



# Seattle Tilth Site Card Sorting Test

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## Overview

In our investigation of the Seattle Tilth website ([www.seattletilth.org](http://www.seattletilth.org)), our analysis team performed a competitive analysis and a heuristic analysis. These were done to determine the Seattle Tilth website's effectiveness in positioning relative to other non-profits, and to evaluate how well the site's design advances the organization's mission and goals.

Concerns arose in the heuristic analysis that led us to focus on the clarity of the terminology employed in the site's navigation. Our initial impression was that the terms used for grouping topics and for navigation were not universally understood and poorly organized. The conclusion reached after reviewing these designs was that a card sort was needed to get a clearer overview of how to arrange the navigation terms.

## Card Sorting Explained



*Figure 1. A typical card sort test.*

A card sort test is performed to help assess how well a web site's navigation specifically, and its information architecture in general, makes clear distinctions to

the general public. Vague or clever terms in the navigation can turn an interesting site into an unsatisfactory experience. The information architecture of the site can also detrimentally affect the user's experience.

Both issues are reflective of the overall organization of the site during its initial design stages. A coherent design whose best conceptual foundations are adhered to throughout the design process is of primary importance. Designs will invariably change in the process, but keeping to those foundations ensures that design and scope creep do not damage a good usable design.

The card sort test is similar to a usability test but narrows the focus to how terms used for grouping and navigation are arranged. The goal is to get results from a cross-section of the website's audience demographic. These "street-level" results are considered valuable because the participants are not involved in the design process and have a varying familiarity with site conventions based primarily on their experience as average web users.

Two primary reasons for the necessity for this kind of testing is institutional bias on the part of the site stakeholders and on the part of the design team. Stakeholders tend to organize data from an internal bias that does not reflect how the website visitor might use the information. Internal logic dictates organizational systems that tend to streamline procedures involving personnel deeply familiar with the information. The typical user may know nothing about inside information or procedures.

Design bias can creep into a site's structure in a similar fashion. Web designers may have taken part in the design of hundreds of sites. This experience can breed presumptions on what is assumed by the user, what is known by the public, and what terms are universal. Clutter and confusion can also slip into the design as different players add their pet features.

The first step in constructing a card sort test is to do a content inventory of the website. The content inventory lists all the site's pages and their links. This provides a supply of terms to use in the test in addition to the existing navigation and grouping terms.

| Seattle Tilth Card Sorting Report |                            |   |
|-----------------------------------|----------------------------|---|
| Content Inventory                 |                            |   |
| Page Level                        | Page Title                 | URL   |
| <b>Home Page</b>                  |                            |   |
| G                                 | Welcome to Seattle Tilth!  | <a href="http://www.seattletilth.org/">http://www.seattletilth.org/</a>   |
| <b>Utility Nav</b>                |                            |   |
| G                                 | Pressroom                  | <a href="http://www.seattletilth.org/press">http://www.seattletilth.org/press</a>   |
| G                                 | Donate                     | <a href="https://seattletilth.secure.nonprofitsoapbox.com/donate-to-seattle-tilth">https://seattletilth.secure.nonprofitsoapbox.com/donate-to-seattle-tilth</a>                     |
| G                                 | Site Map                   | <a href="http://www.seattletilth.org/sitemap">http://www.seattletilth.org/sitemap</a>   |
| G                                 | Accessibility              | <a href="http://www.seattletilth.org/accessibility-info">http://www.seattletilth.org/accessibility-info</a>   |
| G                                 | Contact Us                 | <a href="http://www.seattletilth.org/about/contactus">http://www.seattletilth.org/about/contactus</a>   |
| G                                 | Search                     | <a href="http://www.seattletilth.org/search_form">http://www.seattletilth.org/search_form</a>   |
| <b>Main Nav</b>                   |                            |   |
| G                                 | Learn                      | <a href="http://www.seattletilth.org/learn">http://www.seattletilth.org/learn</a>   |
| G                                 | About Us                   | <a href="http://www.seattletilth.org/about">http://www.seattletilth.org/about</a>   |
| G                                 | Get Involved               | <a href="http://www.seattletilth.org/get-involved">http://www.seattletilth.org/get-involved</a>   |
| G                                 | Events                     | <a href="http://www.seattletilth.org/special_events">http://www.seattletilth.org/special_events</a>   |
| G                                 | Our Community              | <a href="http://www.seattletilth.org/our-community">http://www.seattletilth.org/our-community</a>   |
| <b>Sidebar Nav</b>                |                            |   |
| G                                 | Classes for Adults         | <a href="http://www.seattletilth.org/learn/kids/learn/adultclasses">http://www.seattletilth.org/learn/kids/learn/adultclasses</a>   |
| G                                 | Kids & Teens Programs      | <a href="http://www.seattletilth.org/learn/kids/kids-and-families">http://www.seattletilth.org/learn/kids/kids-and-families</a>   |
| G                                 | May Edible Plant Sale      | <a href="http://www.seattletilth.org/community/kitchensnw/special_events/mayedibleplantsale">http://www.seattletilth.org/community/kitchensnw/special_events/mayedibleplantsale</a> |
| G                                 | Seattle Tilth CSA          | <a href="http://www.seattletilth.org/about/stcsa">http://www.seattletilth.org/about/stcsa</a>   |
| G                                 | Permaculture Design Course | <a href="http://seattletilth.nonprofitsoapbox.com/upcoming-events/event/449">http://seattletilth.nonprofitsoapbox.com/upcoming-events/event/449</a>                                 |
| G                                 | Just Garden                | <a href="http://www.seattletilth.org/learn/kids/justgarden">http://www.seattletilth.org/learn/kids/justgarden</a>   |
| G                                 | Donation                   | <a href="https://seattletilth.secure.nonprofitsoapbox.com/donate-to-seattle-tilth">https://seattletilth.secure.nonprofitsoapbox.com/donate-to-seattle-tilth</a>                     |
| G                                 | Become a Member            | <a href="http://www.seattletilth.org/get-involved/membershippagesstandard">http://www.seattletilth.org/get-involved/membershippagesstandard</a>                                     |

Figure 2. Seattle Tilth website content inventory.

We derived 30 terms from both the content inventory and the structure of the Seattle Tilth website home page.

The terms we chose to test are:

- |                               |   |  |
|-------------------------------|---|--|
| 1. Welcome to Tilth<br>- Home | 13. Seattle Tilth CSA                         | 23. Urban Livestock                              |
| 2. Donate                     | 14. Become a<br>Member                        | 24. Teacher Training<br>and intensive<br>Classes |
| 3. Contact Us                 | 15. The Garden<br>Hotline                     | 25. After School<br>Cooking Clubs                |
| 4. Search                     | 16. Blog                                      | 26. Permaculture<br>and Design<br>Course         |
| 5. Learn                      | 17. Pressroom                                 | 27. Email Signup                                 |
| 6. About Us                   | 18. Volunteering                              | 28. Internships                                  |
| 7. Get Involved               | 19. Directions to<br>Seattle Tilth<br>Gardens | 29. Water Smart<br>Program                       |
| 8. Events                     | 20. History of the<br>Tilth Movement          | 30. Seattle Youth<br>Garden Works                |
| 9. Our Community              | 21. Garden Store                              |  |
| 10. Classes for<br>Adults     | 22. Farms and<br>Gardens                      |  |
| 11. Kids and Teen<br>Programs |   |  |
| 12. May Edible Plant<br>Sale  |   |  |

A card sort is prepared by writing or printing website terms on 3x5 index cards with serial numbering on the back of the card. Opinions vary, but choosing between approximately thirty and sixty terms used in the website seems to be a number

that most experts can agree on. A number of identical sets of cards are made so multiple participants can perform the test at the same time.

