LEGO Brand Website

Usability Test

Version 2.0

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# 1. Introduction

## 1.1 Purpose

The purpose of this document is to identify areas of concern which may limit the ease of use, overall understanding of, or ability to transfer information to, an end human user of a marketing website for LEGO Corporation. Aspects of ease of use, understanding, or information transfer for the human user are identifiable by human computer interaction through specific tests which have a focus or aspect of usability. Aspects of usability may impact requirements and the development which is pertinent to the user interface and overall navigable flow of the website design. Usability testing aims to identify how easily the end user is capable of accomplishing goals related to the requirements which are implemented and do not necessarily test the functionality of requirements. Aspects pertaining to the testing of usability contained in this test document will include Page Layout, Navigation, Site Search Capability, Use of images, Performance, and Accessibility.

## 1.2 Scope

The usability testing will encompass the LEGO brand website located at www.lego.com. This website is a full production environment. The homepage, products landing page, and shop landing pages will be tested for ease of use pertinent to their intended purpose. The assumed intended purpose of each landing page is as follows:

* Homepage: At a glance latest news, product information, and linking to other pages of the web page.
* Products landing page: An overview of all LEGO sub brands and their associated products with links to each.
* Shop landing page: An overview of all available online purchase LEGO products.

# 2. System Overview

LEGO is a major toy manufacturing company, offering a variety of brands of construction toy sets for a wide age range of children. LEGO sets are shipped and sold around the world in multiple locales and geographic regions. LEGO operates a publicly facing internet website which details the latest product information to end consumers. The website acts as a marketing vehicle and therefore should provide an engaging and friendly user interface which demonstrates the LEGO brand and its associated qualities.

# 3. Test Requirements

## Software Requirements

A Microsoft Windows 10 operating system and the latest version of Google Chrome.

## Hardware Requirements

Desktop form factor: A desktop computer equipped with a keyboard, mouse, display (24” 1080p), and high speed reliable internet connection (20mbps minimum, 90mbps maximum). The desktop computer will operate Microsoft Windows 10 as its base operating system.

# 4. Testing

## 4.1 Test Strategy

The goal of the usability test is to identify objective performance data and task success or failure. Each success or failure should be documented using a checklist, with qualitative feedback where needed further corrective action can be taken to improve overall usability. To effectively identify areas of concern across the LEGO website, tests will be executed by focusing on aspects of a testing checklist. Under controlled conditions, the test subject shall follow the instructions of each item and its identifying factor of testing.

The overall strategy pertaining to the LEGO website can be apportioned to the following categories, as recommended by TechSmith Usability Basics:

* Background: LEGO would like to ensure that their product lines are marketed effectively to a wide range of consumers. Their marketing team has identified an importance for universal usability and ease of use in identifying, learning, and purchasing products from the LEGO website. LEGO would like to ensure that their website provides the shopper with an easy to use platform for exploring their brand.
* Participants: LEGO would like to test among three separate participants of varying age range, focusing on the differences in usability among each. Each participant should be able to perform basic web browsing by visiting and navigating a website of their choosing.
  + The first participant should be aged between 7 and 10 years of age, identifying as a child consumer. The child consumer would like to quickly identify interest in products based upon pictures and product names.
  + The second participant should be aged between 35-45 years of age, identifying as a parent consumer. The parent consumer would like to cross reference information obtained from the child consumer about specific products in the LEGO lineup. In addition, the parent consumer would like to make quick purchases based upon the provided information from the child consumer.
  + The third participant should be aged between 57 to 67 years of age, identifying as a grandparent consumer. The grandparent consumer would like to make quick product purchases based upon provided information from the parent or child consumer.
* Usability Goals: LEGO would like to identify insights which may have not been identified by the original development team of the website which impact the ability of the end user to obtain information and navigate the site.
* Key Points:
  + Are there significant barriers to information relay for the user?
  + Is the layout, content, and imagery visually appealing and engaging to the user?
  + Does the product content provide insight to the user to facilitate a purchase decision?
* Timeline: Testing should be completed in a timely manner in order to meet upcoming quarterly earnings predictions. LEGO wants to shift focus quickly onto their web based assets to continue to lead the market for build it yourself toy sets.

