calculating size and position in a way that scales with text size (Scripting)
        - G146: Using liquid layout
5. G178: Providing controls on the Web page that allow users to incrementally change the size of all text on the page up to 200 percent

6. G179: Ensuring that there is no loss of content or functionality when the text resizes and text containers do not change their width

Advisory Techniques for 1.4.4 - Resize text

- Providing large fonts by default (future link)
- Using page-percent for container sizes (future link)
- Avoiding scaling font sizes smaller than the user-agent default (future link)
  Note: The author won't actually know the font size, but should avoid percentage scaling that results in less than 100%
- Avoiding justified text (future link)
- Providing sufficient inter-line and inter-column spacing (future link)
- Providing different sizes for non-text content when it cannot have an equivalent accessible alternative (future link)
- Avoiding the use of text in raster images (future link)
- Using server-side scripts to resize images of text (future link)
- C17: Scaling form elements which contain text (CSS)
- Ensuring that text in raster images is at least 18pt (future link)
- Scaling text down to 50% (future link)
- C20: Using relative measurements to set column widths so that lines can average 80 characters or less when the browser is resized (CSS)
- C22: Using CSS to control visual presentation of text (CSS)
- Providing a mechanism to allow captions to be enlarged (future link)

Failures for SC 1.4.4 - Resize text

- F69: Failure of Success Criterion 1.4.4 when resizing visually rendered text up to 200 percent causes the text, image or controls to be clipped, truncated or obscured
- F80: Failure of Success Criterion 1.4.4 when text-based form controls do not resize when visually rendered text is resized up to 200%

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Images of Text

1.4.5 If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text except for the following: *(Level AA)* Understanding Success Criterion 1.4.5

- **Customizable:** The image of text can be visually customized to the user's requirements;
- **Essential:** A particular presentation of text is essential to the information being conveyed.

Note: Logotypes (text that is part of a logo or brand name) are considered essential.

Sufficient Techniques for 1.4.5 - Images of Text

Note: Other techniques may also be sufficient if they meet the success criterion.

1. C22: Using CSS to control visual presentation of text (CSS)
2. SL31: Using Silverlight Font Properties to Control Text Presentation (Silverlight)
3. C30: Using CSS to replace text with images of text and providing user interface controls to switch (CSS)
4. G140: Separating information and structure from presentation to enable different presentations
5. PDF7: Performing OCR on a scanned PDF document to provide actual text (PDF)

Advisory Techniques for 1.4.5 - Images of Text

General techniques for non-text content

1. Identifying informative non-text content (future link)

CSS Techniques

1. C12: Using percent for font sizes (CSS)
2. C13: Using named font sizes (CSS)
3. C14: Using em units for font sizes (CSS)
4. C8: Using CSS letter-spacing to control spacing within a word (CSS)
5. C6: Positioning content based on structural markup (CSS)
6. Avoid applying text styling to text characters within a word (future link)

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Contrast (Enhanced)

1.4.6 The visual presentation of text and images of text has a contrast ratio of at least 7:1, except for the following: *(Level AAA)* Understanding Success Criterion 1.4.6

- **Large Text:** Large-scale text and images of large-scale text have a contrast ratio of at least 4.5:1;
- **Incidental:** Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.
- **Logotypes:** Text that is part of a logo or brand name has no minimum contrast requirement.

Sufficient Techniques for 1.4.6 - Contrast (Enhanced)

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: text is less than 18 point if not bold and less than 14 point if bold

1. G17: Ensuring that a contrast ratio of at least 7:1 exists between text (and images of text) and background behind the text
2. G148: Not specifying background color, not specifying text color, and not using technology features that change those defaults

3. G174: Providing a control with a sufficient contrast ratio that allows users to switch to a presentation that uses sufficient contrast
4. SL13: Providing A Style Switcher To Switch To High Contrast (Silverlight)

Situation B: text is as least 18 point if not bold and at least 14 point if bold

1. G18: Ensuring that a contrast ratio of at least 4.5:1 exists between text (and images of text) and background behind the text
2. G148: Not specifying background color, not specifying text color, and not using technology features that change those defaults
3. G174: Providing a control with a sufficient contrast ratio that allows users to switch to a presentation that uses sufficient contrast
4. SL13: Providing A Style Switcher To Switch To High Contrast (Silverlight)

