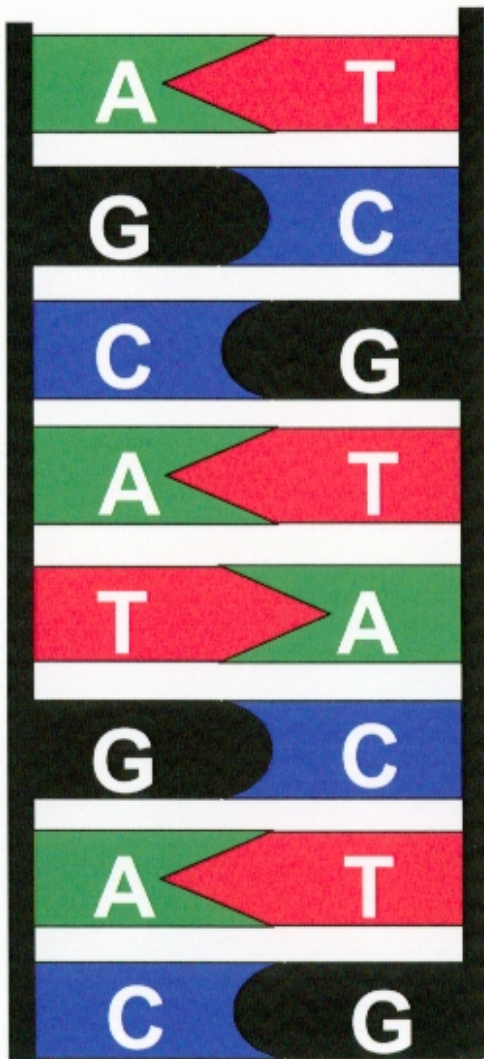


# What is DNA?



- **D**eoxyribo**N**ucleic **A**cid
- found in most cells
- two strands form a twisted ladder
- ladder rungs made of pairs of “**bases**”-- building blocks of DNA
  - 4 bases -- G, C, A, T
- **order** of bases is important
  - 123-1234 vs. 321-4321





# Sources of DNA

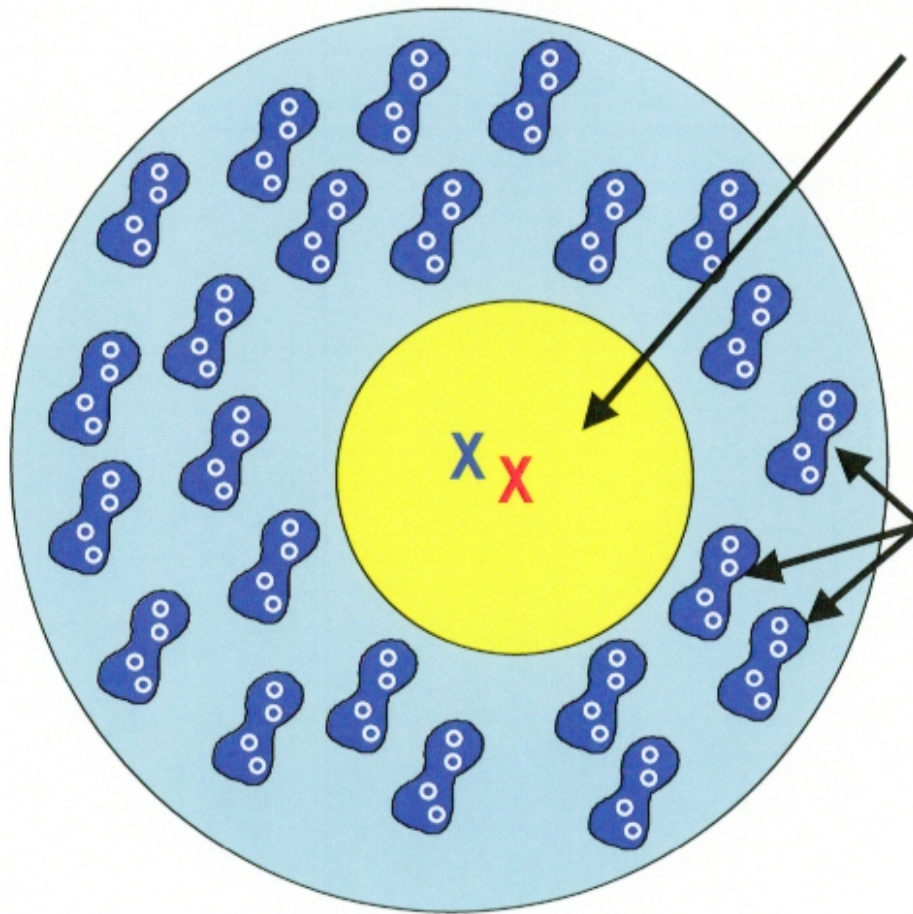
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## Nuclear

