

WHAT'S IN YOUR DNA?

CHECK OUT FAMILY TREE DNA (FTDNA) FOR THE
ANSWER

By Marty Flanagan

THREE TYPES OF DNA

Autosomal DNA

Mitochondrial DNA (mtDNA)

Y-chromosome DNA (Y-DNA)

And the interesting X

FamilyTreeDNA Learning Center

[FAQs](#)[Glossary](#)[Beginner's Guide](#)[FTDNA User Guide](#)[Expert's Handbook](#)[Group Admin](#)

Maternal Line Testing

Everyone's mtDNA can trace their mother, her mother, her mother's mother, and so forth, and offers a clear path from you to a known, or likely, direct maternal ancestor.

[Read more >](#)

Paternal Line Testing

A man's Y-Chromosome DNA (Y-DNA) can trace his father, his father's father, and so forth. It offers a clear path from that man to a known, or likely, direct paternal ancestor.

[Read more >](#)

Autosomal DNA Testing

Your autosomal DNA (Family Finder test) uncovers more recent matches across all branches of your family, going back to all of your 32 great-great-great-grandparents.

[Read more >](#)

myFTDNA User's Guide

Your results and account are on your myFTDNA pages – get some help getting started setting up your account.

[Read more >](#)

Webinars

View our webinars live or recorded for additional help on the basics.

[Read more >](#)[Rectangular](#)

Order a Test

Can't decide what test to order? Need help making a payment? Want to change your order? Need a refund?

[Learn more >](#)

Shipping and Handling

Want to expedite your shipping? Not sure if the address was right? Lost your kit?

[Learn more >](#)

Troubleshooting

Can't sign in? Need help navigating the website? Having technical difficulties at familyreedna.com?

[Learn more >](#)

FTDNA Test Process

Want to know what happens to your sample after you send it in? Need to know the status of a test?

[Learn more >](#)

Account Settings

Need to change your name or address? Want a new password? Want to enter your surnames?

[Learn more >](#)

Interpret Your Results

Want to know where your Jewish roots show up? Can't understand why you have no matching surnames? Need to investigate your mtDNA results?

[Learn more >](#)

Group Projects

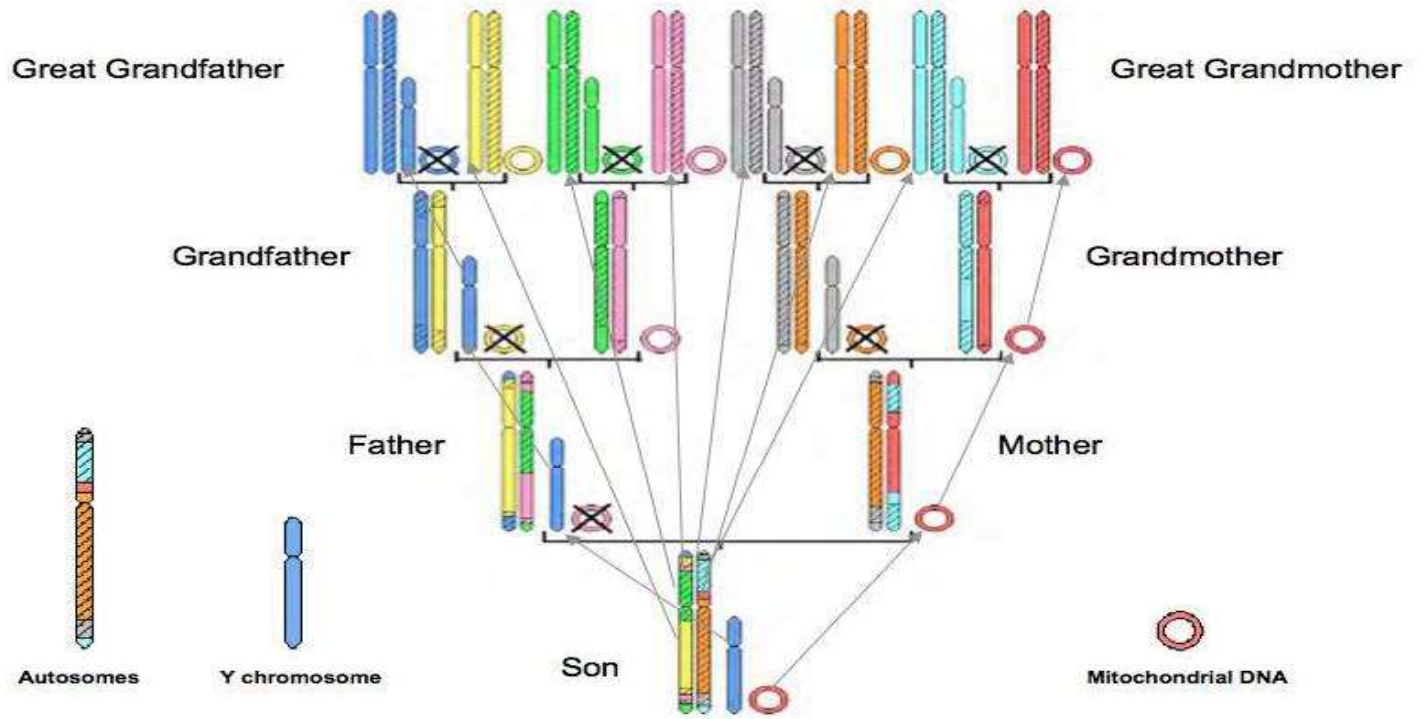
Should you join a group? Which one should you join?

