



Accessibility Checklist

This document describes the level of conformance of the Smart Sparrow Adaptive eLearning Platform to the W3C's Web Content Accessibility Guidelines 2.0 (WCAG 2.0).

Scope

The Smart Sparrow Student Lesson Viewer functionality has been tested against each guideline using several accessibility tools including:

- WebAIM Wave <http://wave.webaim.org/extension/>
- Google ChromeVox <http://www.chromevox.com/>
- Freedom Scientific JAWS <http://www.freedomscientific.com/Products/Blindness/JAWS>

The checklist includes Level AA guidelines and the WebAim recommendations for each guideline as well as Smart Sparrow's guidance related to achieving that recommendation. [Section 508](#) is, in terms of functionality provided by the Smart Sparrow Lesson Viewer, a subset of WCAG 2.0 Level A guidelines.

Please note that, at this stage, the Smart Sparrow Authoring Tool does not conform to WCAG 2.0 and is not the subject of this checklist. However, where applicable, authoring guidance is provided in order to enable instructors/users to produce accessible content that does conform.

Summary

The Smart Sparrow Student Lesson Viewer generally conforms to all WCAG 2.0 guidelines. However, some components and some non-essential sections in the Lesson Viewer are not yet fully conforming to the guidelines.

Instructors/users are able to provide accessible lessons conforming to the Level A and Level AA Web Content Accessibility Guidelines by omitting the poll input component in their lessons. Instructors are also advised that visual drag and drop plugins like the Annotation plugin cannot be used in lessons that are intended to conform to Level A.

Smart Sparrow aims to achieve full Level AA Web Content Accessibility Guidelines conformance during Q2-2016, at which point existing lessons utilizing the poll component will also comply with these guidelines.

WCAG 2.0 Checklist

Perceivable

Web content is made available to the senses - sight, hearing, and/or touch

Guideline 1.1

Text Alternatives: Provide text alternatives for any non-text content.

[1.1.1 Non-text Content \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text.	Instructors are able to provide alternative text to images except when images are attached to the multichoice component.
✓ Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text.	Images cannot have an empty alt tag; instructors are able to provide a space character instead which provides the same outcome.
✓ Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page.	The platform does not enable specifying a longdesc attribute for an image, but instructors can insert additional text descriptions as well as links.
✓ Form buttons have a descriptive value.	All form buttons have descriptive values.
✓ Form inputs have associated text labels.	All input elements have appropriate labels, except for the slider component and some menu options.
✓ Embedded multimedia is identified via accessible text.	Instructors can add multimedia that provides captions.
✓ Frames are appropriately titled.	Instructors can add a title to an iframe component.

Guideline 1.2

Time-based Media: Provide alternatives for time-based media

[1.2.1 Prerecorded Audio-only and Video-only \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ A descriptive text transcript (including all relevant visual and auditory clues and indicators) is provided for non-live, web-based audio (audio podcasts, MP3 files, etc.).	Smart Sparrow platform integrates to third-party video providers, such as YouTube. Instructors are able to provide transcripts by directly using the functionality of the external tool. Smart Sparrow does not offer video or audio hosting.
✓ A text or audio description is provided for non-live, web-based video-only (e.g., video that has no audio track).	As above.

[1.2.2 Captions \(Prerecorded\) \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ Synchronized captions are provided for non-live, web-based video (YouTube videos, etc.)	See 1.2.1

[1.2.3 Audio Description or Media Alternative \(Prerecorded\) \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ A descriptive text transcript OR audio description audio track is provided for non-live, web-based video	See 1.2.1

[1.2.4 Captions \(Live\) \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
✓ Synchronized captions are provided for all live multimedia that contains audio (audio-only broadcasts, web casts, video conferences, Flash animations, etc.)	See 1.2.1

[1.2.5 Audio Description \(Prerecorded\) \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
✓ Audio descriptions are provided for all video content NOTE: Only required if the video conveys content visually that is not available in the default audio track.	See 1.2.1

Guideline 1.3

Adaptable: Create content that can be presented in different ways (e.g., simpler layout) without losing information or structure.

