

Cracking the Case with DNA

Presenters: Anna Swayne and Ross Curtis, PhD

We all have genealogical questions we want to answer. DNA can help us crack the case. In this class, we'll explain some of the basics behind genetic inheritance and DNA tools that are available to solve your genealogical mysteries.

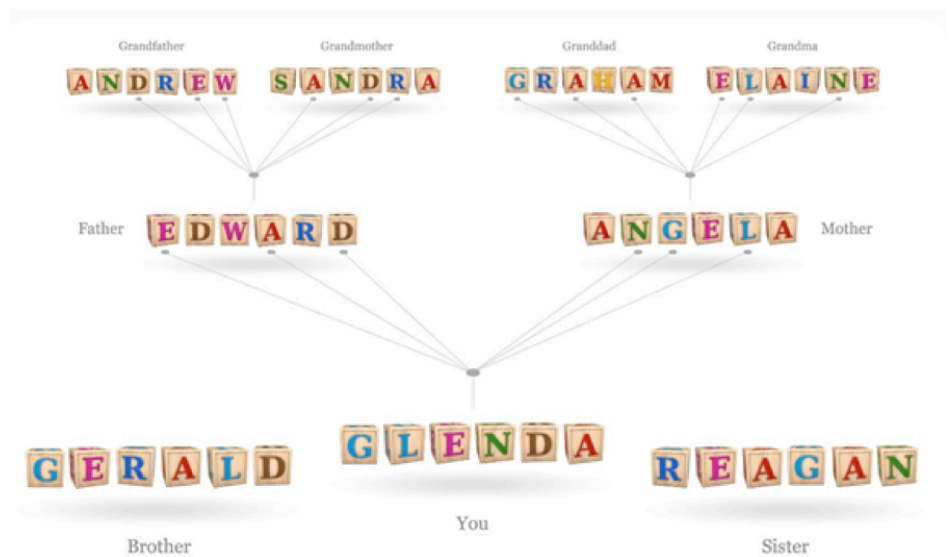
Genetic Inheritance

Your DNA contains a record of your ancestors, but you aren't a carbon copy of any one of them. The particular mix of DNA you inherit is unique to you. You receive 50% of your DNA from each parent, who received 50% of theirs from each of their parents, and so on. In the chart below you can see how the amount of DNA you might receive from a particular ancestor typically decreases over generations. If you go back far enough, there is a chance that you didn't inherit any DNA from a particular ancestor or not as much as you might have expected.

The chart is a simplified version of how DNA might have been passed down from grandparents. Assume each letter represents a segment of DNA. Here are some important things to notice:

- Which letters get passed down to each offspring is random (the fact that the letters spell names in this example is simply to help with the illustration).
- Not all the letters get passed down.
- Just because a child doesn't have a letter doesn't mean that an earlier ancestor didn't have it.
- Siblings can have different combinations of letters and still be genetic siblings.

By understanding how DNA is inherited, you can see how and why you have some DNA segments that match your relatives and others that do not, why you may or may not have inherited DNA segments associated with a certain ethnicity, and why getting multiple people in your family tested can help discover more of your family's genetic tree. We will give more in-depth examples in class.



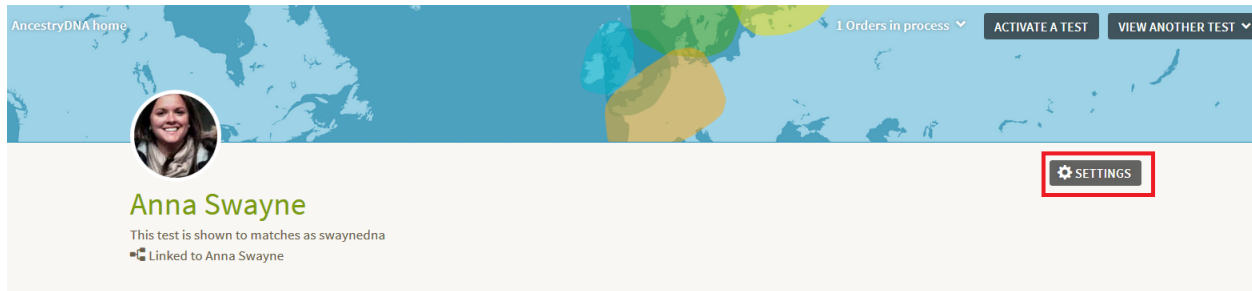
AncestryDNA Matching Features

Using the matching tools is a must for getting the most out of your DNA test results and solving research questions. Here are eight steps for finding success with your AncestryDNA matches.