[Learn more >](#)

Your Privacy

How do we use your results? Do we share your information with anyone?

[Learn more >](#)



Autosomal DNA

Autosomal DNA is the 22 pairs of non-sex chromosomes. Everyone (both biological males and females) inherits a random mix autosomal DNA from both of your parents (about 50% from your mother and about 50% from your father), and each of your parents inherited their autosomal DNA from both of their parents and so forth. Because autosomal DNA is a mixture of your mother's and father's DNA, it is unique to each person and both biological males and females can take this test.

Block	min cMs	max cMs	Your match's generation relative to you				
			younger X2	younger	same generation	older	older X2
1	3000	3500		Child		Parent	
2	2200	2999			Full Sibling		
3	1200	2199		Niece/ Nephew	Half Sibling	Aunt/ Uncle	
4	650	1199	Great N/N	Half N/N	1C	Half A/U	Great A/U
5	340	649	Half Great N/N	1C1R	Half 1C	1C1R	Half Great A/U
6	200	339	1C2R	Half 1C1R	2C	Half 1C1R	1C2R
7	90	199	Half 1C2R	2C1R	Half 2C	2C1R	Half 1C2R
8	60	89	2C2R H2C2R	H2C1R 3C1R	3C H3C	H2C1R 3C1R	2C2R H2C2R
9	20	59	4C2R	4C1R	4C 5C	4C1R	4C2R

The Shared cM Project – Version 3.0

August 2017

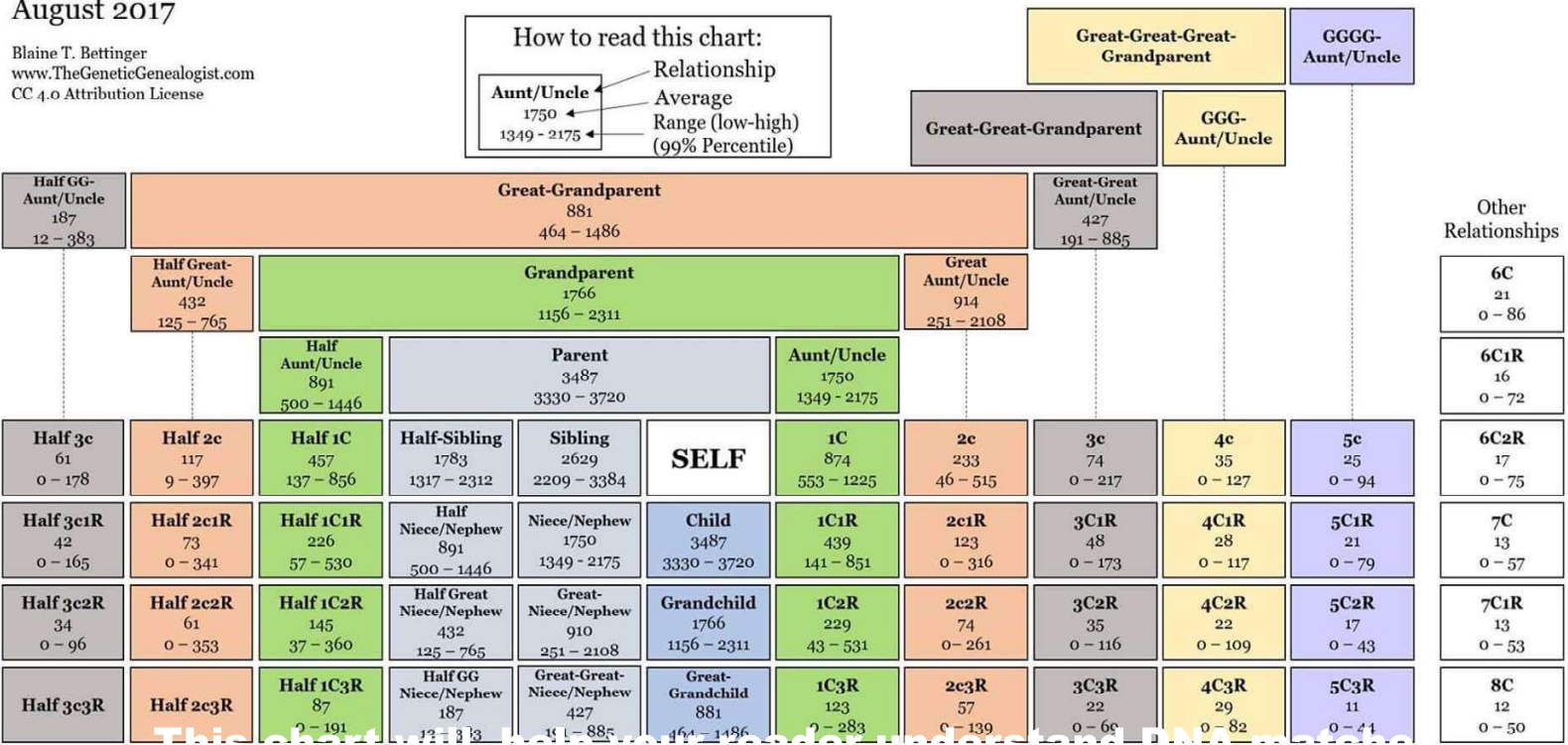
For MUCH more information (including histograms and company breakdowns) see: goo.gl/Z1EcJQ

