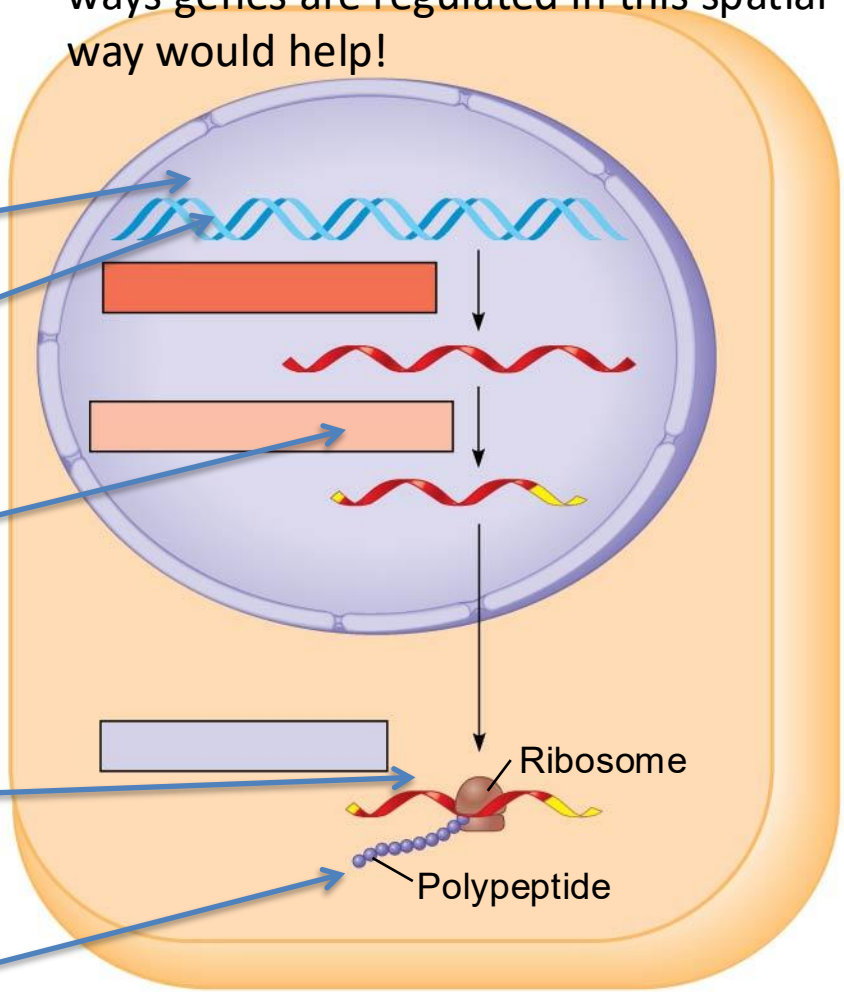
Map the following processes onto the image. Where and when does each take place and what does each do? (I just put the arrows in-you can look up what each does!)

These are kind of imprecise arrows but I thought thinking about the different ways genes are regulated in this spatial way would help!

- epigenetic modifications
- transcription factors
- post transcriptional modification (RNA processing, RNA splicing)
- microRNA
- post translational modification



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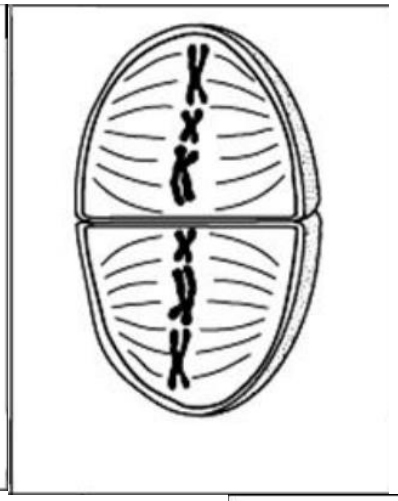