Participants are chosen from a site's typical demographic group or groups. These participants are invited either by mail or online that they have been selected for the test. A time and venue are named, an estimate of the length of time needed for testing and a method to respond to the invitation is provided. Incentives such as food, software, payment, or other means are often employed and mentioned in the invitation to encourage participation.

The testing venue is set up with multiple testing tables so a number of people can test at the same time. Monitors provide an introduction of the test to the participants. Test participants are presented with one set of the prepared cards.

The test itself consists of having the test subjects sort the cards in groupings that are logical to them. The participants proceed to sort and stack the cards. The monitors can answer test subject's questions but must be careful not to lead the subject to any particular solution. Depending on the number of terms, the test can take from twenty minutes up to an hour.

Once the test is completed, the participant is thanked for their time, and given the incentive, if provided. The monitors or testers compile the results of that test episode. The deck of index cards is shuffled to eliminate any bias and used for another participant.

When all the participants have completed the test, the analysis team records the results and compiles them in a number of ways that help to expose any patterns emerging from the sorts. These are developed into charts that make the results clear to the team members and the stakeholders.

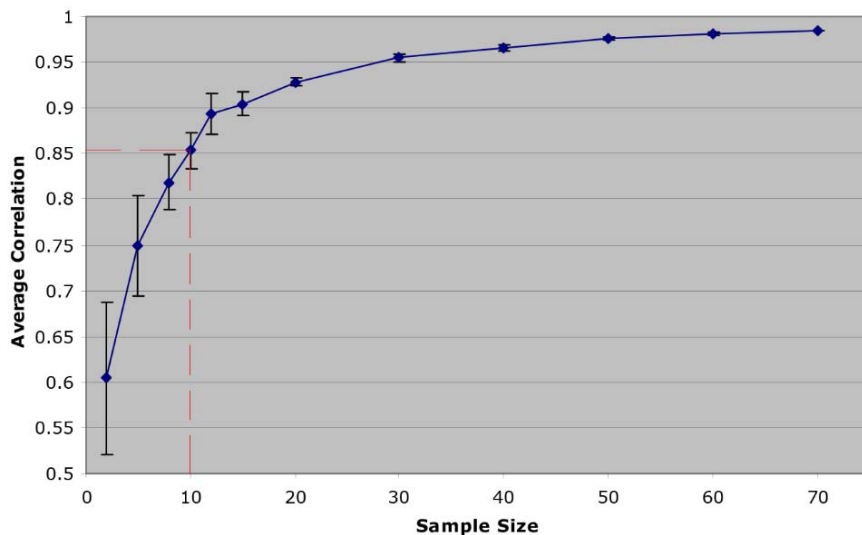
This is a critical step. Suggesting changes such an essential element as the site navigation and organization can often result in pushback by stakeholders. Having material at hand that clearly conveys the results of the test can help to allay any reluctance to proceed with proposed changes. This is data that reflects the opinions and logic of the site's own users and often reveals design shortcomings and biases. This is the power of a card sort.

## The Seattle Tilth Card Sort

Due to a number of constraints, we have deviated from the typical card sort in a number of ways. Foremost among the constraints to consider was the budget for the test. Since we are students and the test was performed within the class environment, there were no funds allocated for the test. With this in mind, we made changes we felt would still allow the test to be performed without compromising the results in any significant way.

The principle decision was that rather than employ the usual method with physical cards, we opted to employ the online card sorting software from Optimal Sort ([www.optimalworkshop.com/optimalsort](http://www.optimalworkshop.com/optimalsort)). Whether to perform a card sort with physical cards or an online sort is a hot debate topic among UX designers. There are numerous pros and cons to each approach.

Benefits derived from using online card sorting were a dramatic decrease in administrative duties, speed of preparation, and speed of testing, and automatic compilation of the results using Optimal Sort's data analysis software.



*Figure 3. Tullis & Wood sample correlation chart with ten participant correlation line in red added. (Tullis & Wood, 2004)*

Any cons to the online approach should be addressed, however. One of main complaints about using the online approach is the lack of feedback from the test participants. Whether they arise from participants' confusion arising from the sorting, or take the form of general comments, this feedback can prove important

to understanding the results. After all, the point of the card sort is to obtain the average person's opinion. Some aspects of those opinions are lost with the online method.

Optimal Sort's trial version also restricts the number of sorting terms to thirty. Another limit imposed by the software was a maximum of ten test participants. According to Jakob Nielsen, fifteen test participants is the ideal number to get an effective test result correlation of 0.90 (Nielsen, 2004). He points out that by testing more than fifteen subjects, diminishing returns begin to set in.

By data presented by Tullis and Wood, the data from ten subjects will result in a data correlation of slightly greater than 0.85 (Tullis & Wood, 2004), which we felt was adequate for our test given that its correlation to the 0.90 target is 0.94.

There was no invitation to users of the Seattle Tilth site. There was no introduction to the test by a monitor, indeed there was no monitoring at all. It was felt that since the students were already familiar with card sorting, this would not present an obstacle.

The most potentially serious deviation was that the test subjects were not selected from the websites typical demographic. The students have experience in logical groupings of navigational terms in a generic sense and know to avoid unconventional naming schemes. It was thought that since the students already had a good background in web design and a familiarity with the card sorting process, these factors would somewhat mitigate the lack of true demographic sourced data.

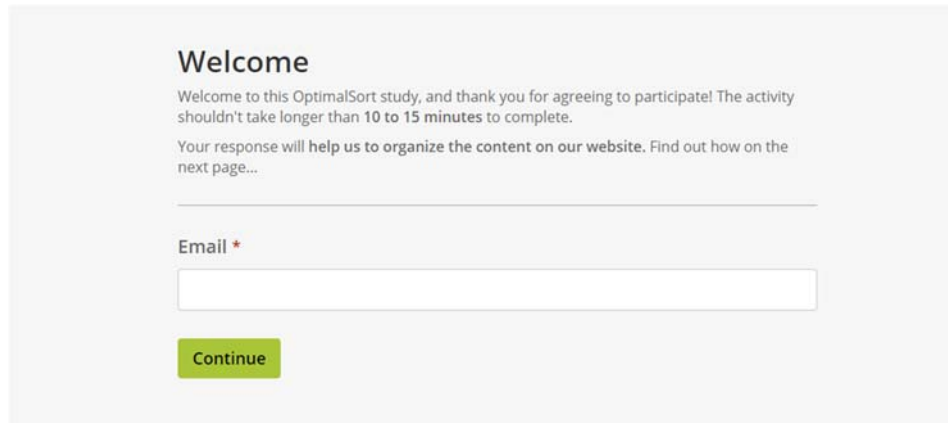
Furthermore, since the students had for the most part never seen the sites being tested, it was thought this would remove some bias from site familiarity from the results. Often test subject's familiarity with a site can influence them to organize terms in already existing patterns. Altogether, we considered the shortcomings of the online approach were outweighed by the advantages, and would not result in a significant deterioration of the data.