Advisory Techniques for 1.4.6 - Contrast (Enhanced)

- G156: Using a technology that has commonly-available user agents that can change the foreground and background of blocks of text
- Using a higher contrast value for text that is over a patterned background (future link)
- Using Unicode text and style sheets instead of images of text (future link)
- Using a higher contrast values for lines in diagrams (future link)
- Using greater contrast level for red-black text/background combinations
- Using colors that are composed predominantly of mid spectral components for the light and spectral extremes (blue and red wavelengths) for the dark
- Using a light pastel background rather than a white background behind black text to create sufficient but not extreme contrast (future link)
- Making icons using simple line drawings that meet the contrast provisions for text (future link)
- Providing sufficient contrast ratio in graphs and charts (future link)
- Using a 3:1 contrast ratio or higher as the default presentation (future link)
- Providing sufficient color contrast for empty text fields (future link)

Failures for SC 1.4.6 - Contrast (Enhanced)

- F24: Failure of Success Criterion 1.4.3, 1.4.6 and 1.4.8 due to specifying foreground colors without specifying background colors or vice versa
- F83: Failure of Success Criterion 1.4.3 and 1.4.6 due to using background images that do not provide sufficient contrast with foreground text (or images of text)

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Low or No Background Audio

1.4.7 For prerecorded audio-only content that (1) contains primarily speech in the foreground, (2) is not an audio CAPTCHA or audio logo, and (3) is not vocalization intended to be primarily musical expression such as singing or rapping, at least one of the following is true: *(Level AAA)* Understanding Success Criterion 1.4.7

- **No Background:** The audio does not contain background sounds.
- **Turn Off:** The background sounds can be turned off.

- **20 dB:** The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds.

  Note: Per the definition of "decibel," background sound that meets this requirement will be approximately four times quieter than the foreground speech content.

Sufficient Techniques for 1.4.7 - Low or No Background Audio

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G56: Mixing audio files so that non-speech sounds are at least 20 decibels lower than the speech audio content

Advisory Techniques for 1.4.7 - Low or No Background Audio

- Providing a way for users to adjust auditory levels of foreground and background sound independently (future link)
- Providing an audio track for synchronized media that includes background sounds that are at least 20 decibels lower than speech (future link)

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Visual Presentation

1.4.8 For the visual presentation of blocks of text, a mechanism is available to achieve the following: *(Level AAA)* Understanding Success Criterion 1.4.8

1. Foreground and background colors can be selected by the user.
2. Width is no more than 80 characters or glyphs (40 if CJK).
3. Text is not justified (aligned to both the left and the right margins).
4. Line spacing (leading) is at least space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing.
5. Text can be resized without assistive technology up to 200 percent in a way that does not require the user to scroll horizontally to read a line of text on a full-screen window.

Sufficient Techniques for 1.4.8 - Visual Presentation

Note: Other techniques may also be sufficient if they meet the success criterion.

Instructions: Since this is a multi-part success criterion, you must satisfy one of the numbered items for each of the requirements below.

First Requirement: Techniques to ensure foreground and background colors can be selected by the user

1. C23: Specifying text and background colors of secondary content such as banners, features and navigation in CSS while not specifying text and background colors of the main content (CSS) OR

2. C25: Specifying borders and layout in CSS to delineate areas of a Web page while not specifying text and text-background colors (CSS) OR
3. G156: Using a technology that has commonly-available user agents that can change the foreground and background of blocks of text OR
4. G148: Not specifying background color, not specifying text color, and not using technology features that change those defaults OR
5. G175: Providing a multi color selection tool on the page for foreground and background colors

Second Requirement: Techniques to ensure width is no more than 80 characters or glyphs (40 if CJK)

1. G204: Not interfering with the user agent's reflow of text as the viewing window is narrowed OR
2. C20: Using relative measurements to set column widths so that lines can average 80 characters or less when the browser is resized (CSS)