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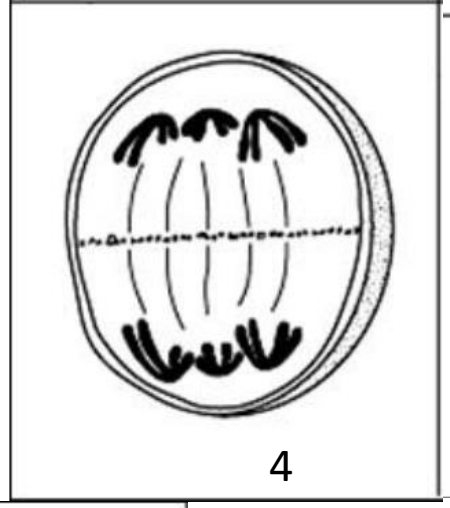

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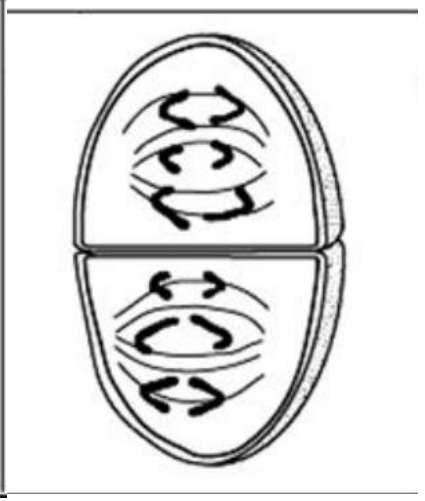
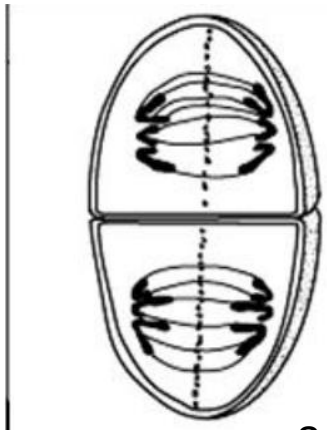


7

1



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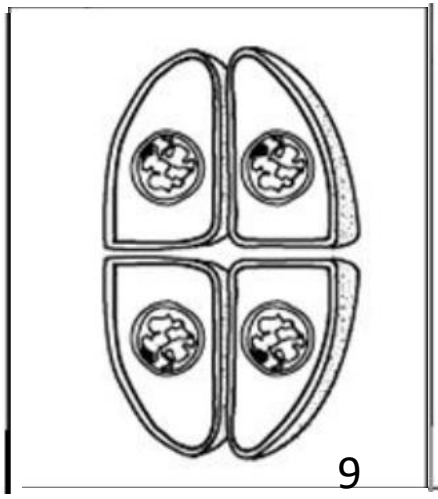

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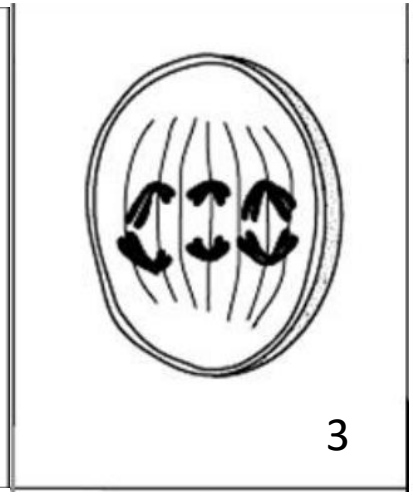