[1.3.1 Info and Relationships \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ Semantic markup is used to designate headings (<h1>), lists (, , and <dl>), emphasized or special text (, <code>, <abbr>, <blockquote>, for example), etc. Semantic markup is used appropriately.	Authoring Tool supports the use of lists, and other basic formatting.
✓ Tables are used for tabular data. Headings, where necessary, are used to associate data cells with headers. Data table captions and summaries are used where appropriate.	Not applicable to the Student Lesson Viewer; tables are not used in lessons.
✓ Text labels are associated with form input elements. Related form elements are grouped with fieldset/ legend.	All standard input components are associated with a label.

[1.3.2 Meaningful Sequence \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ The reading and navigation order (determined by code order) is logical and intuitive. 	All standard input components conform.

[1.3.3 Sensory Characteristics \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Instructions do not rely upon shape, size, or visual location (e.g., "Click the square icon to continue" or "Instructions are in the right-hand column"). 	Instructors are able to create lessons that conform to this guideline by omitting the poll component.
<ul style="list-style-type: none"> ✓ Instructions do not rely upon sound (e.g., "A beeping sound indicates you may continue."). 	The Smart Sparrow Student Lesson Viewer does not provide any audible cues.

Guideline 1.4

Distinguishable: Make it easier for users to see and hear content including separating foreground from background

[1.4.1 Use of Color \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Color is not used as the sole method of conveying content or distinguishing visual elements. 	No standard components rely solely on color as a distinguishing factor.
<ul style="list-style-type: none"> ✓ Color alone is not used to distinguish links from surrounding text unless the luminance contrast between the link and the surrounding text is at least 3:1 and an additional differentiation (e.g., it becomes underlined) is provided when the link is hovered over or receives focus. 	Links are displayed with a level AAA conforming contrast, including a permanent underline.

[1.4.2 Audio Control \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ A mechanism is provided to stop, pause, mute, or adjust volume for audio that automatically plays on a page for more than 3 seconds. 	The Smart Sparrow Platform does not directly host video or audio files. Instead we integrate to third-party video providers, such as YouTube, which do conform.

[1.4.3 Contrast \(Minimum\):](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Text and images of text have a contrast ratio of at least 4.5:1. 	All text and components are by default displayed with level AAA conforming contrast. Instructors are advised to follow this guideline when choosing icons, images and colours.
<ul style="list-style-type: none"> ✓ Large text (over 18 point or 14 point bold) has a contrast ratio of at least 3:1 	See above.

[1.4.4 Resize text \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ The page is readable and functional when the text size is doubled. 	<p>The Student Lesson Viewer supports consistent zooming beyond 200% without the loss of content or functionality.</p>

[1.4.5 Images of Text \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ If the same visual presentation can be made using text alone, an image is not used to present that text. 	<p>The Student Lesson Viewer does not use any images of text. Instructors are advised not to use images of text in their lessons.</p>

Operable

Interface forms, controls, and navigation are operable

Guideline 2.1

Keyboard Accessible: Make all functionality available from a keyboard

[2.1.1 Keyboard \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ All page functionality is available using the keyboard, unless the functionality cannot be accomplished in any known way using a keyboard (e.g., free hand drawing). 	<p>Students can navigate all input components by using the standard keyboard shortcuts. Special plugins, like the drag and drop annotation plugin, do not comply.</p>
<ul style="list-style-type: none"> ✓ Page-specified shortcut keys and accesskeys (accesskey should typically be avoided) do not conflict with existing browser and screen reader shortcuts. 	<p>The Smart Sparrow Student Lesson Viewer does not override key mappings.</p>

[2.1.2 No Keyboard Trap \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Keyboard focus is never locked or trapped at one particular page element. The user can navigate to and from all navigable page elements. 	<p>All elements and components conform to this guideline.</p>