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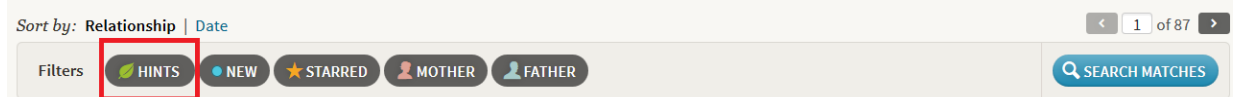
1. Make sure your test is attached to a tree.



AncestryDNA reveals cousin matches whether you have attached a test to an online tree or not. However, to learn more about those cousin matches and encourage them to work with you to uncover your common ancestors, you need to attach your AncestryDNA test to a public tree on Ancestry. Check to make sure your test is attached to the correct person in your family tree by clicking on the **Settings** button on your DNA home page.

Are you an adoptee looking for biological family members? Create a tree with “Biological Father” and “Biological Mother” listed instead of names so others know you are looking for biological family and can’t build a tree yet.

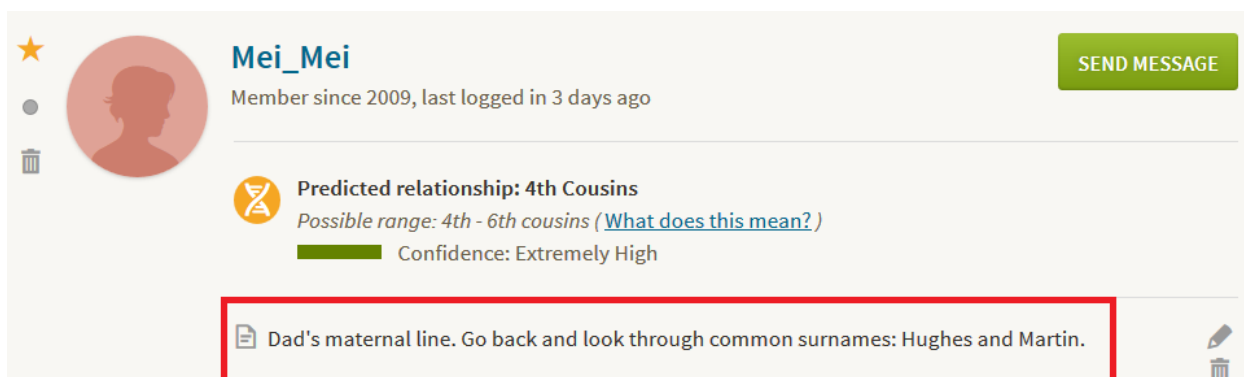
2. Use the Hints feature to see cousins you share an identified ancestor with.



Once your AncestryDNA test is attached to your tree, Ancestry goes to work trying to identify common ancestors in your tree and the trees of your matches. Use the Hints filter to discover where a shared ancestor has been identified in your trees. Review your tree and your match’s to ensure that the research is solid. If you notice any discrepancies, contact your new-found cousin and invite them to work together to figure things out.

3. Make notes so you can review later.

When viewing a match, use the Notes feature to write down actual relationships, common ancestors, or suspected connections. Once you save these notes, you can view them from the