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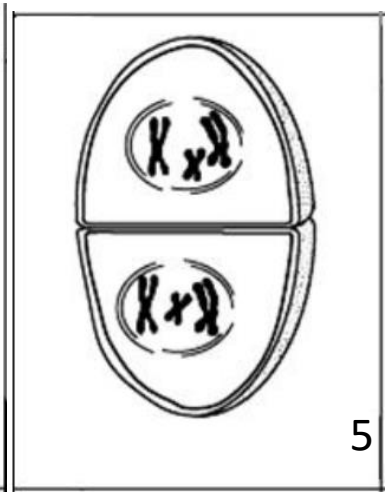
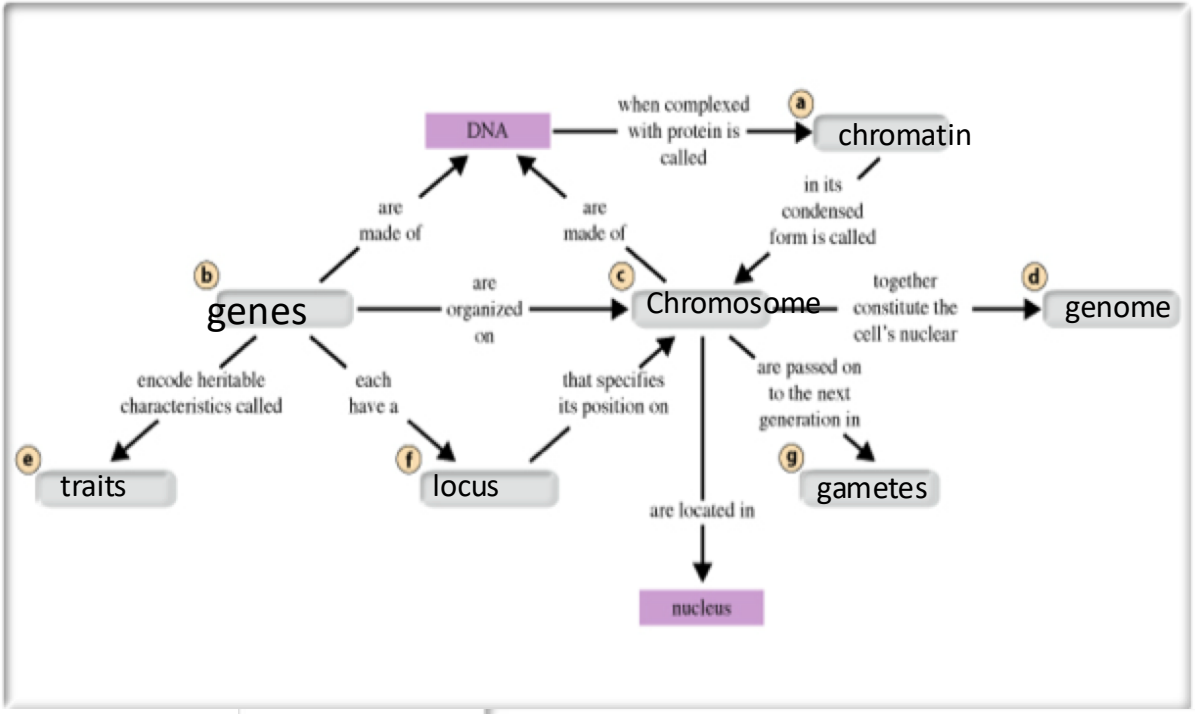