Blaine T. Bettinger
www.TheGeneticGenealogist.com
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How to read this chart:

Relationship
 Average
 Range (low-high)
 (99% Percentile)

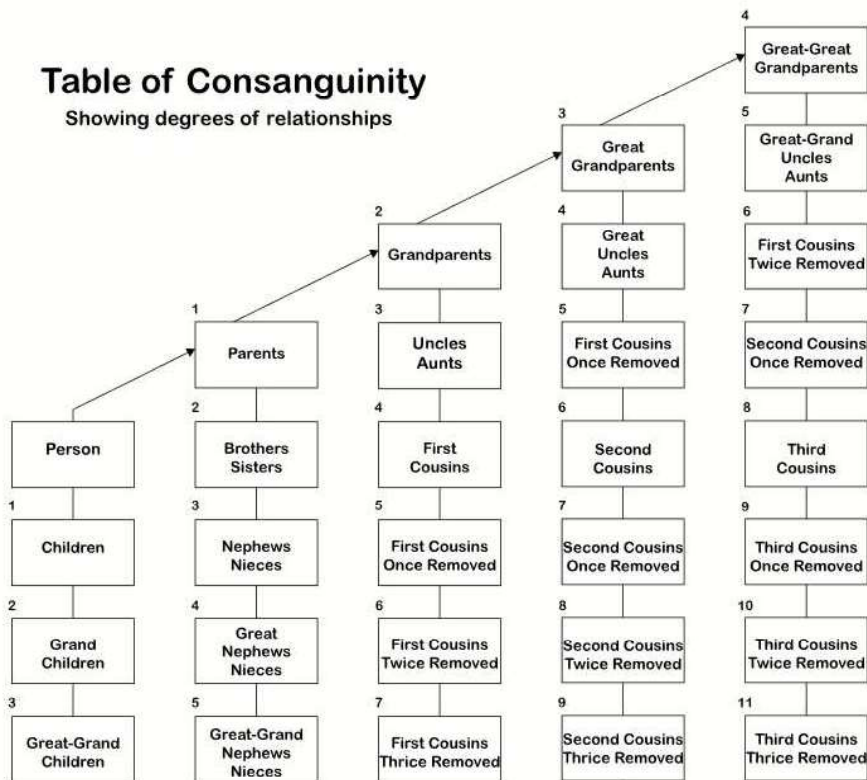
Aunt/Uncle
 1750
 1349 - 2175



Minimum was automatically set to 0 cM for relationships more distant than Half 2C, and averages were determined only for submissions in which DNA was shared

Table of Consanguinity

Showing degrees of relationships



IMPORTANT
INFORMATION

KNOW HOW YOU ARE
RELATED

UNDERSTAND ONLY
4TH OR 5TH GREAT
GRANDPARENTS
SHARE DNA

Y-chromosome DNA (Y-DNA)

The Y chromosome is a sex chromosome. Sex chromosomes carry the genetic code that makes each of us male or female. All people inherit two sex chromosomes. One comes from their mother and the other from their father. Men receive a Y chromosome from their father and an X chromosome from their mother. Men and only men inherit their father's Y chromosome. It is passed down from father to son in an unbroken line all the way back to our earliest ancestors in Africa.