Third Requirement: Techniques to ensure text is not justified (aligned to both the left and the right margins)

1. C19: Specifying alignment either to the left OR right in CSS (CSS) OR
2. G172: Providing a mechanism to remove full justification of text OR
3. G169: Aligning text on only one side

Fourth Requirement: Techniques to ensure line spacing (leading) is at least space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing

1. G188: Providing a button on the page to increase line spaces and paragraph spaces OR
2. C21: Specifying line spacing in CSS (CSS)

Fifth Requirement: Techniques to ensure text can be resized without assistive technology up to 200 percent in a way that does not require the user to scroll horizontally to read a line of text on a full-screen window

1. Not interfering with the user agent's reflow of text as the viewing window is narrowed (General, Future Link) OR
2. G146: Using liquid layout *AND* using measurements that are relative to other measurements in the content by using one or more of the following techniques:
    - C12: Using percent for font sizes (CSS) OR
    - C13: Using named font sizes (CSS) OR
    - C14: Using em units for font sizes (CSS) OR
    - C24: Using percentage values in CSS for container sizes (CSS) OR
    - FLASH33: Using relative values for Flash object dimensions (Flash)
    - SCR34: Calculating size and position in a way that scales with text size (Scripting) OR
3. G206: Providing options within the content to switch to a layout that does not require the user to scroll horizontally to read a line of text

Advisory Techniques for 1.4.8 - Visual Presentation

- Using a hover effect to highlight a paragraph, list items, or table cells (CSS) (future link)
- Presenting text in sans serif font or providing a mechanism to achieve this (CSS) (future link)
- Using vertical (bulleted or numbered) lists rather than inline lists (future link)
- Using upper and lower case according to the spelling conventions of the text language (future link)
- Providing large fonts by default (future link)
- Avoiding the use of text in raster images (future link)
- Avoiding scaling font sizes smaller than the user-agent default (future link)
- Providing sufficient inter-column spacing (future link)

- Avoiding centrally aligned text (future link)
- Avoiding chunks of italic text (future link)
- Avoiding overuse of different styles on individual pages and in sites (future link)
- Making links visually distinct (future link)
- Providing expandable bullets (future link)
- Show/hide bullet points (future link)
- Putting an em-space or two spaces after sentences (future link)

Failures for SC 1.4.8 - Visual Presentation

- F24: Failure of Success Criterion 1.4.3, 1.4.6 and 1.4.8 due to specifying foreground colors without specifying background colors or vice versa
- F88: Failure of Success Criterion 1.4.8 due to using text that is justified (aligned to both the left and the right margins)

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Images of Text (No Exception)

1.4.9 Images of text are only used for pure decoration or where a particular presentation of text is essential to the information being conveyed. *(Level AAA)*
Understanding Success Criterion 1.4.9

Note: Logotypes (text that is part of a logo or brand name) are considered essential.

Sufficient Techniques for 1.4.9 - Images of Text (No Exception)

Note: Other techniques may also be sufficient if they meet the success criterion.

1. C22: Using CSS to control visual presentation of text (CSS)
2. SL31: Using Silverlight Font Properties to Control Text Presentation (Silverlight)
3. C30: Using CSS to replace text with images of text and providing user interface controls to switch (CSS)
4. G140: Separating information and structure from presentation to enable different presentations
5. PDF7: Performing OCR on a scanned PDF document to provide actual text (PDF)

Advisory Techniques for 1.4.9 - Images of Text (No Exception)

General Techniques for Non-Decorative Content

- Using server-side scripts to resize images of text (future link)

CSS Techniques

- C12: Using percent for font sizes (CSS)
- C13: Using named font sizes (CSS)
- C14: Using em units for font sizes (CSS)
- C8: Using CSS letter-spacing to control spacing within a word (CSS)
- C6: Positioning content based on structural markup (CSS)

- Avoid applying text styling to text characters within a word (future link)

Keyboard Accessible

Guideline 2.1 Make all functionality available from a keyboard. Understanding Guideline 2.1

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Keyboard

2.1.1 All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints. *(Level A)* Understanding Success Criterion 2.1.1

Note 1: This exception relates to the underlying function, not the input technique. For example, if using handwriting to enter text, the input technique (handwriting) requires path-dependent input but the underlying function (text input) does not.