Test results were compiled in multiple formats by the Optimal Sort software. Test results sorted by card terms and categories were provided, as well as a Similarity Matrix and dendrograms, also called tree graphs, because they resemble the structure of a tree. Optimal Sort offers SynCap V3 data analysis software for further processing of the test data. Deploying this software we created an Items (Terms) vs. Groups chart, much like the Similarity Matrix (see Card Sort Test Results).

These reporting tools were used in the analysis of the test data. The analysis team's main goal was to determine if the test data pointed to clear groupings of the terms in the test. This information would be used to compare it to the existing groupings and navigation on the site and to provide potential suggestions for improvement.

## Card Sorting with Optimal Sort

The participant using the Optimal Sort is greeted with a screen that requires the entry of their email address which is used as an identifier in the data results.



**Welcome**

Welcome to this OptimalSort study, and thank you for agreeing to participate! The activity shouldn't take longer than 10 to 15 minutes to complete.

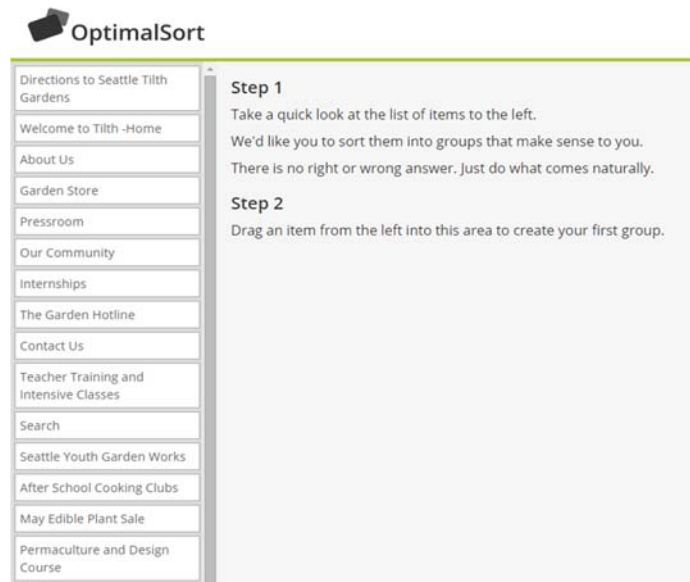
Your response will help us to organize the content on our website. Find out how on the next page...

Email \*

Continue

Figure 4. Optimal Sort greeting screen.

Once the test participant is logged in, they see the sorting screen with basic instructions on how to proceed.



**OptimalSort**

- Directions to Seattle Tilth Gardens
- Welcome to Tilth -Home
- About Us
- Garden Store
- Pressroom
- Our Community
- Internships
- The Garden Hotline
- Contact Us
- Teacher Training and Intensive Classes
- Search
- Seattle Youth Garden Works
- After School Cooking Clubs
- May Edible Plant Sale
- Permaculture and Design Course

**Step 1**

Take a quick look at the list of items to the left. We'd like you to sort them into groups that make sense to you. There is no right or wrong answer. Just do what comes naturally.

**Step 2**

Drag an item from the left into this area to create your first group.

Figure 5. Optimal Sort sorting screen with instructions.

The participant then begins the sort by dragging terms from the column on the left into the work area on the right. They can begin linking terms in groups or simply group them in general areas until patterns and relationships become apparent.

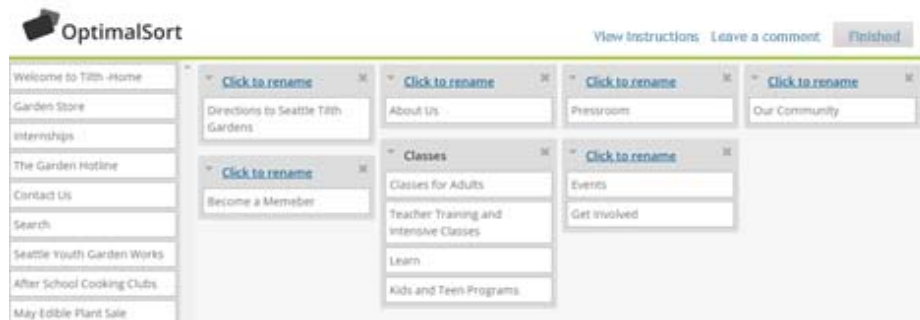


Figure 6. Optimal Sort sorting screen during a sort.

*Note the categories users can set at the top of the blue boxes.*

Once some relationships are clear to the user, they can formally group them and give the groups names. The participant can rename the groups as many times as necessary. Terms in groups can be easily removed and added to another group. Once the participant is satisfied that the terms have been sorted properly, they can click on the Finished button at the top right of the page.

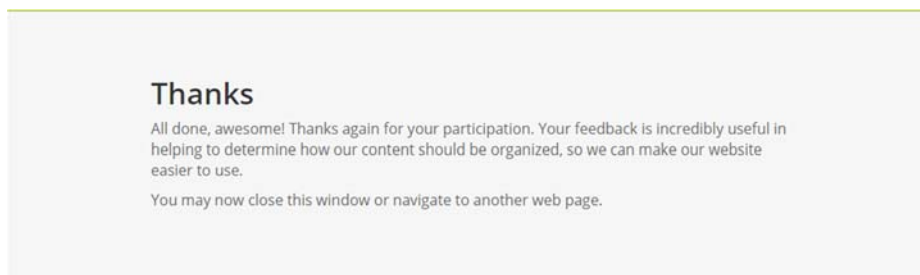


Figure 7. Optimal Sort thank-you page.

Now that the user is finished they are greeted with a thank you page and exit the website.



## Card Sort Test Results

The card sort test results are shown on graphs in this section. They include:

