

Four ways DNA Painter can help with your family history research

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DNA Painter is a website for genealogists working with DNA. There are many different DNA-related features on the site, and these are used both by beginners and by those with more experience of genetic genealogy.

If you're hooked on DNA, activities like chromosome mapping and probability trees can be compelling, but what's often not discussed is how exactly these tools can help you with your family history research.

Once you understand this more fully, you will be better equipped to focus on the tools and methods that are most likely to help you achieve your goals.

Today's webinar focuses on how the site can assist you, based around **four broad themes**.

1. Visualization

One of the things I love about genealogy is the way it encourages me to chase stories. If there's a story to be uncovered, then I'm equally happy whether it concerns a distant 2nd cousin twice removed or a direct ancestor. What's important is the story.

If you look sufficiently far and wide, there are fascinating stories hidden in every tree. Some examples from mine:

Isaac Wilson was the doctor in charge when Queen Victoria was born in 1819. She later knighted him in recognition. I've researched his life in great detail, but my connection to him is really quite remote. He was the brother of Mary Wilson, my 4th-Great-Grandmother.



Katie Putnam was a popular and multitalented American actress and comedian of the 1880s.

I've spent so much time researching her that she feels like a close relative. But in reality, Katie was my great-grandmother's second cousin!

As my second cousin three times removed, it's entirely possible that Katie and I would share no DNA at all.



When I'm looking at my matches, the inverse applies. I know I have a DNA connection, but I don't know what their story is. Somewhere back in time I share common ancestors with each of these matches. This is tantalizing, but the process of discovering that connection can be both daunting and frustrating.

I can use the visualization tools at DNA Painter to help me focus and organize this process. By importing my ancestral line into DNA Painter, I can see my own genealogy in a different way:

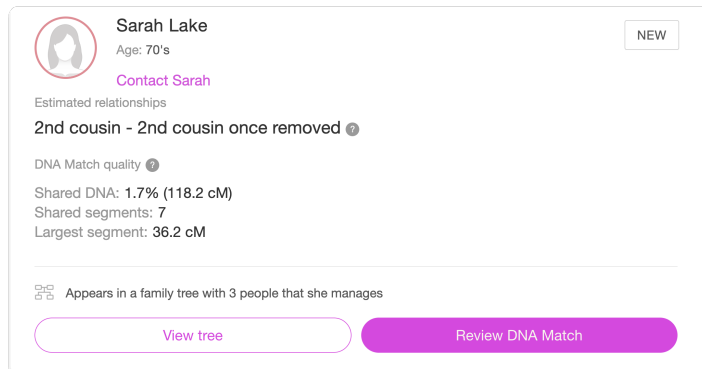
- Gaps in my direct line jump out at me
- The tree completeness report helps me to manage my expectations as to how likely I am to be able to connect to new cousins at different distances
- I can view a pedigree collapse report to see how many of my ancestors are related to me more than once.
- If I have any such multiple grandparents in the last 10 generations, I can visualize these by hovering on them in the fan chart view.
- I can also make notes and add speculative surnames at specific positions in my direct line
- I can overlay DNA inheritance paths to see for example which of my ancestors I could have inherited XDNA from
- If I'm able to identify a cousin who is a DNA match, I can tentatively mark the common ancestors as 'genetic ancestors' – ancestors where I've verified that I inherited some of their DNA

I can also experiment with other visualizations, such as colour-coding ancestors by religious affiliation or country of birth.

2. Focused match research

One of the most common tasks when working with DNA results can also be the hardest: researching a match in order to figure out how they are related to you.

I still get excited when a new match appears. To give you a sense of how I work with new matches, here's an example of a new match called Sarah Lake:



Sarah and I share 118.2 centimorgans (cM) of DNA. My first port of call is the information at the testing site:

- Sarah has a small tree that I can examine for familiar names or places.
- I can also review shared matches to see if Sarah also shares DNA with any matches I've already identified

In some lucky cases, the match will have a tree that reveals the connection quickly. They may even already be known to you. However, some detective work on your part will be needed in most cases.