Tasks should be prescribed to the user, providing specific instructions to the end user on main landing pages to identify areas that may impact product information dissemination. Tasks should identify simple actions that can be quickly performed by every test user which result in a Pass or Fail result. An action is defined as simple based upon the initial expected timing of performing the task by test facilitators. When tasks are evaluated, during the findings stage, key evaluation measures should be recorded for later analysis:

* Task Success: Determine if the tester reached the task end goal successfully. If successful, the task result is True. If not successful, the task result is False.
* Time on Task: Record the number of seconds it took to complete the task.
* Satisfaction: Qualitative emotional feedback from the tester post completion of task.
* Problem Areas: Areas where the tester was impeded from completing the intended task.

Facilitation of Testing should involve an open dialog with the tester, providing for them a few simple statements prior to the test session beginning:

* Throughout the process direction to complete a task will not be provided until a time limit of 3 minutes is reached to complete the task.
* If you wish to take a break through the process, please do so and let the facilitator know.
* Speak out loud your thoughts as you discover any impeding elements to accomplishing a task.
* Have fun throughout the process and feel free to ask questions or ask for help.

During the test session, if a task cannot be completed within the provided 3 minute timeframe then further communication by the test facilitator can be provided to the tester with the purpose of creating a dialog about where impediments may exist. This will result in an automatic failure of the task with further qualitative feedback required to determine a root cause of the failure.

Results where a failure or defect occurs will be ranked using an Impact Scale ranging from a 1 to a 5 which will determine the impact the defect has on the usability. The scale is as follows:

**Negative Findings Impact Scale:**

|  |  |
| --- | --- |
| 5 | Severe Impact |
| 4 | Moderate to Severe |
| 3 | Moderate Impact |
| 2 | Minimal to Moderate |
| 1 | Minimal Impact |

Post session analysis should be performed to identify what was observed, the causation of impediments, and to determine possible solutions. Questions should be asked of each identified impediment/failure to determine the impact that the impediment had on the users ability to reach the intended goals.

## 4.2 Test Checklist

### 4.2.1 Page Layout and Visual Design

**Item 1: True / False**

Purpose: Titles of popular product lines are readable on the home page.

Instruction:

1. Navigate web browser to www.lego.com
2. Identify three popular product line names visible on the home page.

Notes: Testing performed on home page.

**Item 2: True / False**

Purpose: The company logo and brand is visible to the user for each page of the website.

Instruction:

1. Navigate web browser to www.lego.com
2. Is the brand name and logo location visible on the home page?
3. Select Products from navigation menu at top of screen.
4. Is the brand name and logo location visible on the product landing page?
5. Select Shop from navigation menu at top of screen.
6. Is the brand name and logo location visible on the shop landing page?

Notes: Testing performed on home page, product landing page, and shop landing page.

**Item 3: True / False**

Purpose: Popover and popup windows do not appear.

Instruction:

1. Navigate web browser to www.lego.com
2. Is there a popover or popup window which requires further input by the user after visiting each page within the scope?

Notes: Testing performed on home page, products page, and shop page.

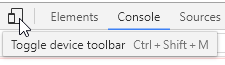
**Item 4: True / False**

Purpose: Website content is readable if width of browser is changed to a mobile layout.

Instruction:

1. Navigate web browser to www.lego.com
2. Is content sizing readable for the user in a mobile size view?

Notes: Testing performed on home page. Utilize mobile view in Developer Tools in Google Chrome by pressing F12 and selecting Device Toolbar mode icon, as seen below:



4.2.2 Navigation

**Item 1: True / False**

Purpose: Products landing page link is easily identifiable.

Instruction:

1. Navigate web browser to www.lego.com
2. Within a 10 second time period record results of user feedback regarding location and recognition of the Products landing page link.

Notes: Testing performed on home page.

**Item 2: True / False**

Purpose: Shop landing page link is easily identifiable.

Instruction:

1. Navigate web browser to www.lego.com
2. Within a 10 second time period record results of user feedback regarding location and recognition of the Shop landing page link.

Notes: Testing performed on home page.

**Item 3: True / False**

Purpose: Navigation links provide hover effect on mouse over.