Dendrogram – Best Merge Method

Dendrogram – Actual Agreement

Similarity Matrix

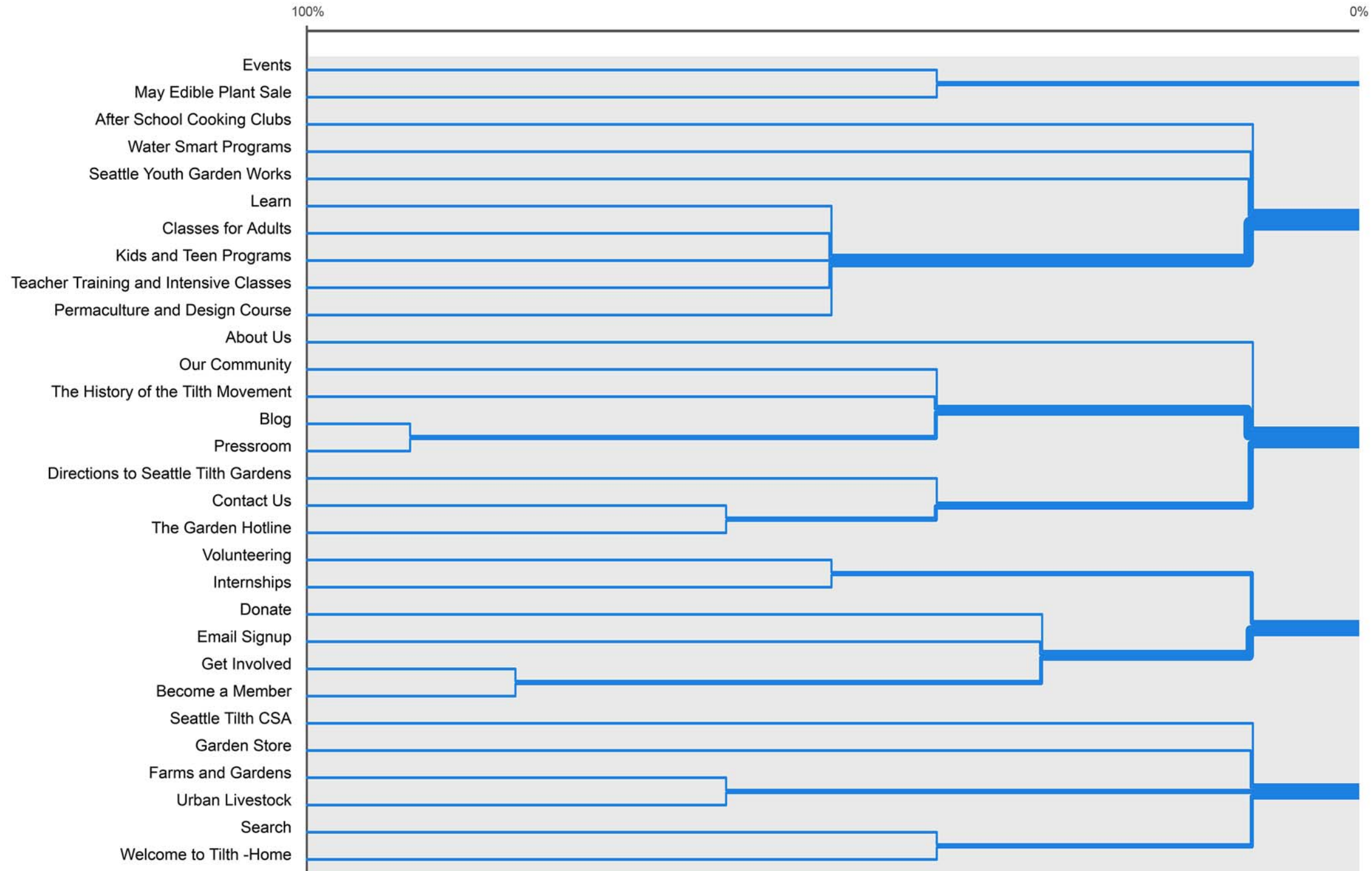
Items vs. Groups Matrix



# Seattle Tilth Card Sorting Report

## Dendrogram - Best Merge Method

The Best Merge Method often performs better than the Actual Agreement Method when the survey has fewer participants. It makes assumptions about larger clusters based on individual pair relationships.

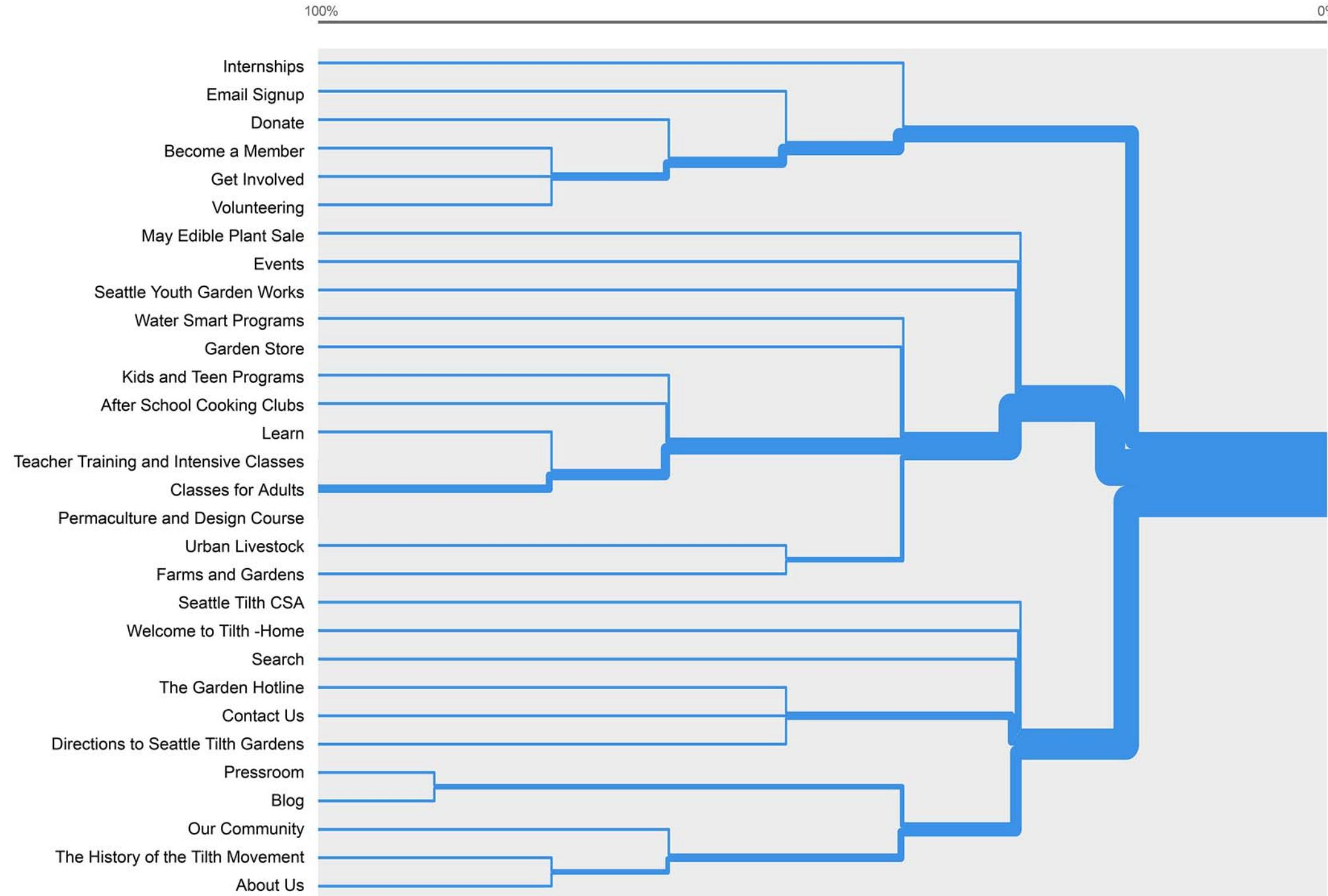




# Seattle Tilth Card Sorting Report

## Dendrogram - Actual Agreement Method

The Actual Agreement Method works best with 30 or more participants and will depict only absolutely factual relationships. This is called the Skeptical Dendrogram.