Guideline 2.2

Enough Time: Provide users enough time to read and use content

[2.2.1 Timing Adjustable \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ If a page or application has a time limit, the user is given options to turn off, adjust, or extend that time limit. This is not a requirement for real-time events (e.g., an auction), where the time limit is absolutely required, or if the time limit is longer than 20 hours... 	<p>The Student Lesson Viewer does not set any time limits. However, Instructors can implement lessons with time limits (or timers) if required or desired by design.</p>

[2.2.2 Pause, Stop, Hide \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Automatically moving, blinking, or scrolling content that lasts longer than 5 seconds can be paused, stopped, or hidden by the user. Moving, blinking, or scrolling can be used to draw attention to or highlight content as long as it lasts less than 5 seconds. 	The Student Lesson Viewer does not display any moving, blinking or scrolling content.
<ul style="list-style-type: none"> ✓ Automatically updating content (e.g., automatically redirecting or refreshing a page, a news ticker, AJAX updated field, a notification alert, etc.) can be paused, stopped, or hidden by the user or the user can manually control the timing of the updates. 	The Student Lesson Viewer does not automatically update any content. However, variables are supported by the Authoring Tool, which enables instructors to embed content that is updatable.

Guideline 2.3

Seizures: Do not design content in a way that is known to cause seizures

[2.3.1 Three Flashes or Below Threshold \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ No page content flashes more than 3 times per second unless that flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red. (See general flash and red flash thresholds) 	The Student Lesson Viewer does not intrinsically display any flashing content. Instructors are encouraged to follow this guideline in their lesson design.

Guideline 2.4

Navigable: Provide ways to help users navigate, find content, and determine where they are

[2.4.1 Bypass Blocks \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ A link is provided to skip navigation and other page elements that are repeated across web pages. 	The main content is marked by an ARIA landmark that allows users with screen readers to jump to the content.
<ul style="list-style-type: none"> ✓ If a page has a proper heading structure, this may be considered a sufficient technique instead of a "Skip to main content" link. Note that navigating by headings is not yet supported in all browsers. 	In addition to the ARIA landmark for the main content, the main content is the second element that receives focus. In relation to the heading structure, please see guideline 1.3.1.
<ul style="list-style-type: none"> ✓ If a page uses frames and the frames are appropriately titled, this is a sufficient technique for bypassing individual frames. 	See guideline 1.1.1.

[2.4.2 Page Titled \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ The web page has a descriptive and informative page title. 	The title is set to the name of the lesson as chosen by the instructor.

[2.4.3 Focus Order \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ The navigation order of links, form elements, etc. is logical and intuitive. 	<p>The order of all links and input components can be navigated sequentially.</p>

[2.4.4 Link Purpose \(In Context\) \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ The purpose of each link (or form image button or image map hotspot) can be determined from the link text alone, or from the link text and it's context (e.g., surrounding paragraph, list item, table cell, or table headers). 	<p>All elements and components conform and ARIA labels are providing additional information where this was deemed helpful to students with screen readers.</p>
<ul style="list-style-type: none"> ✓ Links (or form image buttons) with the same text that go to different locations are readily distinguishable. 	<p>All links and buttons provided by the platform are used consistently and are clearly distinguishable.</p>

[2.4.5 Multiple Ways \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Multiple ways are available to find other web pages on the site - at least two of: a list of related pages, table of contents, site map, site search, or list of all available web pages. 	<p>This is not applicable to the Student Lesson Viewer. Each displayed web page is effectively a step (or 'Screen') in the lesson.</p>

[2.4.6 Headings and Labels \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Page headings and labels for form and interactive controls are informative. Avoid duplicating heading (e.g., "More Details") or label text (e.g., "First Name") unless the structure provides adequate differentiation between them. 	<p>See guideline 1.3.1.</p>

[2.4.7 Focus Visible \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ It is visually apparent which page element has the current keyboard focus (i.e., as you tab through the page, you can see where you are) 	<p>The focus of elements is clearly visible.</p>

Understandable

Content and interface are understandable

Guideline 3.1

Readable: Make text content readable and understandable

[3.1.1 Language of Page \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ The language of the page is identified using the HTML lang attribute (<html lang="en">, for example). 	The language is included in both HTTP headers and the HTML document.