Instruction:

1. Navigate web browser to [www.lego.com](http://www.lego.com)
2. Within a 10 second time period move your mouse to the navigation links at the top of the screen.
3. Record results of mouse over effect for each link.

Notes: Testing performed on home page.

**Item 4: True / False**

Purpose: Customer Service contact information is easily identifiable.

Instruction:

1. Navigate web browser to www.lego.com
2. Within a 10 second time period record results of user feedback regarding location and recognition of the Customer Service contact information.

Notes: Testing performed on home page.

**Item 5: True / False**

Purpose: Main navigation is consistent throughout the scope of testing.

Instruction:

1. Navigate web browser to www.lego.com
2. Navigate to the Shop landing page by selecting the Shop link.
3. Once at the Shop landing page, identify location of the Home page link and Product page link.
4. Navigate to the Product landing page by selecting Products link.
5. Once at the Product landing page, identify location of the Home page link and Shop page link.

Notes: Testing performed on shop landing page.

### 4.2.3 Site Search Capability

**Item 1:** **True / False**

Purpose: Search results page displays relevant information pertaining to the query entered.

Instruction:

1. Navigate web browser to www.lego.com
2. In the search box located at the top right corner of the page, enter the product line name: Technic
3. Review the result of the search to determine if relevant information pertaining to the Technic product line appear.

Notes: Testing performed on home page and search query page.

**Item 2:** **True / False**

Purpose: Search results page displays number of results available to the user.

Instruction:

1. Navigate web browser to www.lego.com
2. In the search box located at the top right corner of the page, enter the product line name: Technic
3. Review the results page to determine if the total number of results displayed and available are displayed to the user.

Notes: Testing performed on home page and search query page.

**Item 3:** **True / False**

Purpose: Search query can be easily modified and executed in the search results page.

Instruction:

1. Navigate web browser to www.lego.com
2. In the search box located at the top right corner of the page, enter the product line name: Technic
3. Confirm that the search results page displays a search query box.
4. Confirm that the search results page search query box provides user with the ability to execute a new search query.

Notes: Testing performed on home page and search query page.

**Item 4:** **True / False**

Purpose: Search results can be sorted with multiple criteria.

Instruction:

1. Navigate web browser to www.lego.com
2. In the search box located at the top right corner of the page, enter the product line name: Technic
3. Confirm that the search results page displays a selection for sort criteria.
4. Confirm that when alternate sort criteria is selected, a sort is applied to results.

Notes: Testing performed on home page and search query page.

### 4.2.4 Use of Images

**Item 1: True / False**

Purpose: Site images are readable and are of good quality.

Instruction:

1. Navigate web browser to [www.lego.com](http://www.lego.com)
2. Determine if site images provide clear representation and are of sufficient quality to represent relevant information.

Notes: Testing performed on home page.

**Item 2: True / False**

Purpose: Site images provide links to relevant information pertinent in image.

Instruction:

1. Navigate web browser to [www.lego.com](http://www.lego.com)
2. Click on an image, does a click function exist?
3. If a click function exists, is the link relevant to what was pictured in the image?

Notes: Testing performed on home page.

**Item 3: True / False**

Purpose: Site images are not redundant on a single page.

Instruction:

1. Navigate web browser to [www.lego.com](http://www.lego.com)
2. Determine if site images provide a unique purpose and do not crowd the user with redundant information.

Notes: Testing performed on home page.

**Item 4: True / False**

Purpose: Site images are not distracting for the user to perform an action.

Instruction:

1. Navigate web browser to [www.lego.com](http://www.lego.com)
2. Determine if site images distract the user from navigating the website by asking the user to navigate to the Shop landing page.

Notes: Testing performed on home page.

**Item 5: True / False**

Purpose: Site images provide accurate and relevant information.

Instruction:

1. Navigate web browser to www.lego.com
2. Click on the product page link
3. Speak aloud information imparted by images displayed on the product landing page. Ask of the tester the following questions:
   1. Were you able to easily identify which age range was appropriate for each product line displayed through imagery? **True / False**
   2. Was the theme of each product line apparent based upon imagery? **True / False**

Notes: Testing performed on product landing page.

