The Accessibility Engine (V4.1.0 axe-core 3.2.2)

The axe extension for **Chrome** and **Firefox** is an accessibility testing engine for websites and other HTML-based user interfaces. A test is made up of a series of Rules which are, themselves, made up of automated accessibility checks. The list of axe 3.2 rules-checks can be found at https://dequeuniversity.com/rules/axe/3.2 . There is a table located on GitHub that provides axe-core rule and descriptions https://github.com/dequelabs/axe-core/blob/master/doc/rule-descriptions.md. The table can be used as a template to track issues.
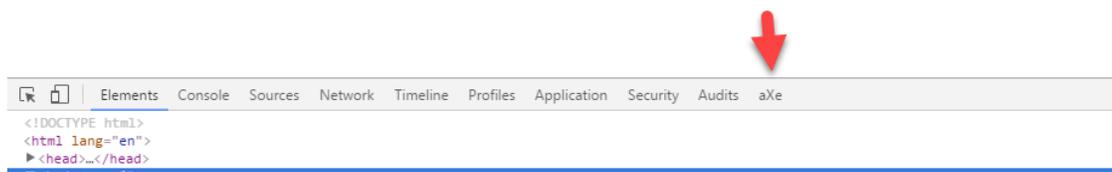
Note: axe for Android and axe for iOS (coming soon) download apps are available for mobile testing.

Add axe extension for Chrome

1. Add the Chrome browser by searching for Chrome on IE or Edge if you already don't have it on your computer. You may need to submit a service desk ticket if you are unable to perform this task.
2. Open Chrome and search for the Chrome web store
3. Enter axe into the search text field and press the enter key
4. Select the "Add to Chrome" button

Orientation

1. Navigate to the https://www.w3.org/WAI/demos/bad/before/survey.html page.
2. Open Chrome's developer tools menu. You can accomplish this by right-clicking on the page and selecting the "Inspect" option or pressing F12 or pressing Shift+Ctrl+J.
3. Select the axe tab in the developer tools menu. In Firefox the tab is named "Accessibility" or "axe Accessibility Audit."

   a) Select the big "Analyze" button.

axe Elements

The axe panel has three panels: Summary, Details, and Guidance

The **Summary panel** provides an "**Issue Type**" dropdown list that include issue type name (All issues, Violations, Needs review, Rejected, Best practice) and how many times the issue type occurs on the page, a "**Save Results**" button, a "**Run Again**" button, and a list of accessibility issues associated with the "**Issue Type**" dropdown selection with the total of how many times that issue occurs on the page. When there are no violations, axe will post "Congratulations! No accessibility violations found." in the main content section.

The **Detail panel** provides an Accessibility Issue "**Inspect Node**" link, which will bring you to the problem-code in your browser's page inspector; a "**Highlight**" link, which will highlight the element on the test page; a "**Next** and **Previous** navigator"; an Issue description header with Impact level; a "**Learn More**" link that will open an new tap with additional info available for free on Deque University website; and a snippet of the Element location and Element source that has caused the issue.

The **Guidance panel** provides Guidelines for fixing the issue with "Related nodes: Inspect link" or that the issue needs manual review.

AXE Evaluation Process

1. Select the home menu: http://www.w3.org/WAI/demos/bad/before/home.html
2. Open your browser's developer tools menu. You can accomplish this by right-clicking on the page and selecting the "Inspect" option or by pressing F12 or by pressing Shift+Ctrl+J.
3. Select the axe tab in the developer tools menu.
4. Select the ANALYZE button.
5. Update the "Issue Type" to All issues. (I don't see where to do this. Is this on axe Pro?)

Summary Panel for City Lights Home page

Review "**Issues Type**" [All issues (49), Violations found (44), Needs review (3), and Best practices (2)] and then select **All issues** found value from the drop-down list.

*Note: when **All issues** found is selected, the issues will be displayed in the order of the drop-down value list.*

Detail Panel Violations

Compare axe violations with WAVE Errors to determine which ones have not already been reported. To quickly compare, use the Print screen key to capture WAVE issues.

1) **Elements must have sufficient color contrast – 2x** - same as WAVE – Color Contrast **3x** – reported under Needs review issue type.
   a) Select the "Highlight" link, which will place a dashed line boarder around the element.
2) <html> element just has a language attribute – 1x – the same as the WAVE Document language missing.
   a) Select the "Learn More" link, which will open a new tab with additional information (Why, How, Guideline and Resources) on the Deque University website.
3) **Images must have alternative text – 33 x** – same as the WAVE Missing alternative text 19x and Spacer image missing alternative text 10x Suspicious link text 4x.
   a) Select the navigation "Next" and "Previous" arrows.
4) **Form element must have label – 1x** - same as the WAVE Missing form label.
5) **Links must have discernible text – 7 x –** left navigation menu and More>> links – same as WAVE.
   a) Select the "Inspect Node" link, which will bring you to the code in your browser's page inspector.
   b) Select the axe tab to go back to the pages results.
   c) Repeat as needed.

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<a href="javascript:location.href='home.html';" onfocus="blur();"><img name="nav_home" src="./img/nav_home.
gif" width="88" height="27" hspace="15" border="0px"></a>

<a href="javascript:location.href='news.html';" onfocus="blur();"><img src="./img/nav_news.gif" name="nav_n
ews" width="90" height="21" hspace="12" border="0px"></a>

<a href="javascript:location.href='tickets.html';" onfocus="blur();"><img name="nav_facts" src="./img/nav_f
acts.gif" width="105" height="23" hspace="9" border="0px"></a>

<a href="javascript:location.href='survey.html';" onfocus="blur();"><img src="./img/nav_survey.gif" name="n
av_survey" width="107" height="32" hspace="8" border="0px"></a>

<a href="news.html" onfocus="blur();"><img src="./img/morearrow.gif" width="48" height="10" alt="" border="
0" onmouseover="this.src='./img/morearrow_a.gif'" onmouseout="this.src='./img/morearrow.gif'" style="vertic
al-align: bottom"></a>

<a href="news.html" onfocus="blur();"><img src="./img/morearrow.gif" width="48" height="10" alt="" border="
0" onmouseover="this.src='./img/morearrow_a.gif'" onmouseout="this.src='./img/morearrow.gif'" style="vertic
al-align: bottom"></a>

<a href="news.html" onfocus="blur();"><img src="./img/morearrow.gif" width="48" height="10" alt="" border="
0" onmouseover="this.src='./img/morearrow_a.gif'" onmouseout="this.src='./img/morearrow.gif'" style="vertic
al-align: bottom"></a>
```

Best practices

Always review axe Best practices, as these may not be reported in the WAVE tool.

1) Document must have one main landmark – 1x – same as the WAVE Alert No Page Regions.
   a) Ensure there is a navigation point to the primary content of the page. If the page
      contains iframe elements, each iframe should contain either no main landmarks or just one.
2) All page content must be contained by landmarks – 1x – same as the WAVE Alert No Page Regions.
   a) Ensure all content is contained within a landmark region, designated with HTML5 landmark elements
      and/or ARIA landmark regions.

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.

axe — Complete the What is….

1st Violations issue

1. What is the Title of issue:
2. What is the WCAG guideline:

1st Best practices issue

1. What is the Title of issue:
2. What is the Why it Matters:

Resources

- Getting Started with an axe Browser Extension - https://www.deque.com/axe/axe-for-web/
- Deque University - https://dequeuniversity.com/rules/axe/3.2
- GitHub - https://github.com/dequelabs/axe-core/blob/master/doc/rule-descriptions.md
- WCAG 2.0 - http://www.w3.org/TR/WCAG20/