- 2 copies per cell
- inherited from both parents
- unique to individual

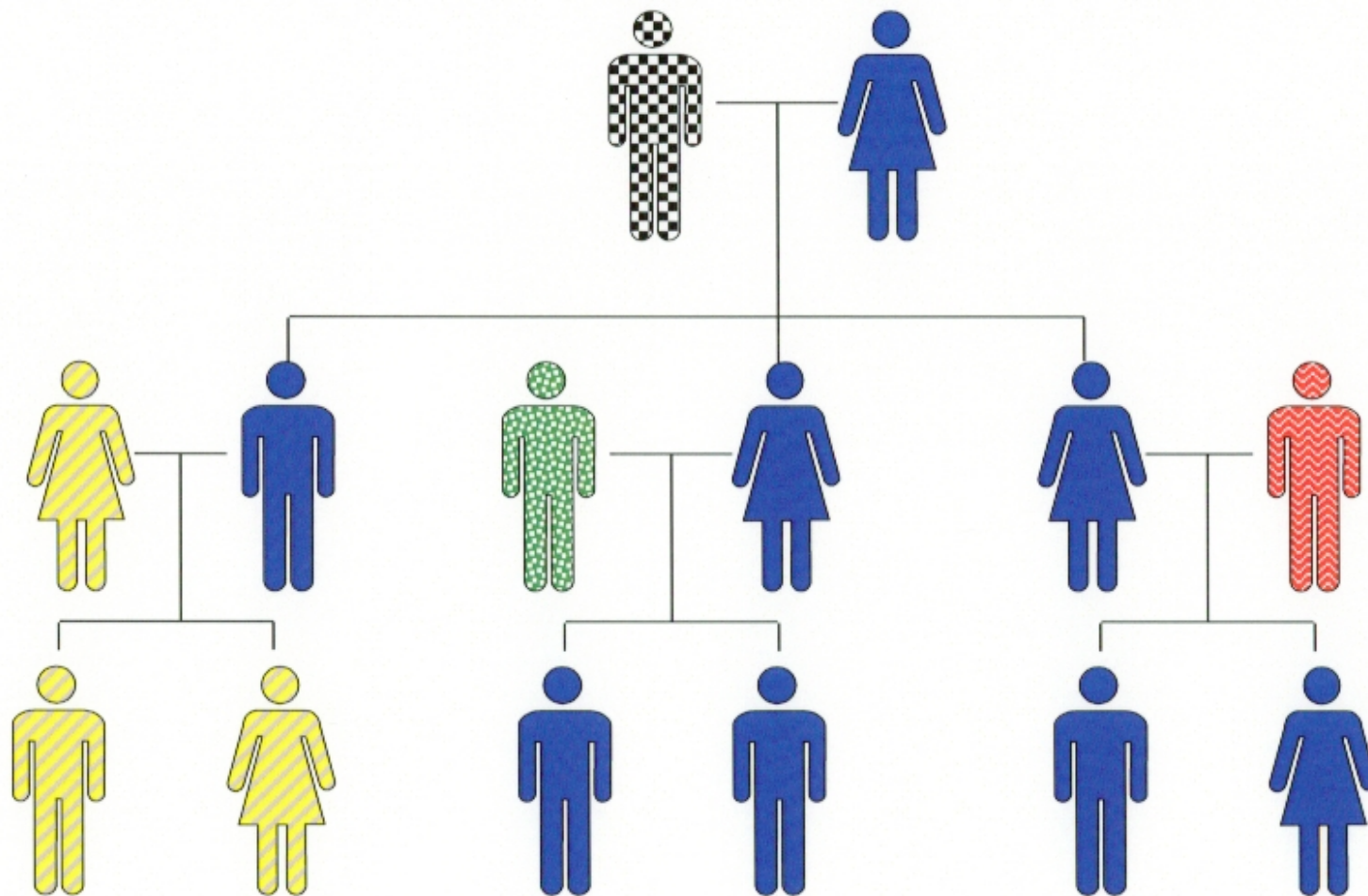
## Mitochondrial

- ~1000 copies/cell
- maternally inherited
- not unique to individual



# Maternal Inheritance

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# mtDNA analysis

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- Determine order of bases
- Compare sequences

	<u>Case #1</u>	<u>Case #2</u>
<b>Q</b> uestioned	GCA <u>T</u> ATT <u>G</u> CG <u>C</u> CTA	GCATATTGCGCCTA
<b>K</b> nown	GCA <u>C</u> ATT <u>A</u> CG <u>T</u> CTA	GCATATTGCGCCTA
	EXCLUSION	CANNOT EXCLUDE



# Compare sequence to database sequences

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