### 4.2.5 Performance (e.g. loading of pages)

**Item 1:** **True / False**

Purpose: Initial load times of static website content in seconds from time URL is entered to the time the homepage loads occurs in less than 3 seconds.

Instruction:

1. Navigate web browser to www.lego.com
2. Provide feedback on the load times associated with visiting the home page to confirm if under 3 second target.

Notes: Use a cleanly loaded browser (clear cookies, history, etc.) present to the user the opportunity to visit the webpage for the first time while recording load time data.

**Item 2: True / False**

Purpose: Load times of static website content in seconds from time home page loads to the time a secondary page is visited occurs in less than 3 seconds.

Instruction:

1. Navigate web browser to www.lego.com
2. Navigate to the product page.
3. Provide feedback on the load times associated with visiting the products page to confirm if under 3 second target.

Notes: Use a cleanly loaded browser (clear cookies, history, etc.) present to the user the opportunity to visit the webpage for the first time while recording load time data.

**Item 3: True / False**

Purpose: Moving images load in less than 5 seconds of page visit.

Instruction:

1. Navigate web browser to www.lego.com
2. Provide feedback on the load times of dynamic and moving images present on the home page to ensure load times of less than 5 seconds.

Notes: Use a cleanly loaded browser (clear cookies, history, etc.) present to the user the opportunity to visit the webpage for the first time while recording load time data.

### 4.2.6 Accessibility and Disability

**Item 1:** **True / False**

Purpose: Site provides users with the ability to change desired language.

Instruction:

1. Navigate web browser to www.lego.com
2. Change the desired language to Spanish (Espanol).

Notes: Testing performed on home page.

**Item 2: True / False**

Purpose: Site provides ability for user to easily tab through items on screen.

Instruction:

1. Navigate web browser to www.lego.com
2. Attempt to navigate through items on screen to select a product by pressing the tab key.

Notes: Testing performed on home page.

**Item 3:**  **True / False**

Purpose: Site font size is legible for users with older age or limited eyesight.

Instruction:

1. Navigate web browser to www.lego.com
2. Identify three product names and record them for review after testing is completed.

Notes: Testing performed on home page. Test is ideal for older age tester.

**Item 4: True / False**

Purpose: Site images provide proper alternate tags.

Instruction:

1. Navigate web browser to www.lego.com
2. Determine if alternate tags of images are present and display useful descriptions by performing a brief mouse over action of each image.

Notes: Testing performed on home page.

## 4.3 Usability Test Findings

### 4.3.1 Page Layout and Visual Design

**Item 1:**

Purpose: Titles of popular product lines are readable on the home page.

Findings:

* Result: True
* What was done: Home page was visited and scrolled vertically to view all content.
* What was found: Titles are used in conjunction with product images to highlight unique brand names. Titles are displayed both as images to differentiate product lines with unique branding and as textual titles.
* Positives: Redundancy of titles in images and text provides additional readability for product titles. Difference in color of titles provides intuitive link action for the user. Image banner displays product titles in similar location for each loaded image.
* Negatives: No readability issues were found pertaining to Product titles.
* Impact Scale of Negatives: None

**Item 2:**

Purpose: The company logo and brand is visible to the user for each page of the website.

Findings:

* Result: True
* What was done: Logo was identified across home, product, and shop landing pages.
* What was found: Logo appears in upper left corner of layout throughout home, product, and shop landing pages.
* Positives: Logo is consistent in size, coloration, shape, and position throughout each page.
* Negatives: On home page, when logo is clicked, no action occurs. On products page, when logo is clicked, a navigation menu appears.
* Impact Scale of Negatives: 3 Moderate Impact related to Navigation Menu

**Item 3:**

Purpose: Popover and popup windows do not appear.

Findings:

* Result: False
* What was done: Home page visited, products page visited, and shop page visited.
* What was found: After clicking on the Shop page, a popover message appeared which alerted the user that they were leaving the LEGO website and visiting the LEGO Shop Website.
* Positives: No popover messages appeared on the home page or products page. Popover message for Shop page provided message that only users of 18 years or older were able to purchase products on the Shop site.
* Negatives: Popover message occurs at every instance of clicking the Shop links, even if acknowledged before by the user. Popover message may confuse some users and may be unnecessary. The text of the popover message is quite small and difficult to read.
* Impact Scale of Negatives: 2 Minimal to Moderate Impact related to Shop Navigation

**Item 4:**

Purpose: Website content is readable if width of browser is changed to a mobile layout.