Match probabilities

36/37 marker match

Probability that X and Y shared a common ancestor within:

- 4 generations is 59.01%
- 8 generations is 89.04%
- 12 generations is 97.47%
- 16 generations is 99.46%
- 20 generations is 99.89%
- 24 generations is 99.98%

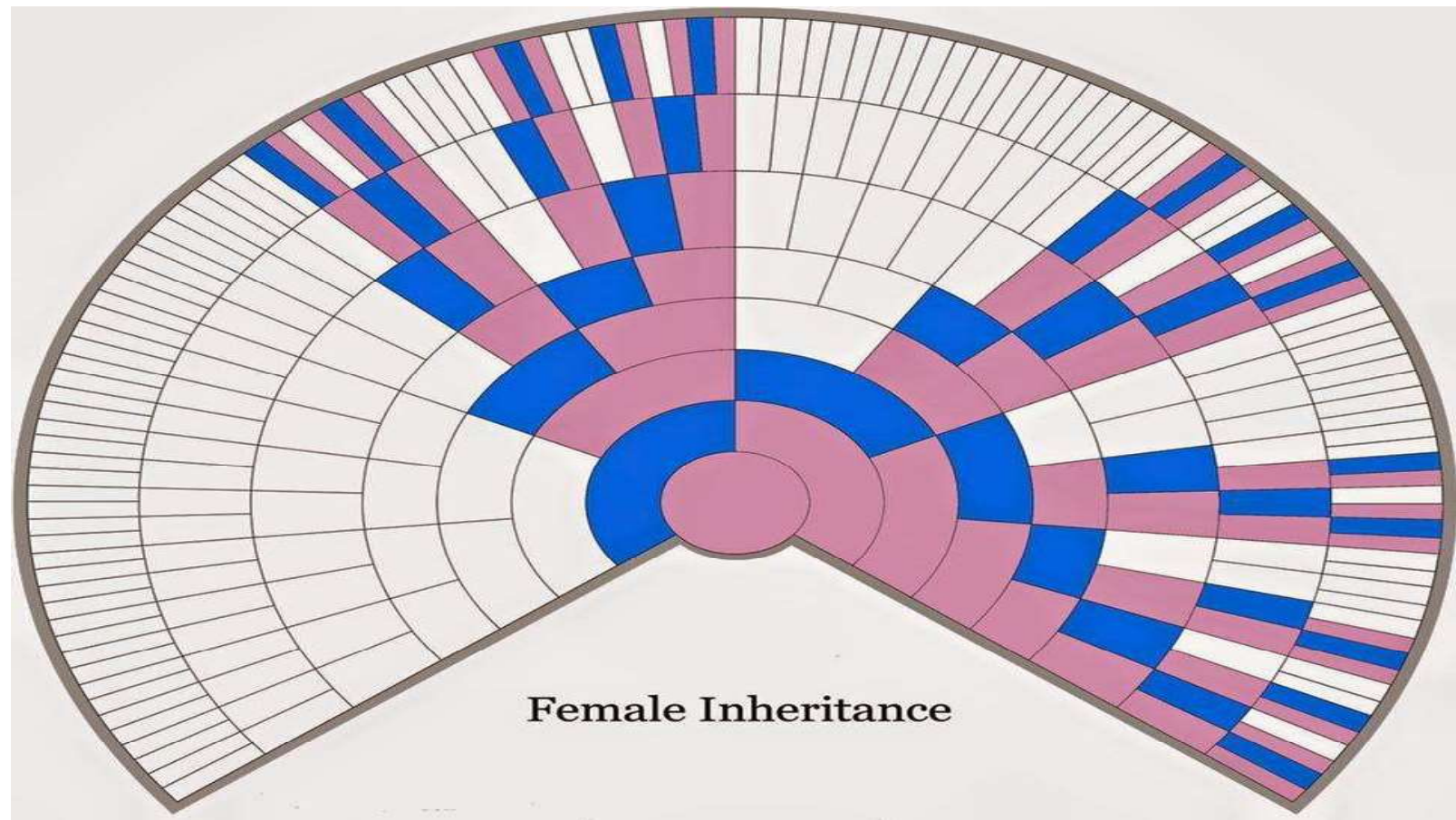
66/67 marker match

Probability that X and Y shared a common ancestor within:

