

ONE MAN, MULTIPLE NAMES: AN UNEXPECTED DNA DISCOVERY

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The Leeds Method

The goal of the Leeds Method is to naturally sort DNA matches into color clusters based on shared matches. It often results in four clusters of matches based on your four grandparent lines. But your results may vary!

Ralph	395	*			
Deb	384		*		
H.B.	344				
Robert	267			*	
S.M.	231				
Julie	214				
Kristen	202				
P.D.	182				
S.T.	141				
Steph	133				
Willie	127				
Kristi	124				
Victor	116				
Chris	108				
Nick	104				
M.J.	101				*
Carol	92				*

This method is based on Shared Matches, not trees. This is important because trees often contain errors!

It allows you to quickly identify matches which are relevant to your research question. You can then work with a group of matches instead of working with on match at a time. Each cluster contains people who are likely related to you—and to each other—through common ancestors.

Note: Shared matches are matches who match both you and your DNA match. At different testing sites they are called “Shared Matches,” “Relatives in Common,” “Shared DNA Matches,” and “In Common With.”

Creating DNA Match Clusters with the Leeds Method

Note: If you know your DNA matches, do not use a match who shares more than one grandparent with you to start a new color/column.

1. List 2nd & 3rd cousins (from 400 to 90 cM)
2. Assign a color to the first cousin on your list
3. Assign the same color to all their Shared Matches
4. Assign a different color to the first cousin on your list without a color
5. Assign the same color to all their Shared Matches
6. Repeat steps 4 & 5 until everyone on your list has at least one color

Adding Higher Matches

Adding higher matches—such as close family and 1st cousins—can help you identify your clusters. First, list these matches at the top of your chart. Second, look at their Shared Matches in the original chart and assign them every color that they match.

Analyzing Color Cluster Charts

Note: “Overlap” is when one of your matches in your original chart has been sorted into more than one color cluster.

4 Clusters without any overlap?

Looking at only those people in your original chart (i.e. usually those between 400 and 90 cM), do you have four color clusters without any overlap? If so, this chart likely represents your four grandparent lines.

Less than 4 clusters?

Looking at only those people in your original chart (i.e. usually those between 400 and 90 cM), do you have less than 4 clusters? Your chart might represent only 3 of your parent lines or it might represent 4 of your lines but 2 of them have been merged because of shared DNA between those two lines.

More than 4 clusters?

Looking at only those people in your original chart (i.e. usually those between 400 and 90 cM), do you have more than 4 clusters? This might indicate pedigree collapse or endogamy. Or it might indicate that you need to merge or consolidate some of your clusters. In those cases, you likely have 2 or more clusters representing the same part of your family tree. In that case, read about consolidating your clusters below.

Consolidating Color Clusters

“Heavy overlap” is when most of the people in one color cluster are also in another color cluster. For example, when most of the people in a Green Cluster are also in a Blue Cluster, we have heavy overlap. This usually means that the people in those clusters—in this case in the Green and Blue Clusters—are likely from the same part of your family tree. In these cases, it is often best to consolidate or merge those two groups.

To consolidate clusters, first find any cases of heavy overlap. Then decide which color you will keep and which color(s) you will discard. You don’t want to lose any of your matches from the group you are discarding, so make sure to assign them to the color you are keeping. Then delete the other row of color.

For example, let’s say most of the people in Blue are also Green. Let’s keep the Blue but delete the Green. First, assign the color Blue to everyone who was Green but not Blue. Then delete the Green cluster.

Sorting Your Excel Spreadsheet to Create Clusters

If you have a lot of matches or are adding 4th cousins, it is a great idea to sort your chart so that matches of a specific color cluster together. This step creates the actual color “clusters.”

1. Select entire spreadsheet
2. Select “Data” then “Sort”
3. Click “My Data has headers” if it does
4. Column → Sort by [choose] → Sort On “Cell Color” → Order → [choose color] → On Top
5. Choose “Copy Level”
6. Change the name of the “column” and the color under “order”
7. Continue steps 4-6 until you’ve selected all the columns
8. Select “OK”

Adding 4th Cousins

After completing the initial chart, you can add those lower match clusters. The only limit is how much time you want to spend adding matches!

To add these lower matches, just add their names to the bottom of the list then look at their Shared Matches. If they match people who are already assigned a color, then add them to that color or colors. If they don't match people who are already assigned a color, then create a new color column.

Check Your Work

Since we initially create these charts by only opening the Shared Matches of one person in each color cluster, it is possible that some people belong in more than one color cluster and we missed this fact. For this reason, it is a good practice to check your work.

Method #1: To check your work, open the Shared Matches of each of your DNA cousins on the chart and verify that they only belong to one Color Cluster. If they belong to more than one Color Cluster, add the additional colors as needed.

Method #2: If you are working within AncestryDNA, then create a custom group (or colored dots) for each color cluster and add your matches to the correct custom groups. Then, as in method #1, open each Shared Match and make sure they are only matching people that are in their same color cluster. If you see additional colors, add the match you are working on to those colors, too.

Method #3: Depending on what site you are working on, use Genetic Affairs' (<http://geneticaffairs.com/>) AutoCluster tool or DNAGedcom's (<https://www.dnagedcom.com>) Collins' Leeds Method tool to create a chart with the same centiMorgan (cM) range. Compare these results with your manual chart.