Data and matrix compilation: Optimal Sort (optimalsort.com), 2015



# Seattle Tilth Card Sorting Report

## Similarity Matrix

Classes for Adults

|     |  |                                |       |                            |                        |                      |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
|-----|--|--------------------------------|-------|----------------------------|------------------------|----------------------|-----------------|-------------------|--------------|-----------------------|--------|-----------|------|---------------|----------|-----------------------------------|-------------------|------------------------|--------|------------|-------------------------------------|--------------------|--------------|-----------------|--------------|--------------|----|----------------------------|
| 100 | Teacher Training and Intensive Classes |                                |       |                            |                        |                      |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 100 | 100                                    | Permaculture and Design Course |       |                            |                        |                      |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 80  | 80                                     | 80                             | Learn |                            |                        |                      |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 70  | 70                                     | 70                             | 50    | After School Cooking Clubs |                        |                      |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 70  | 70                                     | 70                             | 50    | 60                         | Kids and Teen Programs |                      |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 50  | 50                                     | 50                             | 50    | 50                         | 40                     | Water Smart Programs |                 |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 20  | 20                                     | 20                             | 30    | 30                         | 10                     | 50                   | Urban Livestock |                   |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 10    | 0                          | 0                      | 20                   | 60              | Farms and Gardens |              |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 10                   | 30              | 50                | Garden Store |                       |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 10              | 10                | 40           | May Edible Plant Sale |        |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 10  | 10                                     | 10                             | 0     | 20                         | 10                     | 0                    | 0               | 0                 | 0            | 40                    | Events |           |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 10    | 0                          | 0                      | 0                    | 0               | 0                 | 10           | 0                     | 20     | Pressroom |      |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 10    | 0                          | 0                      | 0                    | 0               | 0                 | 10           | 0                     | 20     | 90        | Blog |               |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 10  | 10                                     | 10                             | 20    | 0                          | 10                     | 0                    | 0               | 10                | 10           | 0                     | 0      | 50        | 50   | Our Community |          |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 10    | 0                          | 0                      | 10                   | 0               | 10                | 10           | 0                     | 0      | 50        | 40   | 70            | About Us |                                   |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 10    | 0                          | 0                      | 10                   | 0               | 10                | 10           | 0                     | 0      | 50        | 40   | 70            | 80       | The History of the Tilth Movement |                   |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 10  | 10                                     | 10                             | 0     | 20                         | 10                     | 30                   | 20              | 10                | 20           | 0                     | 10     | 10        | 10   | 20            | 30       | 40                                | Seattle Tilth CSA |                        |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 20              | 20                | 20           | 10                    | 10     | 0         | 0    | 20            | 20       | 30                                | 40                | Welcome to Tilth -Home |        |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 20              | 20                | 30           | 10                    | 0      | 20        | 20   | 30            | 30       | 20                                | 30                | 40                     | Search |            |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 0               | 0                 | 10           | 0                     | 0      | 40        | 40   | 30            | 40       | 20                                | 10                | 0                      | 20     | Contact Us |                                     |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 10                   | 20              | 30                | 30           | 0                     | 0      | 30        | 30   | 20            | 30       | 20                                | 10                | 0                      | 10     | 60         | Directions to Seattle Tilth Gardens |                    |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 10                   | 10              | 20                | 20           | 10                    | 0      | 10        | 10   | 10            | 20       | 10                                | 0                 | 0                      | 0      | 60         | 50                                  | The Garden Hotline |              |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 0               | 0                 | 0            | 0                     | 0      | 10        | 10   | 0             | 10       | 0                                 | 10                | 0                      | 0      | 30         | 30                                  | 20                 | Email Signup |                 |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 0               | 0                 | 0            | 0                     | 10     | 0         | 0    | 0             | 0        | 10                                | 10                | 0                      | 0      | 0          | 0                                   | 0                  | 60           | Become a Member |              |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 0               | 0                 | 0            | 0                     | 0      | 0         | 0    | 0             | 0        | 0                                 | 0                 | 0                      | 0      | 0          | 0                                   | 0                  | 50           | 80              | Get Involved |              |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 0               | 0                 | 0            | 0                     | 10     | 0         | 0    | 0             | 0        | 0                                 | 0                 | 0                      | 0      | 0          | 0                                   | 0                  | 40           | 60              | 80           | Volunteering |    |                            |
| 0   | 0                                      | 0                              | 0     | 0                          | 0                      | 0                    | 0               | 0                 | 0            | 10                    | 0      | 0         | 0    | 10            | 0        | 0                                 | 0                 | 0                      | 0      | 0          | 10                                  | 30                 | 50           | 70              | 60           | Donate       |    |                            |
| 20  | 20                                     | 20                             | 10    | 20                         | 30                     | 10                   | 0               | 10                | 0            | 0                     | 0      | 10        | 10   | 10            | 10       | 10                                | 0                 | 0                      | 0      | 0          | 20                                  | 30                 | 40           | 50              | 30           | Internships  |    |                            |
| 20  | 20                                     | 20                             | 20    | 30                         | 40                     | 40                   | 20              | 40                | 30           | 0                     | 0      | 0         | 10   | 0             | 0        | 10                                | 0                 | 0                      | 0      | 20         | 20                                  | 10                 | 10           | 10              | 10           | 0            | 10 | Seattle Youth Garden Works |



## Test Analysis

The test results graphs are very helpful in interpreting the data. The dendrograms and matrices illustrate how the data aggregates into groups based on the test participants choices.

### Dendrograms

The dendrograms shown here are derived in two different ways. However they share common structures. On the left are the terms used in the test, and to the right is the tree as it progresses from branches to the trunk. There is a percentage spectrum along the top of each dendrogram. This illustrates how much agreement there will be at any point from left to right. Since the groupings at the left more closely resemble raw test data, we are closer to 100% agreement. As the groupings progress to the right and get thicker, the percentage decreases as the more participants are likely to disagree with the results.

### Dendrogram – Best Merge Method

This dendrogram illustrates the relationships derived from the data based on individual pair relationships. How this works is that once a pair relationship is established by one user's results, this pair gets confirmed by any further agreement by other users. Basically every pair combination gets a score based on how many times they have been linked together. This method tends to produce insightful results when the number of participants is low, as is certainly the case in our test.

The results show that the terms fell into groups much like we anticipated. We estimated that we would end up with six or seven logical groupings, and that is what the dendrograms illustrates.

Common terms for most every common navigation term grouped logically. There are a few deviations from this, but the groups stratify naturally into groups for the most part.

### Dendrogram – Actual Agreement Method

The Actual Agreement Method compiles the test data by category. Each category the test subjects create gets a score which increases as more participants agree with that category. Also only actual relationships are considered, not individual pairings so no assumptions are made about possible groupings. This explains why this dendrograms appears more like an actual tree since there are more merging

lines. Where vertical blue lines are present, this indicates agreement by participants about the linked groupings. This test tends to work more effectively with a larger group of participants.

Even though we had a relatively small test group, the results display relationships very similar to the Best Merge Method. Terms tend to fall into clusters much like the previous dendrogram. In fact, these results broke down into almost exactly what we would have thought as natural groupings for the terms.

### Similarity Matrix

The similarity matrix features numbers in squares in a triangular grid. Each number indicates how many test participants agree with the pair combination that that square represents. The larger the number in the square, the more participants are in agreement about that pairing.