[3.1.2 Language of Parts \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ When appropriate, the language of sections of content that are a different language are identified, for example, by using the lang attribute (<blockquote lang="es">) 	See guidance at 3.1.1. However, mixed language content is not encouraged in the one lesson. If needed, lesson design could lead to separate pathways in the lesson with different languages.

Guideline 3.2

Predictable: Make Web pages appear and operate in predictable ways

[3.2.1 On Focus \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ When a page element receives focus, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user. 	Elements do not lose context when students move the focus onto these elements.

[3.2.2 On Input \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ When a user inputs information or interacts with a control, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user unless the user is informed of the change ahead of time. 	User input does not change the context of a page. Popup windows are only opened on student actions in situation where this can be expected by the student.

[3.2.3 Consistent Navigation \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Navigation links that are repeated on web pages do not change order when navigating through the site. 	The Smart Sparrow Student lesson viewer provides consistently placed navigation controls.

[3.2.4 Consistent Identification \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Elements that have the same functionality across multiple web pages are consistently identified. For example, a search box at the top of the site should always be labeled the same way. 	<p>All elements and components are labeled consistently across each lesson.</p>

Guideline 3.3

Input Assistance: Help users avoid and correct mistakes

[3.3.1 Error Identification \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Required form elements or form elements that require a specific format, value, or length provide this information within the element's label. 	<p>Only the number input component and the date input component require a specific input and both enforce this by restricting the input. Both are labelled to inform the student what type of input is expected.</p>
<ul style="list-style-type: none"> ✓ If utilized, form validation cues and errors (client-side or server-side) alert users to errors in an efficient, intuitive, and accessible manner. The error is clearly identified, quick access to the problematic element is provided, and user is allowed to easily fix the error and resubmit the form. 	<p>Instructors are able to provide feedback for all of the student's submitted responses.</p>

[3.3.2 Labels or Instructions \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ Sufficient labels, cues, and instructions for required interactive elements are provided via instructions, examples, properly positioned form labels, and/or fieldsets/legends. 	<p>In addition to descriptive labels provided by the platform, instructors are able to provide further instructions.</p>

[3.3.3 Error Suggestion \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ If an input error is detected (via client-side or server-side validation), provide suggestions for fixing the input in a timely and accessible manner. 	<p>All input is validated against the instructor's requirements at the time the student submits the answers for a question. The date input component replaces incorrect dates with today's date, which is potentially missed by a student.</p>

[3.3.4 Error Prevention \(Legal, Financial, Data\) \(Level AA\)](#)

RECOMMENDATIONS	GUIDANCE
<ul style="list-style-type: none"> ✓ If the user can change or delete legal, financial, or test data, the changes/deletions are reversible, verified, or confirmed. 	<p>This is not applicable.</p>

Robust

Content can be used reliably by a wide variety of user agents, including assistive technologies

Guideline 4.1

Compatible: Maximize compatibility with current and future user agents, including assistive technologies

[4.1.1 Parsing \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ Significant HTML/XHTML validation/parsing errors are avoided.	The Student Lesson Viewer is based on fully validated HTML code.

[4.1.2 Name, Role, Value \(Level A\)](#)

RECOMMENDATIONS	GUIDANCE
✓ Markup is used in a way that facilitates accessibility. This includes following the HTML/XHTML specifications and using forms, form labels, frame titles, etc. appropriately.	Generally the Student Lesson Viewer complies except for situations described in previous guidelines. Specifically we are advising instructors to omit the poll component when creating highly accessible lessons. This component is planned to be Level AA compliant during 2016.