- 4 generations is 71.63%
- 8 generations is 95.18%
- 12 generations is 99.30%
- 16 generations is 99.91%
- 20 generations is 99.99%
- 24 generations is 100.00%

Mitochondrial DNA (mtDNA)

Both men and women have mitochondria and mtDNA in their cells, but only women pass it on to their children. Because of this unique matrilineal inheritance, we can use mtDNA to trace your direct maternal line. Your mtDNA traces your mother, her mother, her mother's mother, and so forth and offers a clear path from you to a direct maternal ancestor. Rather than having multiple chromosomes, mitochondria have a single circular chromosome. The DNA is made of two major parts, the control region and the coding region.



Female Inheritance

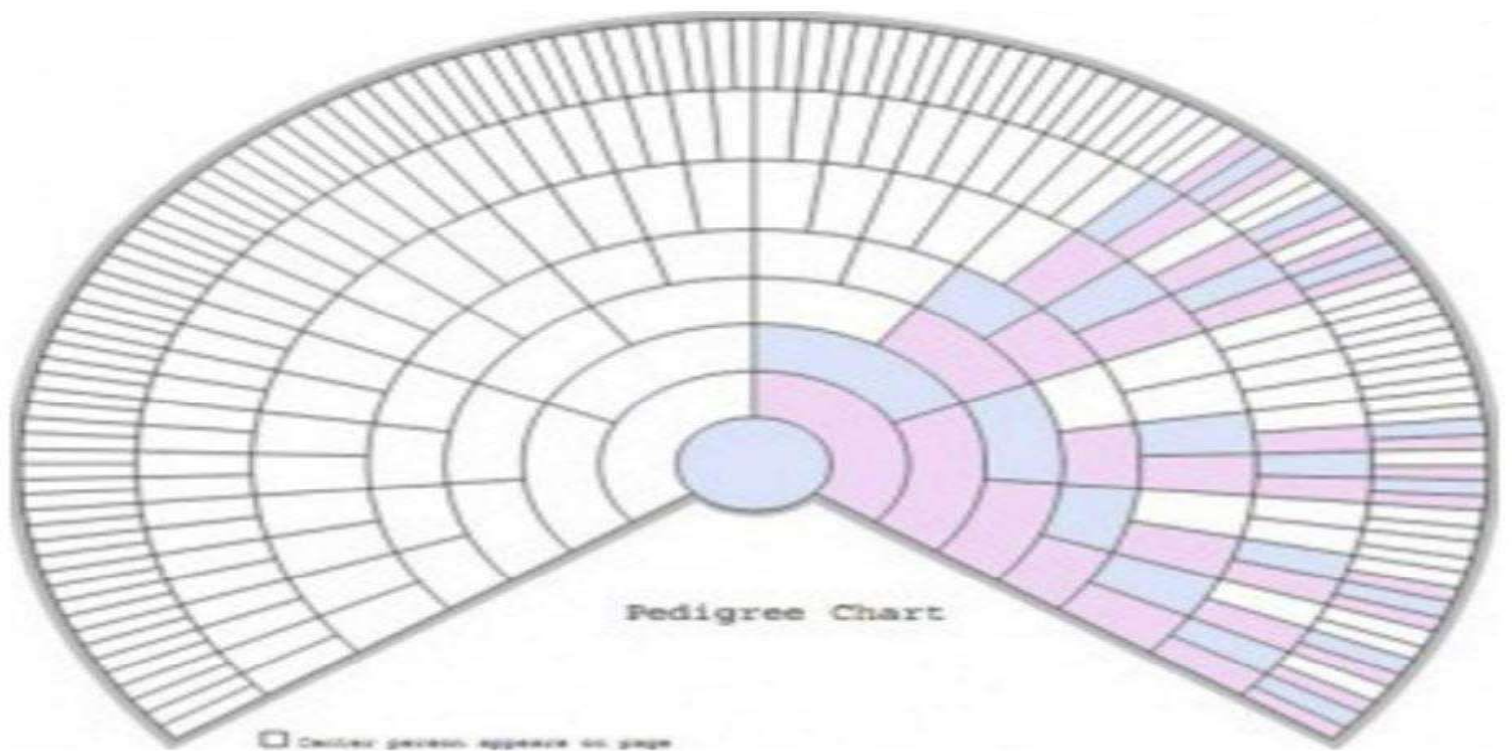


Chart for male inheritance. Courtesy of