This matrix also arranges similar pairs into clusters, grouping stronger correlations together. The analyst can see what the strongest combination is, and the less strong combinations in close proximity. This helps to show possible alternate pairings that may work nearly as well. The similarity matrix show clearly what terms go together but also some other nuances in term relationships that are not shown in the dendrograms.

The similarity matrix results are more complex, and this is demonstrated by the fact that a few of our terms deviate somewhat from the more consistent grouping of the dendrograms. Terms that would tend to fall into group terms like **About** and **Classes** categories indicate this most clearly. They have some elements that stray from their natural groups. However, most other common terms fall into fairly neat clusters.

### Item vs. Group Matrix

The Item vs. Group Matrix breaks down the test data to an even more granular level. This matrix displays the correlation between each of the thirty test terms and the each of the groupings assigned to them. Darker blue areas indicate where the agreement among the participants is the greatest.

On the vertical axis are the test terms listed in an order that corresponds to how they tend to be grouped together. The vertical axis shows the groups they were assigned. Note the blue clusters tend to fall into convergence areas where the term

groups intersect with the participant's categories reflecting exactly how they were categorized by the test participants.

In our case it is fortunate that all the graphs indicate similar grouping results. While some items did not consistently get grouped together, we figured unfamiliarity with some of the terms may have played a role in their separation. A few examples of this are that the **CSA** terms was grouped with the **Garden Store** only once, even though they are both sales operations (A Community Supported Agriculture program is where one can subscribe to have produce, dairy, and meats delivered to the home regularly). We surmised that had the participants been able to ask what a **CSA** was, it would have appeared next to the Garden Store term more consistently.

Other examples are the **Seattle Youth Garden Works** is at the opposite end of the similarity matrix from other programs. Again this could have been because of confusion about what kind of event or activity this represented.

Terms that tended to group under the category **About** are often scattered around both matrices. The **About** navigation element in most websites houses a broader range of topics than almost any other so it might make sense that these terms were more spread out.

This overall agreement among the dendrograms and matrices allowed us to arrive at decisions with a comfortable degree of confidence despite the limitations due to budget constraints. Our conclusions and recommendations concerning the navigation and site organization derive directly from this data. The charts featured here are also in the conclusions sections with color overlays to better understand the test results and the logical groupings they illustrated.



## Conclusions

After analyzing the data from the Optimal Sort card sort, the competitive analysis and the heuristic analysis we propose an information architecture with a main navigation that includes these seven main menu names:

1. Classes and Programs
2. Events
3. Get Involved
4. CSA and Garden Store
5. Blog
6. Contact
7. About

Seattle Tilth's main priority and most popular features to users are the classes and programs that it offers. The card sort data indicated that users were inclined to group classes and programs together under one category. Because the classes and programs offered by Seattle Tilth have expanded greatly in the past several years we conclude that a sub-navigation is the best way to organize this large amount of information. This sub-navigation will guide users to help easily find desired classes or programs:

Classes and Programs:

- a. Classes for Adults
- b. Programs for Adults
- c. Classes for Kids and Teens
- d. Programs for Kids and Teens

The categories, **About**, **Get Involved**, **Contact** and **Events** were common category names created by card sort participants. Several participants grouped similar cards under each of these categories. We used this data to conclude that these categories should be included in the main navigation.

It was less clear where to place information regarding the blog, **CSA** and **Garden Store**.

Based on the large amount of information contained on the Seattle Tilth blog we concluded that it should be prominently featured as a main navigation category.

In regard to the **CSA** and **Garden Store** we decided that they are similar in that you can purchase both online and that users could benefit from finding services and items for purchase in the same area.

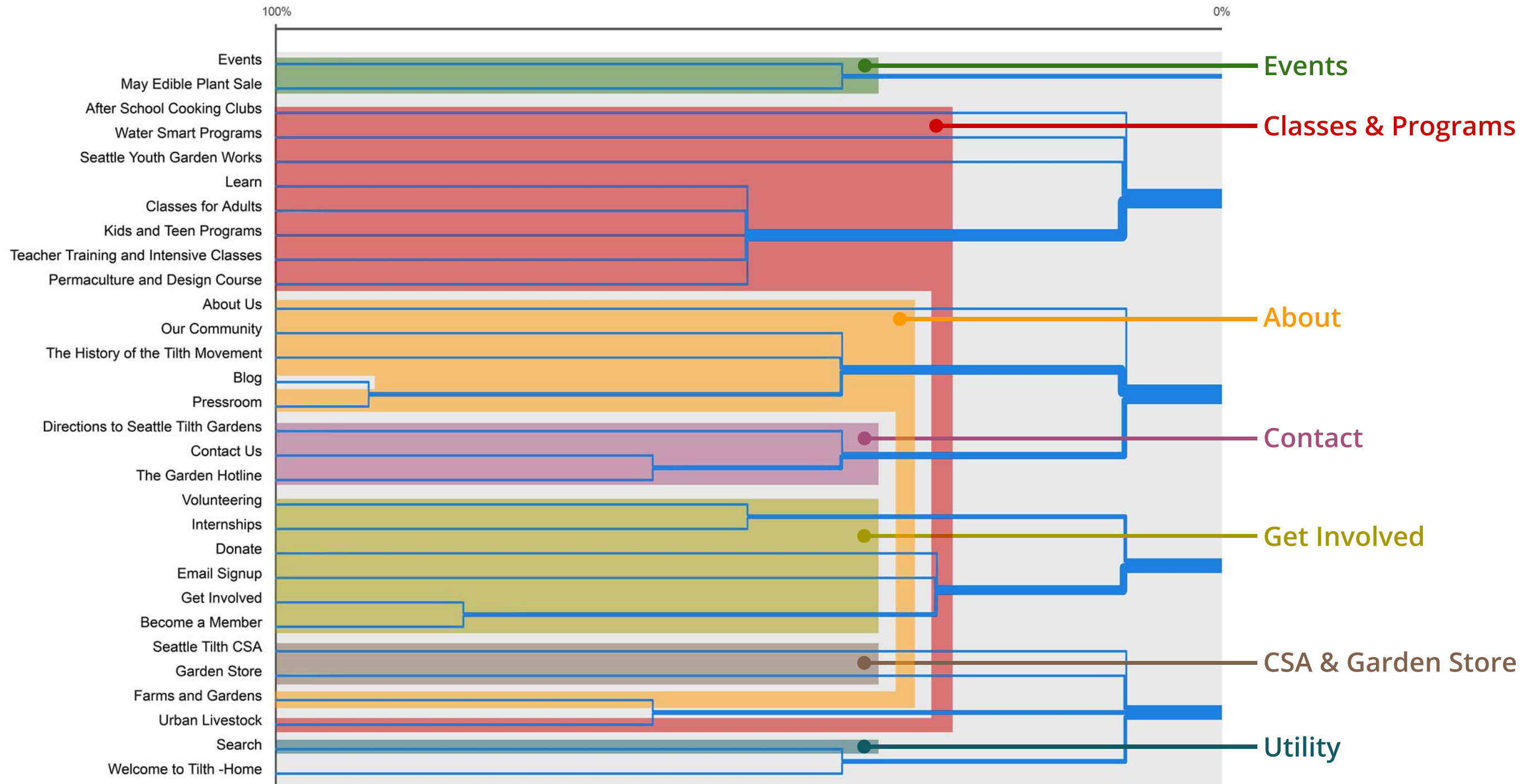
We also chose to illustrate our conclusions using the test result dendrograms and matrices. Superimposed on these dendrograms and matrices are the groupings as our analysis team has interpreted the results. Each colored area corresponds to the category we have concluded is the best for that grouping. Labeling for each colored group is provided. Coloring by category is consistent throughout to illustrate how well all the data tends to group the test terms



# Seattle Tilth Card Sorting Report

## Dendrogram - Best Merge Method

The Best Merge Method often performs better than the Actual Agreement Method when the survey has fewer participants. It makes assumptions about larger clusters based on individual pair relationships.