Findings:

* Result: True
* What was done: Mobile view mode used in Google Chrome to view home page as emulated on a common smart phone device at 400 x 863 pixel resolution.
* What was found: Overall readability is good. Navigation menu and search bar are visible. Content found on desktop sized site is consistent with content viewed on the mobile site.
* Positives: Content titles, text, images are readable and fit the screen width appropriately. Navigation menu displays a down arrow which provides some intuitiveness for the user to explore other pages. Content is boxed into appropriately sized spaces and can be viewed easily by scrolling.
* Negatives: Mobile layout requires user to scroll significantly to see all content of the home page.
* Impact Scale of Negatives: 1 Minimal Impact – Scrolling is easy and does not interfere with linking along right side of content.

**Summary and Conclusion**

The page layout, content, images, and textual items are all generally consistent and follow design principles commonly seen on other websites. Logo, navigation, search, and content all appear in areas where users typically expect to view them; Upper left, upper, upper right, and lower half of display, respectively.

The only moderate impact impediment found was with the use of a popover message which alerts the user and asks for input to confirm leaving the LEGO site and to enter the LEGO shop site. The popover message text is quite small and difficult to read and may confuse some users.

The visual design is rich with images that complement the text. Overall, the design sometimes seems quite busy with a lot of usage of patterns and moving imagery. This may impact the usability of the site and the users ability to find specific information. However, the impact of this finding is minimal.

4.3.2 Navigation

**Item 1:**

Purpose: Products landing page link is easily identifiable.

Findings:

* Result: True
* What was done: Home page of website visited. Layout reviewed for navigation elements.
* What was found: Products link is clearly visible at the top header of the website next to other relevant links.
* Positives: Products link uses a combination of text and imagery to differentiate from other links on the site.
* Negatives: No impediments were found pertaining to the identification of the Product link.
* Impact Scale of Negatives: None

**Item 2:**

Purpose: Shop landing page link is easily identifiable.

Findings:

* Result: True
* What was done: Home page of website visited. Layout reviewed for navigation elements.
* What was found: Shop link is clearly visible at the top header of the website next to other relevant links.
* Positives: Shop link uses a combination of text and imagery to differentiate from other links on the site.
* Negatives: No impediments were found pertaining to the identification of the Shop link.

Impact Scale of Negatives: None

**Item 3:**

Purpose: Navigation links provide hover effect on mouse over.

Findings:

* Result: True
* What was done: Home page of website visited. Navigation reviewed for hover effect.
* What was found: Hover effect appears on mouse over, producing a change in the image and textual elements of each navigation link.
* Positives: Hover effect is apparent, smooth, and responds in a similar manner for each link in the navigation bar.
* Negatives: No impediments were found pertaining to the hover effect.
* Impact Scale of Negatives: None

**Item 4:**

Purpose: Customer Service contact information is easily identifiable.

Findings:

* Result: False
* What was done: Home page of website visited. Entire length of website reviewed for contact information.
* What was found: Contact information links are listed in small sized text at the bottom of the webpage in the footer section.
* Positives: Contact information is listed.
* Negatives: Information is difficult to locate and does not appear in more than one location. Information is not readily available to the user unless they follow a link. Links to the information are in very small text size with a light grey color, making readability difficult for users with poor vision.
* Impact Scale of Negatives: 4 Moderate to Severe Impact – Affects user ability to identify critical information pertinent to the company representing the website.

**Item 5:**

Purpose: Main navigation is consistent throughout the scope of testing.

Findings:

* Result: False
* What was done: Home page, products page, and shop page are visited.
* What was found: Navigation layout and functionality differs from page to page. Home page represents navigation links in horizontal text bar. Products page represents navigation links in a somewhat hidden drop down menu. Shop navigation has differing language for links than that of the home and products page.
* Positives: Navigation menu appears at the header area of the page. Links are in large text.
* Negatives: Navigation is inconsistent across the website, providing users with differing interactions depending on what page they are on, despite many of the links pointing to similar pages. Shop page has different links inconsistent with the home and products page.
* Impact Scale of Negatives: 5 Severe Impact – Greatly reduces usability of navigating the website. Creates a disjointed navigation experience for the user.