Note 2: This does not forbid and should not discourage providing mouse input or other input methods in addition to keyboard operation.

Sufficient Techniques for 2.1.1 - Keyboard

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G202: Ensuring keyboard control for all functionality
2. Ensuring keyboard control by using one of the following techniques.
   - H91: Using HTML form controls and links (HTML)
   - PDF3: Ensuring correct tab and reading order in PDF documents (PDF)
   - PDF11: Providing links and link text using the Link annotation and the /Link structure element in PDF documents (PDF)
   - PDF23: Providing interactive form controls in PDF documents (PDF)
   - SL15: Providing Keyboard Shortcuts that Work Across the Entire Silverlight Application (Silverlight)
3. G90: Providing keyboard-triggered event handlers using one of the following techniques:
   - SCR20: Using both keyboard and other device-specific functions (Scripting)
   - SCR35: Making actions keyboard accessible by using the onclick event of anchors and buttons (Scripting)
   - SCR2: Using redundant keyboard and mouse event handlers (Scripting)
   - SL9: Handling Key Events to Enable Keyboard Functionality in Silverlight (Silverlight)
   - SL14: Providing Custom Control Key Handling for Keyboard Functionality in Silverlight (Silverlight)
4. FLASH17: Providing keyboard access to a Flash object and avoiding a keyboard trap (Flash) **AND** using the following techniques as applicable:
   - FLASH22: Adding keyboard-accessible actions to static elements (Flash)
   - FLASH16: Making actions keyboard accessible by using the click event on standard components (Flash)

- FLASH14: Using redundant keyboard and mouse event handlers in Flash (Flash)

Advisory Techniques for 2.1.1 - Keyboard

- Using XHTML role, state, and value attributes if repurposing static elements as interactive user interface components (future link) AND SCR29: Adding keyboard-accessible actions to static HTML elements (Scripting)
- Providing keyboard shortcuts to important links and form controls (future link)
- Using unique letter combinations to begin each item of a list (future link)
- Choosing the most abstract event handler (future link) (Scripting)
- Using the onactivate event (future link) (Scripting)
- Avoiding use of common user-agent keyboard commands for other purposes (future link)

Failures for SC 2.1.1 - Keyboard

- F54: Failure of Success Criterion 2.1.1 due to using only pointing-device-specific event handlers (including gesture) for a function
- F55: Failure of Success Criteria 2.1.1, 2.4.7, and 3.2.1 due to using script to remove focus when focus is received
- F42: Failure of Success Criterion 1.3.1 and 2.1.1 due to using scripting events to emulate links in a way that is not programmatically determinable

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No Keyboard Trap

2.1.2 If keyboard focus can be moved to a component of the page using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away. *(Level A)* Understanding Success Criterion 2.1.2

Note: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. See *Conformance Requirement 5: Non-Interference*.

Sufficient Techniques for 2.1.2 - No Keyboard Trap

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G21: Ensuring that users are not trapped in content
2. FLASH17: Providing keyboard access to a Flash object and avoiding a keyboard trap (Flash)

Failures for SC 2.1.2 - No Keyboard Trap

- F10: Failure of Success Criterion 2.1.2 and Conformance Requirement 5 due to combining multiple content formats in a way that traps users inside one format type

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Keyboard (No Exception)

2.1.3 All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes. *(Level AAA)*
Understanding Success Criterion 2.1.3

Sufficient Techniques for 2.1.3 - Keyboard (No Exception)

Note: Other techniques may also be sufficient if they meet the success criterion.

No additional techniques exist for this Success Criterion. Follow techniques for Success Criterion 2.1.1. If that is not possible because there is a requirement for path-dependent input, then it is not possible to meet this Level AAA Success Criterion.