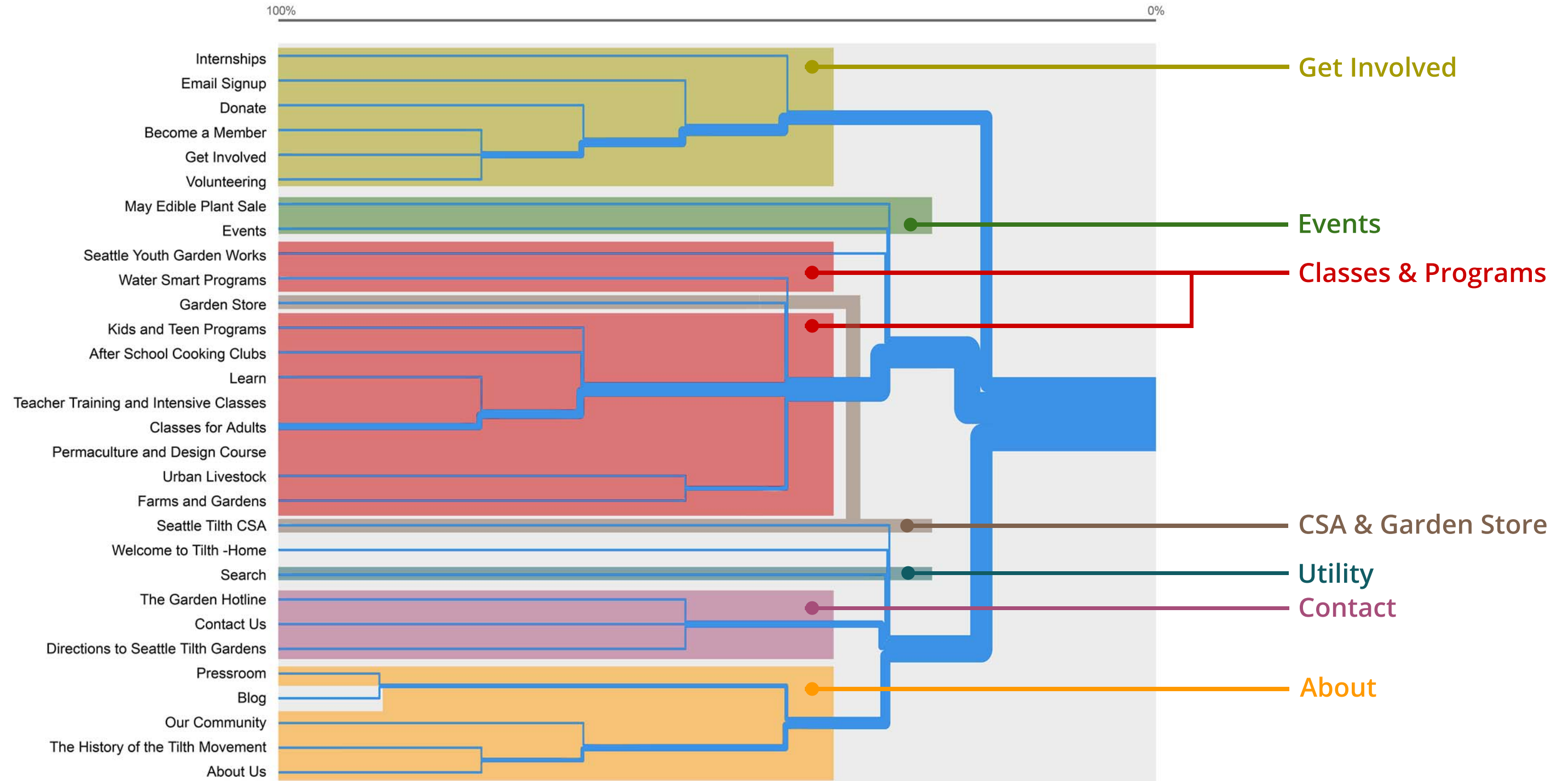
Data and matrix compilation: Optimal Sort (optimalsort.com), 2015



# Seattle Tilth Card Sorting Report

## Dendrogram - Actual Agreement Method

The Actual Agreement Method works best with 30 or more participants and will depict only absolutely factual relationships. This is called the Skeptical Dendrogram.