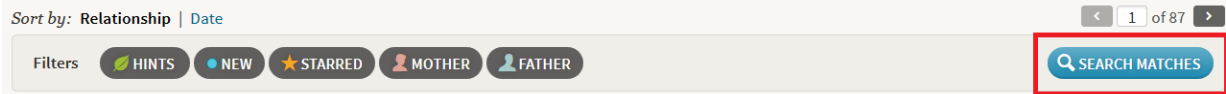


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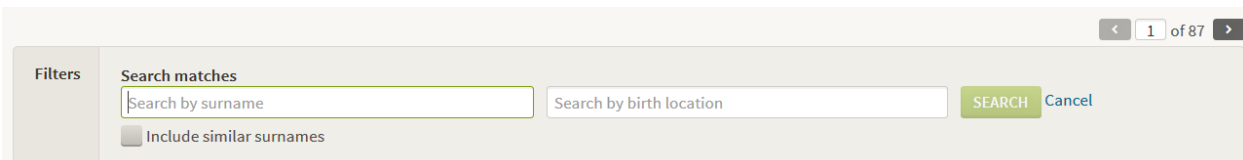
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Member Matches page without having to click through to each individual match's page.

4. Search by surname/birth location and look for patterns.

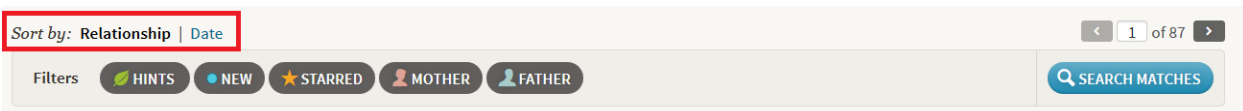


Once you've identified a match or two with the same common ancestor, spend a little time researching that family. Have you identified all of their children? Who did their daughters and granddaughters marry? Use the Search by surname filter to identify your AncestryDNA matches who also have a particular surname in their family trees.



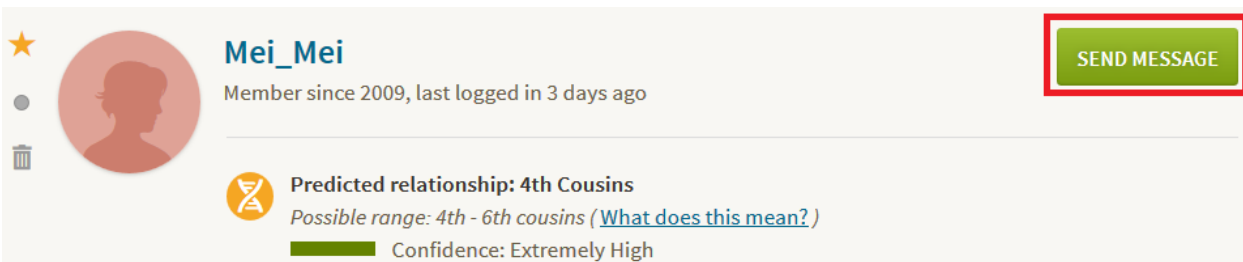
5. Check back regularly and sort by date to see your newest matches.

Every time someone else takes the AncestryDNA test, we compare their DNA to yours to see if you are related. If they are, we add them to your list of cousin matches. (I have had 196 new



matches in just the last 7 days.) As each of these new people build out their family tree, the possibilities of shared ancestor hints showing up increases. Check back regularly and sort your list by date to bring new matches to the top of the list. Be sure to go back to the Hints filter regularly to see what new hints have turned up as well.

6. Collaborate! Collaborate! Collaborate!



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On the profile page for each of your matches you will find a big green Send Message button. Use this to communicate with your matches. Introduce yourself. Ask questions about their research. Offer to share what you know. Establish a relationship. Don't forget to respond to matches who reach out to you. Even if you don't have information they're asking for, send a quick response to let them know.

7. New Shared Matches Tool

The Shared Matches filter will show you which other matches you and any given match on your list share in common. The list will include 4th cousin matches or closer. When you click **View Match**, the Shared Matches filter appears on the detail page for each of your matches. If you need help, click on the question mark for more information.

Shared Matches might help you determine which family line you share with a match or give you more evidence that you're related to a specific person or match.

8. Mother and Father Filters

If you have had a parent tested, you will automatically see a new filter option at the top of your match list page next to the Hints, New, and Starred filters that you should already be familiar with. You can now filter your matches by Mother or Father. That means, if you have tested your mother you can now see all the matches you share with her, narrowing down which DNA cousin matches might belong to that side of the family. Same goes for the Father filter.

Don't forget to use the Notes field as you examine your matches looking for patterns. Notes are for your personal use and can be seen only by you.