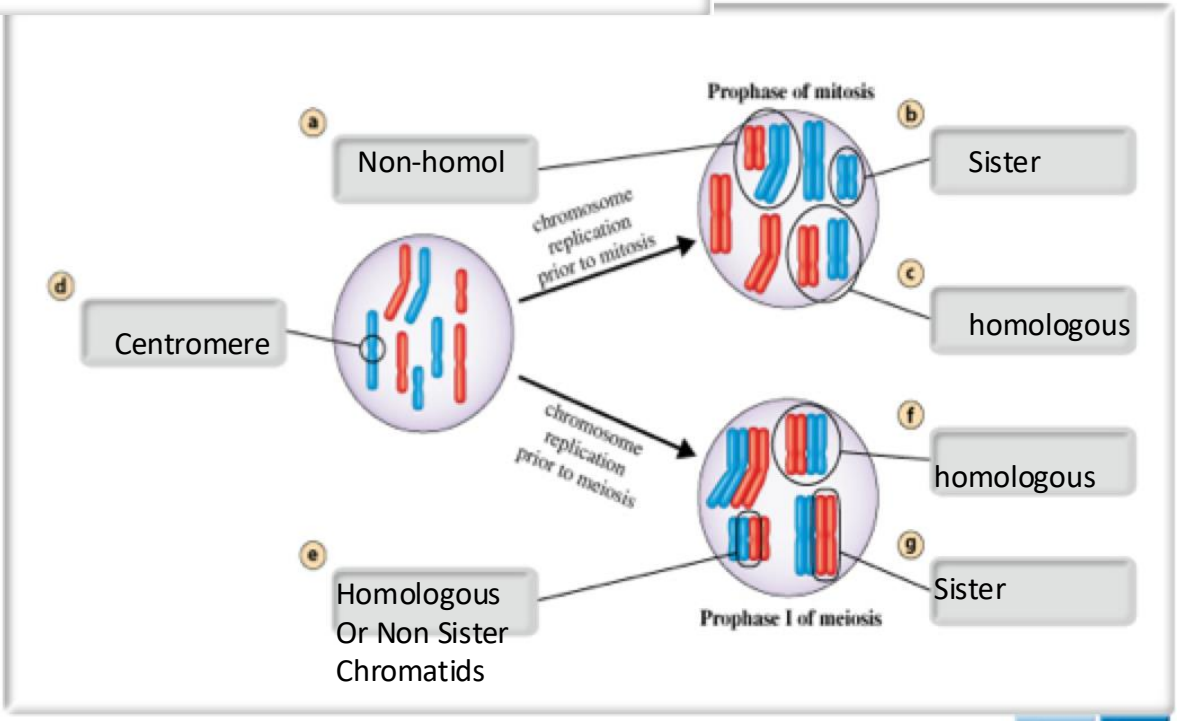
5

genes
locus
traits
genome
gametes
chromosomes
chromatin

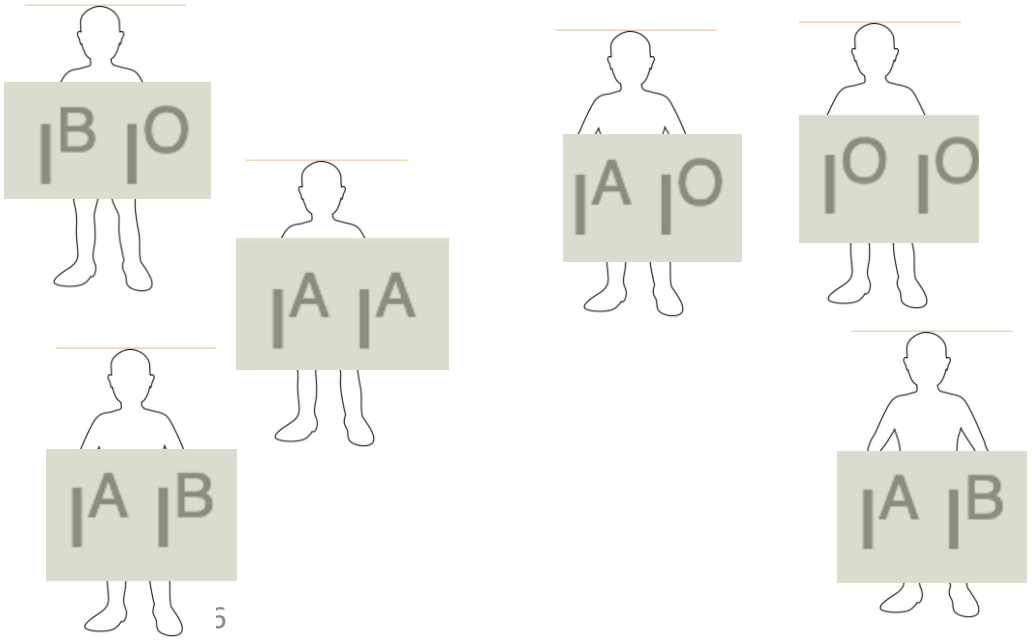


FYI: We did not emphasize the terms chromatin and centromere!

centromere
homologous chromosomes
non-homologous chromosomes
sister chromatids
nonsister chromatids



- How many alleles are there in this population at this blood group locus? 3
- How many possible genotypes are there given the number of alleles in the population? 6
- Describe the relationship between the A and the O allele when an individual's genotype is AO? Dominance
- Describe the relationship between the A and the B allele when an individual's genotype is AB? Codominance
- Cross an I^AI^O individual with a I^BI^O individual using a Punnett square and show your work. What would the genotypes and phenotypes be in the next generation?



$I^A\ I^O$ x $I^B\ I^O$

	A	O
B	AB	BO
O	AO	OO

Phenotypes AB, B, A, O