**Summary and Conclusion**

The navigation design, links, text, and images are large and clear in the header. Footer navigation is small and difficult to read due to light grey color.

Overall the navigation feels disjointed and inconsistent from page to page. Users must adapt to multiple styles throughout the site across the home page, products page, and shop page. In addition, critical information like customer service contact information is difficult to locate and is not provided in multiple locations throughout the site.

### 4.3.3 Site Search Capability

**Item 1:**

Purpose: Search results page displays relevant information pertaining to the query entered.

Findings:

* Result: True
* What was done: “Technic” search query entered on home page search query box.
* What was found: Query results displayed relevant product information pertinent to the Technic line of products.
* Positives: Large banner appears on search results page displaying product line logo. Products are arranged with pricing and images.
* Negatives: No impediments were found related to the relevance of search query results.
* Impact Scale of Negatives: None

**Item 2:**

Purpose: Search results page displays number of results available to the user.

Findings:

* Result: True
* What was done: “Technic” search query entered on home page search query box.
* What was found: Query results page displayed number of available results, paginated results, and results related to Shop and Play categories.
* Positives: Results were paginated and total number of available results were displayed in a clear and consistent manner.
* Negatives: No impediments were found related to the results count of search query results.
* Impact Scale of Negatives: None

**Item 3:**

Purpose: Search query can be easily modified and executed in the search results page.

Findings:

* Result: True
* What was done: Search query executed from home page. Search results page loaded. Search query executed from Search results page.
* What was found: Search results page displays large search bar at the top of the results listing. The search bar is functional and allows the user to easily alter the query.
* Positives: Search bar is clearly visible and provides user the ability to easily execute a different search.
* Negatives: Search bar is not prefilled with previous/current search query.
* Impact Scale of Negatives: 1 Minimal Impact – The entered query is displayed just below the search bar and appears in bold text, reminding the user of the query entered.

**Item 4:**

Purpose: Search results can be sorted with multiple criteria.

Findings:

* Result: True
* What was done: “Technic” search query entered on home page search query box. Search query sort options tested.
* What was found: Query results can be sorted using a drop down menu with the following options available to the user: Relevance, Newest, Price Low to High, Price High to Low, Rating, and Name. Sorts apply to the query listing appropriately without a full page refresh.
* Positives: Search query results can be sorted among a wide range of options. Sorts apply with appropriate action according to their labeled intention.
* Negatives: Non impediments were found related to the Sort capability of the search query results page.
* Impact Scale of Negatives: None

**Summary and Conclusion**

Overall the search functionality of the LEGO site achieved all usability tests and presented exceptional capability to speedily display relevant information. The search results page layout is intuitive and readable, taking full advantage of a wide variety of sorting and pagination functionality. Results are displayed with large, readable text and images relevant to the listed product information and search query.

The only impediment found was with the automatic pre-population of the previous search query in the new search query box on the search results page. However, the query results page displays in large bold font the query executed beforehand by the user.

### 4.3.4 Use of Images

**Item 1:**

Purpose: Site images are readable and are of good quality.

Findings:

* Result: True
* What was done: Home page visited, images reviewed for readability and quality.
* What was found: Images are of high quality and readability, presenting product information clearly to the user.
* Positives: Images meet a good balance of high quality and low file size.
* Negatives: Some images involve movement which could present a readability issue for some users.
* Impact Scale of Negatives: 1 Minimal Impact – The web is a multimedia place, where modern websites utilize engaging content and moving imagery to captivate and draw visitors.

**Item 2:**

Purpose: Site images provide links to relevant information pertinent in image.

Findings:

* Result: True
* What was done: Home page visited, variety of images clicked pertinent to products to discern relevance of product information with those displayed in the images.
* What was found: Links to product information is relevant to the images displayed.
* Positives: Site content is accurate, images engage the user to perform an action and discover more about the products. Linking is intuitive in existence.
* Negatives: No impediments were discovered pertaining to the linking of images.
* Impact Scale of Negatives: None

**Item 3:**

Purpose: Site images are not redundant on a single page.