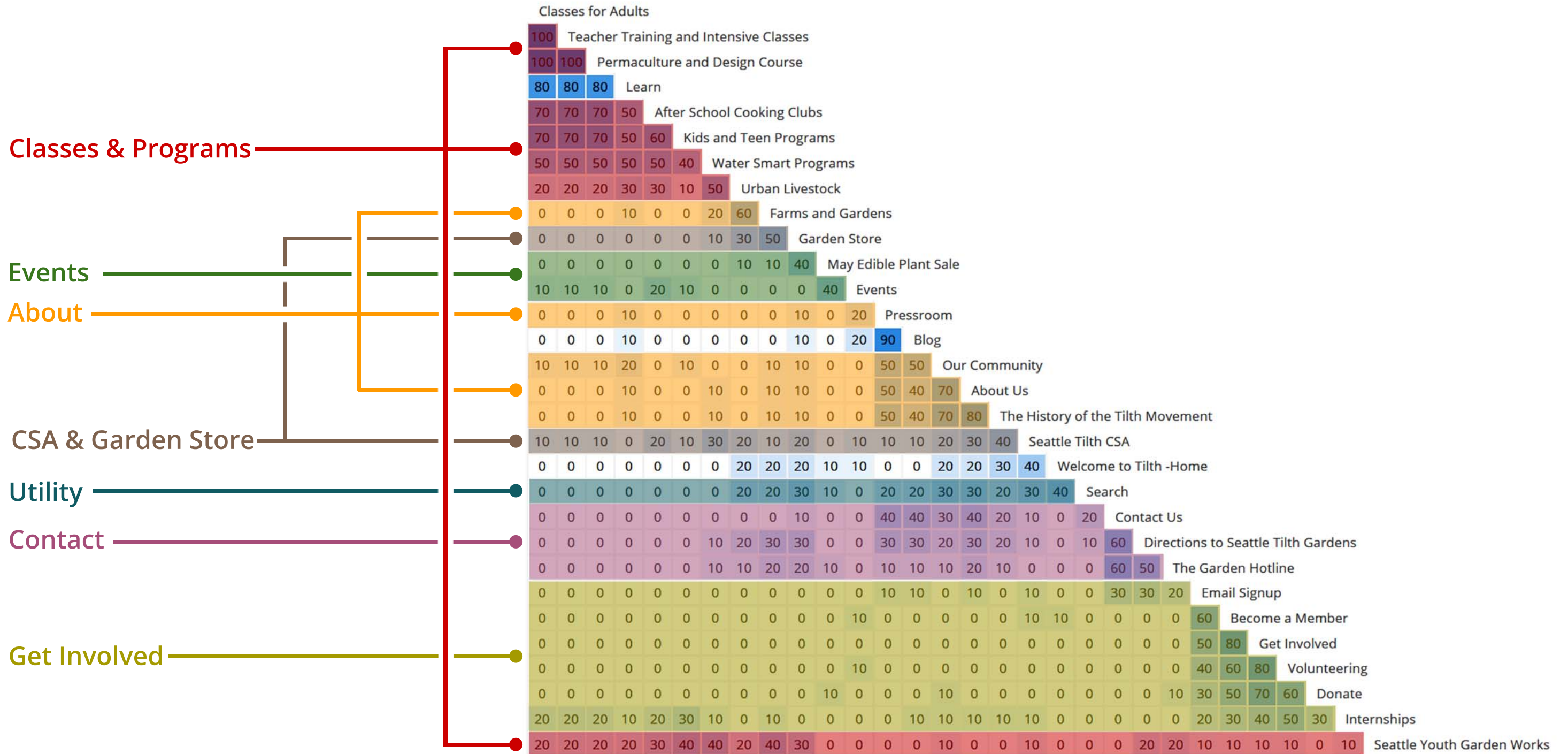


Data and matrix compilation: Optimal Sort (optimalsort.com), 2015



# Seattle Tilth Card Sorting Report

## Similarity Matrix



Data and matrix compilation: Optimal Sort (optimalsort.com), 2015



# Seattle Tilth Card Sorting Report

## Items vs. Groups Matrix



Data compilation: Optimal Sort (optimalsort.com), Matrix compilation: SynCaps V3 (<http://www.syntagm.co.uk/design/cardsortdl.shtml>), 2015

## Recommendations

- 1) Optimal Sort data indicated that users were inclined to group Classes and Programs together. Therefore, we suggest naming the first menu item of the main navigation **Classes and Programs**.
- 2) Because there are a lot of pages that fall under **Classes and Programs**, we suggest creating the following sub-navigation, so that information is well organized and easy for users to find:

### **Classes and Programs:**

- **Classes for Adults**
- **Programs for Adults**
- **Classes for Kids and Teens**
- **Programs for Kids and Teens**

- 3) Create a simplified utility menu that includes:
  - a) **Login** for users with memberships to Seattle Tilth
  - b) **Shopping Cart** to indicate what purchases are in progress
  - c) **Search**
- 4) **CSA and Garden Store** are grouped together to indicate where the user can find products and services available to purchase online, such as CSA subscriptions, books and gardening tools.
- 5) **Blog** is a menu item in the main navigation. Although users in the card sort exercise commonly placed **Blog** under **About** in the menu, we concluded that due to the robust size and role of the blog to Seattle Tilth it should be prominently featured as a main menu item.
- 6) We also concluded that the term **Learn**, currently used on the site, was not helpful as a navigation term even though it grouped well with the other class

related terms. It was seen as too vague.

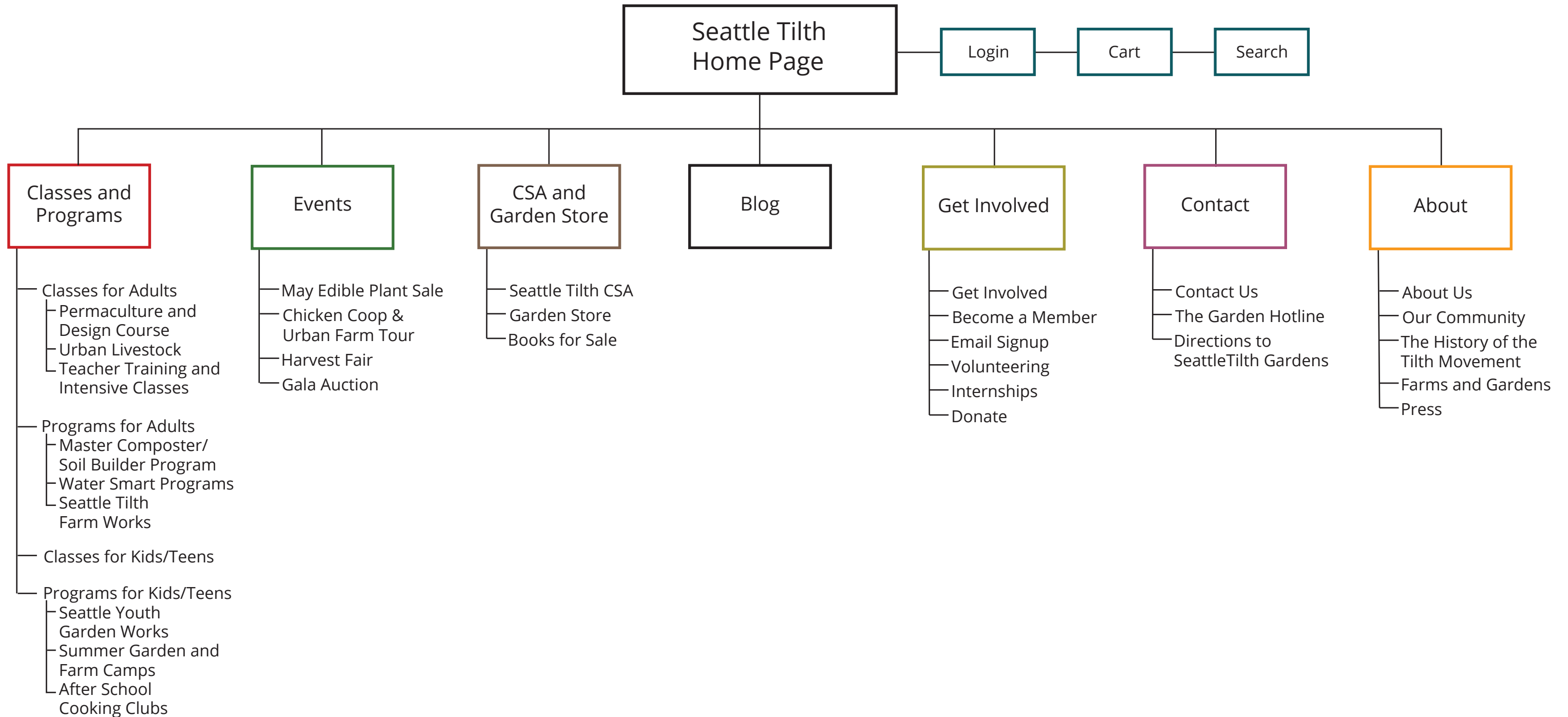
- 7) The term Welcome to Seattle Tilth, also used on the site, tends not to fit in with any category and should be removed.

Recommendations are summarized in the proposed information architecture in the following page.





# Seattle Tilth Proposed Information Architecture



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