Enough Time

Guideline 2.2 Provide users enough time to read and use content. Understanding Guideline 2.2

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Timing Adjustable

2.2.1 For each time limit that is set by the content, at least one of the following is true: *(Level A)* Understanding Success Criterion 2.2.1

- **Turn off:** The user is allowed to turn off the time limit before encountering it; or
- **Adjust:** The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; or
- **Extend:** The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times; or
- **Real-time Exception:** The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; or
- **Essential Exception:** The time limit is essential and extending it would invalidate the activity; or
- **20 Hour Exception:** The time limit is longer than 20 hours.

Note: This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with Success Criterion 3.2.1, which puts limits on changes of content or context as a result of user action.

Sufficient Techniques for 2.2.1 - Timing Adjustable

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: If there are session time limits:

1. G133: Providing a checkbox on the first page of a multipart form that allows users to ask for longer session time limit or no session time limit
2. G198: Providing a way for the user to turn the time limit off

Situation B: If a time limit is controlled by a script on the page:

1. G198: Providing a way for the user to turn the time limit off
2. G180: Providing the user with a means to set the time limit to 10 times the default time limit
3. SCR16: Providing a script that warns the user a time limit is about to expire (Scripting) **AND** SCR1: Allowing the user to extend the default time limit (Scripting)
4. FLASH19: Providing a script that warns the user a time limit is about to expire and provides a way to extend it (Flash)
5. FLASH24: Allowing the user to extend the default time limit (Flash)
6. SL21: Replacing A Silverlight Timed Animation With a Nonanimated Element (Silverlight)

Situation C: If there are time limits on reading:

1. G4: Allowing the content to be paused and restarted from where it was paused
2. G198: Providing a way for the user to turn the time limit off
3. SCR33: Using script to scroll content, and providing a mechanism to pause it (Scripting)
4. SCR36: Providing a mechanism to allow users to display moving, scrolling, or auto-updating text in a static window or area (Scripting)

Advisory Techniques for 2.2.1 - Timing Adjustable

- Using a script to poll the server and notify a user if a time limit is present (future link) (Scripting)
- Using sounds to focus user's attention (future link)

Failures for SC 2.2.1 - Timing Adjustable

- F40: Failure of Success Criterion 2.2.1 and 2.2.4 due to using meta redirect with a time limit
- F41: Failure of Success Criterion 2.2.1, 2.2.4, and 3.2.5 due to using meta refresh with a time-out
- F58: Failure of Success Criterion 2.2.1 due to using server-side techniques to automatically redirect pages after a time-out

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Pause, Stop, Hide

2.2.2 For moving, blinking, scrolling, or auto-updating information, all of the following are true: *(Level A)* Understanding Success Criterion 2.2.2

- **Moving, blinking, scrolling:** For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to

pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and

- **Auto-updating:** For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.

Note 1: For requirements related to flickering or flashing content, refer to *Guideline 2.3*.

Note 2: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. See *Conformance Requirement 5: Non-Interference*.

Note 3: Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so.

Note 4: An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken.

Sufficient Techniques for 2.2.2 - Pause, Stop, Hide

Note: Other techniques may also be sufficient if they meet the success criterion.

1. G4: Allowing the content to be paused and restarted from where it was paused
2. SL11: Pausing or Stopping A Decorative Silverlight Animation (Silverlight)
3. SL12: Pausing, Stopping, or Playing Media in Silverlight MediaElements (Silverlight)
4. SCR33: Using script to scroll content, and providing a mechanism to pause it (Scripting)
5. FLASH35: Using script to scroll Flash content, and providing a mechanism to pause it (Flash)
6. G11: Creating content that blinks for less than 5 seconds
7. G187: Using a technology to include blinking content that can be turned off via the user agent
8. G152: Setting animated gif images to stop blinking after n cycles (within 5 seconds)
9. SCR22: Using scripts to control blinking and stop it in five seconds or less (Scripting)
10. FLASH36: Using scripts to control blinking and stop it in five seconds or less (Flash)
11. G186: Using a control in the Web page that stops moving, blinking, or auto-updating content
12. G191: Providing a link, button, or other mechanism that reloads the page without any blinking content
13. SL24: Using AutoPlay to Keep Silverlight Media from Playing Automatically (Silverlight)

Advisory Techniques for 2.2.2 - Pause, Stop, Hide

- Providing a mechanism to stop all content that blinks within a Web page (future link)