DNA Painter can help me with three key tasks:

1. I can use the **Shared cM tool** to estimate how closely Sarah is related to me. I can then figure out how far back I will need to go in our trees to find our common ancestors.
2. I can create an **ancestral tree** for Sarah's direct line to help me research every possible line when seeking the connection.
3. Using **What are the Odds? (WATO)** to test any possible connections I identify.

My video tutorial for WATO is in the Useful Links section below.

3. Getting to know your DNA

The leap into learning how to use your DNA for family history can be jarring and difficult for many. Lots of people are hard on themselves for what they perceive as their lack of knowledge.

There is often an assumption that DNA is something that you either understand or do not understand. The reality is far more nuanced! The use of DNA for genealogy involves many 'gotchas,' and is a continuing learning process.

For me, this learning process becomes far more personal and engaging when done through the prism of my own DNA. There's not much that's more personal than chromosome mapping.

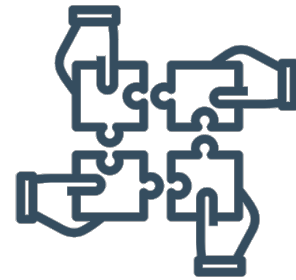
While chromosome mapping is a puzzle that is enjoyable in its own right, it can also help you directly and indirectly with your family history research:

- Working with segments helps you to understand DNA and inheritance more deeply
- Visualizing your matches on a chromosome map can help you evaluate matches with additional context, helping you to identify 'personal pileups' where you may have a disproportionate number of matches where the connection is far beyond the genealogical timeframe
- Maintaining a reference of your own DNA helps you identify new matches more quickly, regardless of which testing database they're in
- Exploring more advanced segment mapping techniques such as inferred mapping can help you maximise your use of tests by other family members
- The flexibility to assign DNA to ancestors at a segment level can help you untangle multiple relationships

While there is not time in today's webinar to explain the concept of chromosome mapping in detail, my previous webinar appears under **Useful Links** below, along with several other helpful tutorials.

4. More cooperation

The concept of sharing can divide opinion within the world of genealogy. But few would deny that working with others can help you to achieve more.



If you would like to share your work with others, DNA Painter can help in several ways:

1. Generating images

- You can generate a picture of your chromosome map or tree
- You can then share this with others and/or seek a second opinion or spread the word about your DNA research

2. Sharing links

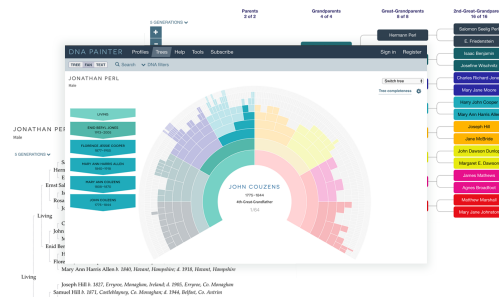
- You can share a read-only link to your chromosome map or tree so that anyone with the link can view it
- Sending a direct link to a searchable version of your direct line is a great way to connect DNA matches with all the information they would need to work on establishing a connection
- You can also share a direct link to the shared cM tool that is prepopulated with a specific number of centimorgans, such as 118 (<https://dnapainter.com/tools/sharedcmv4/118>)

3. Sharing hypotheses

- If you believe you've figured out the connection between you and your DNA match, building a simple probability tree using the **What Are the Odds?** tool and sharing this with your match can be an efficient icebreaker

Summary

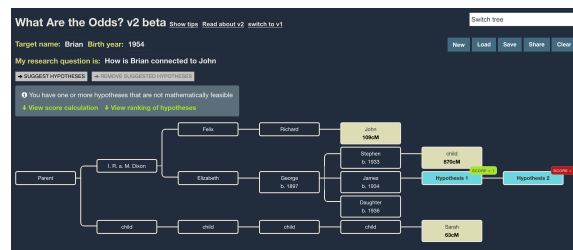
Ancestral trees can help you visualize and share your direct line and the direct line of your matches, considering all possible connections