Findings:

* Result: True
* What was done: Home page visited. Images reviewed and compared to determine purpose of each image and to ensure lack of redundancy.
* What was found: Images are unique and present the user with relevant, individual information pertinent to the wide range of products on the LEGO site.
* Positives: Images are unique and use a wide variety of color and vibrancy as to be apparent in serving their own intended purpose.
* Negatives: No images were found to be redundant or unnecessary.
* Impact Scale of Negatives: None

**Item 4:**

Purpose: Site images are not distracting for the user to perform an action.

Findings:

* Result: True
* What was done: Home page visited. Images reviewed for elements of distraction or impediment for a user to perform an action like navigation through the site.
* What was found: Images provide an engaging element for the user and do not distract the user from performing actions. Many of the images are static, some images involve movement which may distract some users.
* Positives: Images are engaging, vibrant, and overall do not impede the user from performing other actions.
* Negatives: Some movement in images may be distracting to users.
* Impact Scale of Negatives: 1 Minimal Impact – Movement in images is used sparingly and provides an engaging user experience.

**Item 5:**

Purpose: Site images provide accurate and relevant information.

Findings:

* Result: True
* What was done: Product page reviewed for image ability to display relevant information. Images reviewed for product information including appropriate age range and theme of product line.
* What was found: Product page displays product lines as individual tiled images with each product line brand displayed accurately. Images differentiate with a theme but do not provide information pertaining to the appropriate age range of the product line.
* Positives: Images are accurate, relevant, and display product information with enough variance for a user to easily identify differences based upon product theme.
* Negatives: Images do not display age related information for the products.
* Impact Scale of Negatives: 1 Minimal Impact – This impediment is more specific to the scope of the LEGO site testing and not usability testing. However, it may be helpful for additional information to be displayed in the product landing page listing through the use of imagery including product line age range.

**Summary and Conclusion**

The site uses images heavily to impart product information to the visitor. Image use is engaging, vibrant, and works in most cases to improve the usability of the site as related to navigation, information gathering, and readability. The home page uses movement in images to engage the user, which may be distracting for some users.

### 4.3.5 Performance (e.g. loading of pages)

**Item 1:**

Purpose: Initial load times of static website content in seconds from time URL is entered to the time the homepage loads occurs in less than 3 seconds.

Findings:

* Result: True
* What was done: Home page loaded in Incognito window of Google Chrome with Developer Tools Network recording started.
* What was found: Total load time of 1.96 seconds.
* Positives: Fast response from the server produced all html, css, javascript, and images with quick communication.
* Negatives: Relatively heavy load of 5.6 MB of content.
* Impact Scale of Negatives: 1 Minimal Impact – With increased speed on land and mobile internet connections, a load of 5.6 MB is negligible.

**Item 2:**

Purpose: Load times of static website content in seconds from time home page loads to the time a secondary page is visited occurs in less than 3 seconds.

Findings:

* Result: True
* What was done: Home page loaded in Incognito window. Google Chrome with Developer Tools Network recording started followed by navigation to Product page.
* What was found: Total load time of 1.03 seconds.
* Positives: Fast response from the server produced all html, css, javascript, and images with quick communication.
* Negatives: No negatives found in performance of loading Product page.
* Impact Scale of Negatives: None.

**Item 3:**

Purpose: Moving images load in less than 5 seconds of page visit.

Findings:

* Result: True
* What was done: Home page loaded in Incognito window of Google Chrome with Developer Tools Network recording started.
* What was found: Total load time of 1.96 seconds.
* Positives: Fast response from the server produced all html, css, javascript, and images with quick communication.
* Negatives: Relatively heavy load of 5.6 MB of content due to large moving image files.
* Impact Scale of Negatives: 1 Minimal Impact – With increased speed on land and mobile internet connections, a load of 5.6 MB is negligible.

