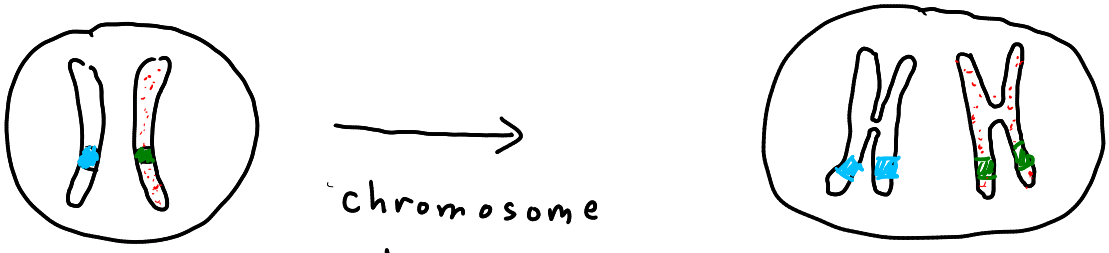
Evolution: Start w/ a simplified view of biological "copying"

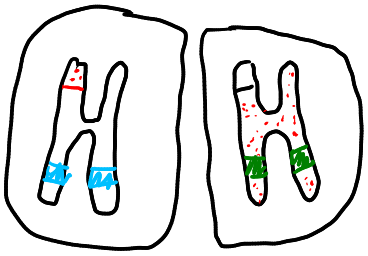
diploid organism = two copies of chromosomes



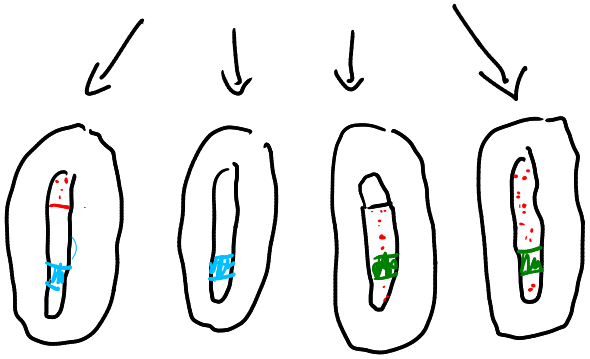
focus on one location on chromosome = locus

🟩 🟦, etc = different variants at that location (alleles)

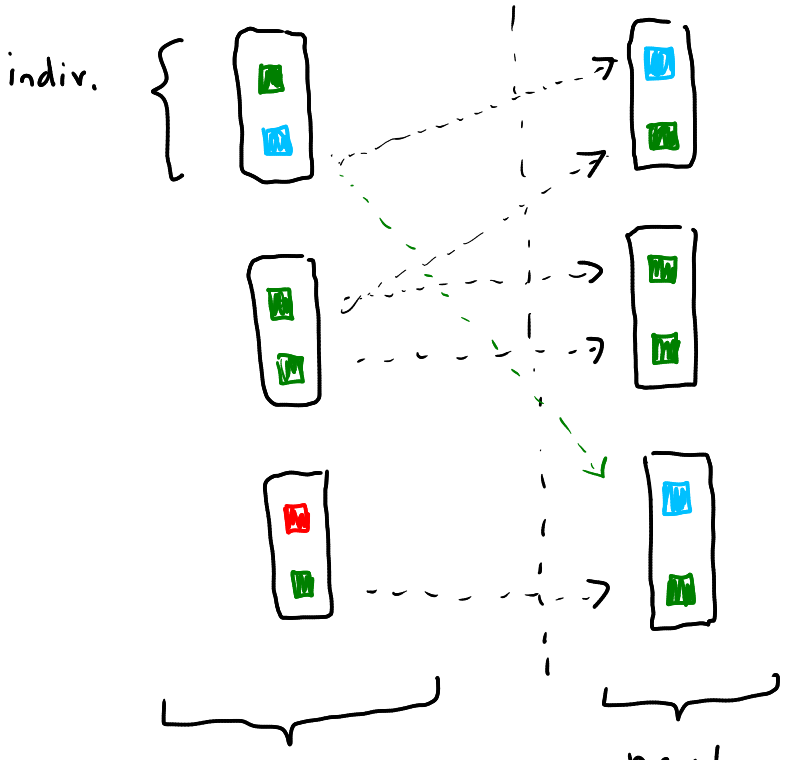
recombination (swapping of sections of chromosomes)



gametes (eggs or sperms)



abstract away whole process to a simple model focused on one locus across the whole population:



(size N population = 2N alleles)

(same size N)

"dumbest" model:

neutral Wright-Fisher model (WF)

rule for creating next generation:

Choose each "parent" of the allele randomly from previous generation

genetic "drift"

⇓

{ captures the effect of random sampling

Reasons why this model is dumb:

	will fix
• fixed population size from gen. to gen.	✓
• self-fertilization technically allowed (unlikely as $N \to \infty$)	✓
• mating is completely random (no male/female distinctions, etc.)	✓
• no natural selection (no fitness differences)	✓

- no mutation ✓
- no recombination ✓
- no spatial structure affecting reproduction
- interactions between genes, epigenetic changes in gene expression
- generation time is fixed, no overlapping generations ✓