NEXT STEPS

After creating a Cluster or Genetic Network through any method, follow these "Next Steps"

1. Identify repeating surnames
2. Diagram the Cluster or Genetic Network matches
3. Look for a Convergence Couple

4. Verify DNA amounts are appropriate for the expected relationships
5. Do traditional genealogy to verify relationships

Step 1: Identifying Repeating Surnames

After creating a Leeds Method chart, you may need to look at the trees of your matches to identify a surname or surnames of interest—those surname(s) which are your likely ancestral lines for that specific cluster. Follow these steps to identify these surnames of interest:

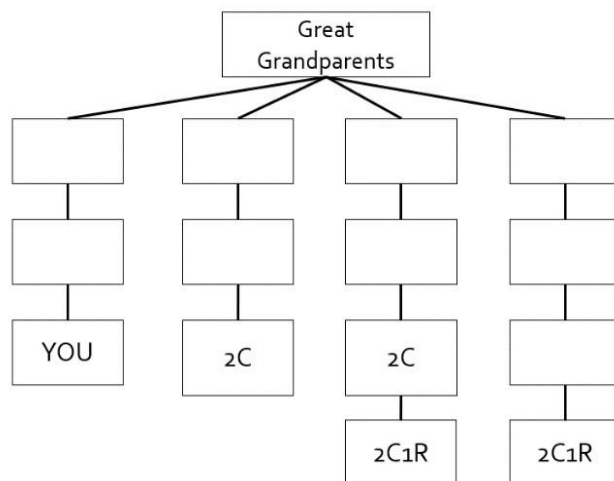
1. Create a Color Cluster chart using the Leeds Method or an automated tool
2. Label those matches who have trees and those who do not have trees
3. For those matches who do have trees, write down the surnames of their ancestors up to their 8 great grandparents (Note: If you do not find a repeating surname, you may need to extend to 16 great grandparents)
4. Identify surnames that repeat in the trees
5. Label the clusters with those repeating surnames

Step 2: Diagram the Cluster or Genetic Network Matches

Clusters can be diagrammed on a piece of paper or by using a variety of computer programs or sites. Basically, you are mapping out how the people in a cluster are related to each other. Then you can add how you, or the test taker, is also connected to this group.

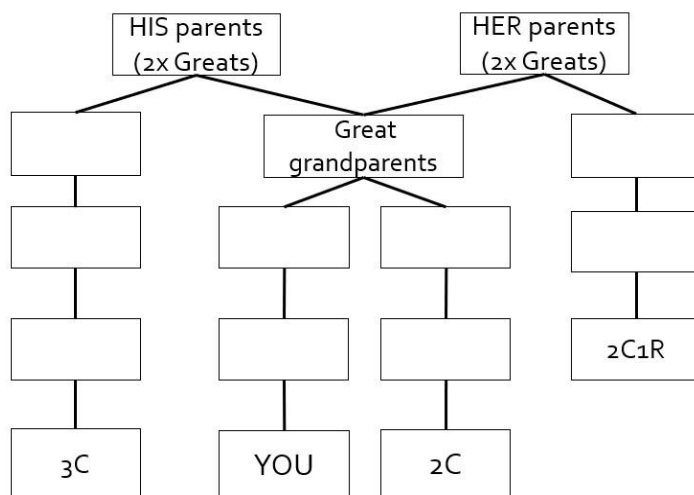
There are two types of clusters:

Scenario 1: A cluster where the test taker and all their matches descend from a specific couple (or person). In this type of scenario, everyone in the cluster is related to everyone else.



Scenario 1: Everyone is descended from a common couple

Scenario 2: A cluster where the test taker and at least one of their matches descend from a specific couple (or person), but other matches in the cluster descend from the parents of that couple. In this type of scenario, the test taker should descend from the common couple. Not everyone in these clusters is related to everyone else in the cluster. But they are all related to the test taker and the key person (i.e. “2C” in this diagram) in the cluster.



Scenario 2: Matches descend from a couple plus his and/or her parents

Step 3: Look for a Convergence Couple

Look at your diagram. It will likely look similar to either Scenario 1 or Scenario 2 (above). In both cases, the convergence couple is the MRCA—the Most Recent Common Ancestor (or Ancestral Couple). This convergence couple should be a direct ancestor of both you and the people in this cluster.

Step 4: Verify DNA Amounts are Appropriate for the Expected Relationships

Each match you’ve diagrammed should share a DNA amount that falls within the expected range for that relationship.

1. From the diagram, determine the relationship of each match to the test taker
2. Go to the free Shared cM Project
 - a. Go to www.dnapainter.com
 - b. Under “Figure out how you’re related to a DNA match,” click on “Visit the Shared cM tool”
 - c. In the box labeled “Enter the total number of cM for your match here,” enter the amount of DNA the test taker shares with a match
 - d. In the box or “Relationship probabilities,” find the expected (i.e. calculated) relationship

- e. Check the percent of probability:
 - i. If it's high, proceed—you are likely on the right track
 - ii. If it's low, proceed with caution—these matches need additional verification, but if the others are all high you are likely on the right track
 - iii. If it's zero, the relationship is most likely incorrect.
- f. Repeat for each of the matches in your diagram.

Step 5: Do Traditional Genealogy Research

Genetic genealogy should always be followed up with traditional genealogy research.