The Shared cM tool provides a quick way to see and share the possible relationships for an amount of cMs shared

				Great-Great-Grandparent		GGG Aunt / Uncle			
Half GG-Aunt / Uncle 208 103 - 294	Great-Grandparent 485 - 1486			Great-Great-Aunt / Uncle 429 186 - 713		1C3R 117 25 - 238	2C3R 51 0 - 154	Other Relationships	
Half 1C2R 102 16 - 209	Half Great-Aunt / Uncle 631 154 - 668	Grandparent 1754 984 - 2462		Great-Aunt / Uncle 680 335 - 1467	1C2R 221 33 - 471	2C2R 71 0 - 244	3C2R 36 0 - 186	3C 8 0 - 71	
Half 1C1R 98 0 - 195	Half 1C1R 224 62 - 488	Parent 9485 2376 - 3720		Aunt / Uncle 1741 101 - 2382	1C1R 233 14 - 303	2C1R 28 0 - 182	3C1R 28 0 - 128	4C1R 16 0 - 68	6C1R 5 0 - 20
Half 3C 48 0 - 168	Half 3C 102 10 - 325	Half 1C 449 156 - 979	Half Sibling 449 1160 - 2436	Sibling 2613 1613 - 3488	SELF 1C 896 396 - 1397	2C 228 41 - 582	3C 73 0 - 234	4C 35 0 - 139	6C3R 13 0 - 45
Half 3C1R 27 0 - 139	Half 3C1R 95 0 - 190	Half 1C1R 224 62 - 488	Half Great-Niece / Nephew 431 154 - 668	Niece / Nephew 431 154 - 668	Child 3487 2376 - 3720	1C1R 233 14 - 303	2C1R 28 0 - 182	3C1R 28 0 - 128	4C1R 16 0 - 68
Half 3C2R 27 0 - 78	Half 3C2R 48 0 - 144	Half 1C2R 102 16 - 209	Half Great-Niece / Nephew 431 154 - 668	Great-Niece / Nephew 431 154 - 668	Grandchild 1754 984 - 2462	1C2R 221 33 - 471	2C2R 71 0 - 244	3C2R 36 0 - 186	4C2R 27 0 - 98
Half 3C3R 27 0 - 120	Half 3C3R 90 0 - 120	Half 1C3R 102 103 - 383	Half GG-Niece / Nephew 431 154 - 668	Great-Great-Niece / Nephew 431 154 - 668	Great-Great-Grandchild 431 154 - 668	1C3R 117 25 - 238	2C3R 51 0 - 154	3C3R 27 0 - 98	4C3R 19 0 - 60
									5C3R 13 0 - 30
									6C3R 8 0 - 42

What are the Odds allows you to investigate the feasibility of any potential connections you've identified



Chromosome mapping provides a platform where you can visualize and annotate your matches and segments, learning more about DNA as you do so



Useful links

DNA Painter

<https://dnainter.com>

<https://dnainter.com/tools>

<https://dnainter.com/tools/sharedcmv4>

<https://dnainter.com/tools/probability>

<https://dnainter.com/tools/wato>

<https://dnainter.com/blog/> (including articles on inferred mapping)

Transferring your DNA in order to access segment data for chromosome mapping

<https://thednageek.com/how-to-transfer-your-ancestrydna-test-to-other-databases/>

How-to articles

<https://dna-explained.com/2019/10/14/dnainter-instructions-and-resources/>

<http://www.jmhartley.com/HBlog/2018/04/11/playing-with-dnainter/>

Video tutorials

Chromosome mapping

https://familytreewebinars.com/download.php?webinar_id=955

https://www.youtube.com/watch?time_continue=1&v=wyjcJxywTZI

<https://vimeo.com/283126987>

Ancestral trees

https://www.youtube.com/watch?v=Z_RSGDS5goE

What are the Odds?

https://familytreewebinars.com/download.php?webinar_id=1288

<https://www.rootstech.org/video/introduction-to-what-are-the-odds>