User Instructions for Keyboard Access and Focus

This testing is using your keyboard only. The mouse is only to be used to identify elements and navigating away form a keyboard trap.

WCAG 2.0 Guidelines

Keyboard - 2.1.1 – Level A

All functionality of the content is operable through a keyboard interface.

- Icons, Links, buttons, and form control element MUST be keyboard accessible.
- Access keys: Tab, Shift+Tab, Arrow Down, Arrow Up, Enter, and Spacebar.

No Keyboard Trap - 2.1.2 – Level A

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.

- Keyboard focus MUST NOT be locked or trapped in a page element and the user MUST be able to navigate to and from all navigable page elements using only a keyboard.

Bypass Block - 2.4.1 – Level A

A mechanism is available to bypass blocks of content that are repeated on multiple Web pages.

Focus Order - 2.4.3 – Level A

The navigation order of focusable elements (links, form elements, etc.) MUST be logical and intuitive.

Focus Visible - 2.4.7 – Level AA

Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible.

- All focusable elements MUST have a visual focus indicator when in focus.
- Focusable elements SHOULD have enhanced (e.g., dotted line, color line, and back lite dropdown list) visual focus indicator styles.

On Focus - 3.2.1 – Level A

When any component receives focus, it does not initiate a change of context.

On Input – 3.2.2 - Level A

Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behavior before using the component.

Testing Steps

Open https://www.w3.org/WAI/demos/bad/before/survey.html

When testing for internal projects, review the application requirements/documentation for interactive elements.

When evaluating third party vendor products, use a mouse to identify the functionality and essential information provided by interactive elements. Usually, the mouse pointer will change from an arrow image to a hand image.

You examine the test page and identify the following interactive elements:

- Logo at the top of the page
- QuickMenu
- Menu options at the left of the page
- Article title links
- Links within the articles

Note: each tester will create their own method of testing. I split the Keyboard 2.1.1 access and functionality into two separate steps. The Trusted Tester course has Access and Functionality tested together.

1. Tab Access and Keyboard Trap

1. Use your keyboard Tab key to access every menu option, icon, field, and link.
2. Use your keyboard Shift+Tab keys to move focus.
3. If there is keyboard trap, continue to test interactive elements after the trap by using the mouse to bypass the trap or refreshing the page and using the keyboard to navigate backwards through the page.
4. Determine each element can be accessed by keyboard and there is not tabbing lock or loop that stops the user from navigating to the element.

2. Focus Order

1. Continue from Tab Access step.
2. Use your keyboard Tab key to navigate to each element.
3. Determine if the focus order impacts the page meaning (e.g., form fields for a mailing address are presented in the expected sequence).
   - This is most often noticeable when focus order does not follow the logical order of operation (normally top to bottom, left to right).
   - For modal dialog boxes, visual focus should remain within the modal dialog box until it is closed. A modal dialog box requires user interaction to return to the application.

3. Focus Visible

1. Continue from Focus Order step.
2. Use your keyboard Shift+Tab key to move focus.
3. Determine whether there is a visible indication of focus on the element that has keyboard focus.

4. Keyboard Functionality

1. Press Control+F5 to refresh the page and start from the top.
2. Use the Tab key to navigate to element:
   a. Use the keyboard arrow keys to access the submenu options, radio buttons, and dropdown list.
   b. Use the Enter key or Spacebar to activate the interactive element:
      o When any of the interactive elements result in navigation away from the current page.
      o For modal dialog boxes, all Keyboard Access and Focus steps need to be performed and keyboard focus does not go outside the modal. Select the Close button to return to the page from modal.

- o For new page or window, select your browser's back button or by press Alt + left arrow key to return to the testing page.
    3. Repeat these steps until you have verified each element can be executed using the keyboard.
    4. Determine each element can be executed by keyboard and there is no tabbing loop (No Keyboard Trap) that stops the user from navigating to element.

5. On Focus

1. Use the Tab key to navigate to each element.
2. Determine whether an unexpected change of context occurs, e.g., a new window is launched, or focus is moved to another interface component.
3. For modal dialog boxes, visual focus should return to the element that triggered the event. Focus has not been lost or reset to the top of the page, except when loading or re-loading a page.

6. On Input

1. Using the Shift+Tab key to navigate to form control elements.
2. Change the value of the input element (e.g., update text, dropdown value, radio button, and checkboxes).
3. Determine whether change of element automatically causes a change of context.

7. Bypass Block

1. Select menu link
2. Determine if there are blocks of content that repeat on multiple Web pages (e.g., main, left menu).
3. Press Alt + left arrow key to return to the page.
4. Press the Tab key to locate "Skip to" link(s).
5. Using the Enter key to activate the interactive element.

Recap of the Survey page

Tab Access: fail

Unable to navigate to main content elements and left navigation menu links.

Keyboard Traps: fail

Because the elements are not access after top content that is repeated.

Tab Order: fail

Out of order on the "Do you want to receive a free newsletter?" panel; Email address – Name – Retype Email address. Should be Name, Email address and then Retype email address

On Input: fail

QUICKMENU – automatically cause a change of context. The context changed without warning when the status of a select list is changed.

Bypass Blocks: fail

Focus is not visible and did not skip to main content. Also, when press the tab key it goes back to skip link.

News

Tab Order: fail

Left column to right column back to left column.

Visual Focus: fail

Focus is on "Your Shout" paragraph but indicator is not visible.

Survey

Tab Order: fail

Out of order on the "**Do you want to receive a free newsletter?"** panel; Email address – Name – Retype Email address. Should be Name, Email address, and then Retype email address.

Visual Focus: Fail

Focus is on left navigation menu links, but indicator is not visible.

Washginton.edu - Accessible University 3.0

View the [inaccessible home page](#) - This page demonstrates common web accessibility issues using the fictitious AU home page. See how many web accessibility problems you can identify. **NOTE:** Since the purpose of this page is to demonstrate inaccessible web design, certain features are inherently inaccessible to some groups of users.

Keyboard

Tab Access - fail

Inaccessible dropdown menu. The navigation menu on this page includes sub-menus that appear when users hover over the menus with a mouse. However, these same menus do not appear for non-mouse users. If a user navigates to the menu by pressing tab, the sub-menus do not appear; nor do the main menu items send the user to a new page. They simply don't work.

Inaccessible carousel. Carousels or slideshows are common features on home pages. Unless designed and coded with accessibility in mind, these features present a variety of accessibility issues:

Keyboard Trap - pass

Focus Order - pass

Focus Visual – fail

Focus is not visible on "Click Here" links and "Desired major(s):" checkboxes.

On Focus – fail

Submit button - focus is lost – should be on the first field with error.

On Input – pass

Bypass Blocks – fail

No "Skip" link. The menu is repeated on multiple Web pages but there are no bypass blocks of content.

Resources

1. Deque University – Accessibility Testing: Basic Methods and Tools https://dequeuniversity.com/
2. W3C - http://www.w3.org/TR/WCAG20/#keyboard-operation and http://www.w3.org/WAI/demos/bad
3. Washington EDU - http://www.washington.edu/accesscomputing/AU/before.html#