**Summary and Conclusion**

The performance of the site is appropriate for the standards of today’s high speed internet connections. Although the site is heavy in imagery and front end javascript code execution, the site responds in most scenarios within 2 seconds on a wireless broadband home internet connection. Modern mobile connections are now even faster than home broadband wireless connections. The site strikes a good balance between heavy imagery and good load times.

### 4.3.6 Accessibility and Disability

**Item 1:**

Purpose: Site provides users with the ability to change desired language.

Findings:

* Result: True
* What was done: Home page visited. Location of language picker discovered. Language modified to Spanish. Content briefly reviewed for accuracy.
* What was found: Site provides a drop down menu of available languages by displaying a graphic image of flags where nationality relates. The language change occurs quickly and provides user with ease to move back to the original language. In addition, the site automatically attempts to choose the best language for the user based upon geographic location information.
* Positives: Wide range of language selection, easy to find, consistently located menu, graphical selection of languages.
* Negatives: No impediments were identified in the accessibility of multiple language options.
* Impact Scale of Negatives: None

**Item 2:**

Purpose: Site provides ability for user to easily tab through items on screen.

Findings:

* Result: True
* What was done: Home page visited. Tab pressed multiple times through each element on screen.
* What was found: Tab works to identify all items on the page including images and links.
* Positives: Tab functionality works.
* Negatives: None
* Impact Scale of Negatives: None

**Item 3:**

Purpose: Site font size is legible for users with older age or limited eyesight.

Findings:

* Result: False
* What was done: Home page reviewed for font size.
* What was found: Overall, the header and body content sections achieve ease of readability with large and clear text. Footer font size is small and difficult to read.
* Positives: Most header and body content information is easily readable.
* Negatives: Footer content is small and difficult to read.
* Impact Scale of Negatives: 3 Moderate Impact – Users seeking information in the footer will have difficulty at any level of eyesight capability.

**Item 4:**

Purpose: Site images provide proper alternate tags.

Findings:

* Result: False
* What was done: Home page reviewed for mouse over alternate tags.
* What was found: Not all images used alternate tags on mouse over.
* Positives: Images in the Shop section had simple alternate tags, like “Buy Now”.
* Negatives: Alternate tags missing on many elements first visible to the user in the body content section.
* Impact Scale of Negatives: 4 Moderate to Severe Impact – Users who require alternate tags to navigate amongst content of the home page may have difficulty differentiating the vast content which is visible to users who do not require alternate tags.

**Summary and Conclusion**

Overall the site is highly accessible for non blind users. The site is easy to read, using large text size. The site features a wide range of languages to suit international visitors. The site can be tabbed through and navigated with relative ease. However, there is a large amount of content on a single page. This leads into the issue of alternate tags and the heavy use of images, which may present difficulty for users who are not able to browse the website using eyesight.

### 4.3.7 Overall Summary and Conclusion

The LEGO.com website represents an excellent example of striking a balance between usability and modern engagement through multimedia by utilizing imagery, large text, and responsive content supporting a wide range of device types. Moderately to Severely significant issues arose with the use of images and their lack of alternate tags as related to accessibility. Moderately significant usability issues arose in the consistency of navigation, where navigation menu functionality changed between the home page and the products page. An additional Moderately significant usability issue arose related to the footer content and readability of links to contact information. In addition, the disconnect between the core site and the shop site presents a disjointed and confusing experience that may need to be addressed. Minimally significant issues included the use of heavy moving images which lead to large transfers of data, which could affect some mobile users who have a poor connection to the internet.

The LEGO site represents an international business and is packed with a wide range of content. It achieves a moderately high level of usability when considering the vast amount of content displayed to the user. Features including a strong search capability, strong multi language support, and communicative imagery all provide positive impact for the overall usability of the site. Simple adjustments to the navigation and flow of the site would prove to be useful and would alleviate some confusion for users who would like to move directly from the product research process to the buying, ordering, and customer service process.

# 5. Assumptions and Constraints

## Assumptions

The webpage is operational and free of significant errors which prevent the user from navigating.

## Constraints

There are no known constraints.

# 6. References

TechSmith, Inc. (n.d.) Usability Testing Basics.

Nick Jenkins. (2008). A Software Testing Primer. An Introduction to Software Testing. Pg. 18.