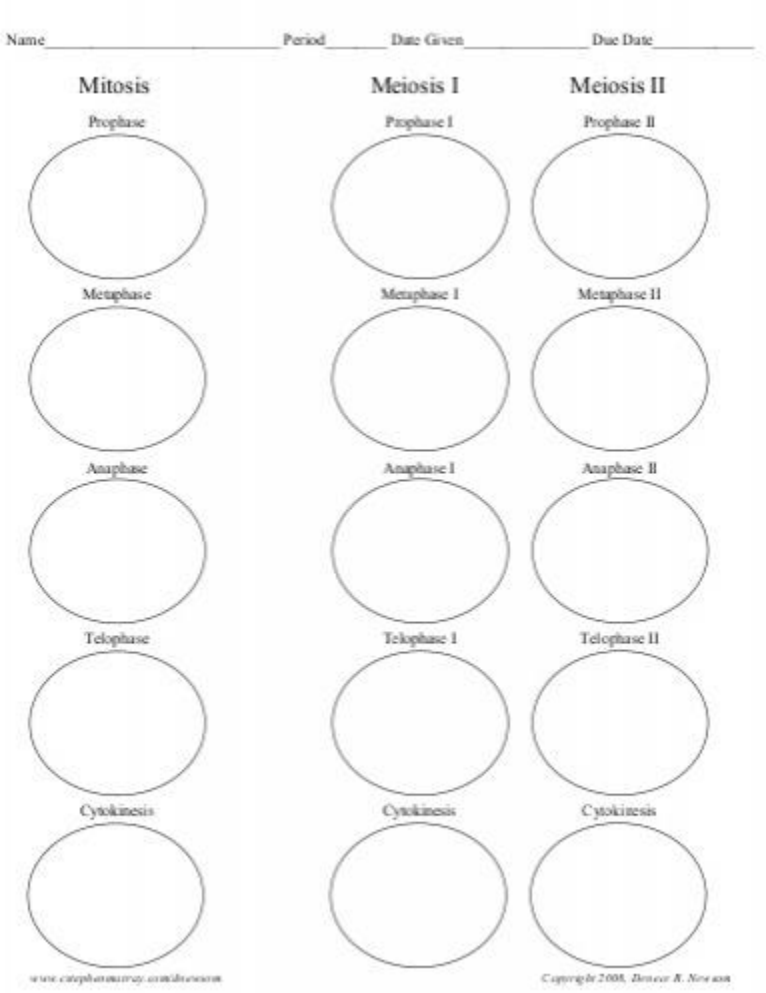
# Bio Semester 2 final:

**Meiosis:**

Draw the insides of each cell…




Define haploid:

Define Diploid:

Define Gamete:

Explain how body cells differ from gametes:

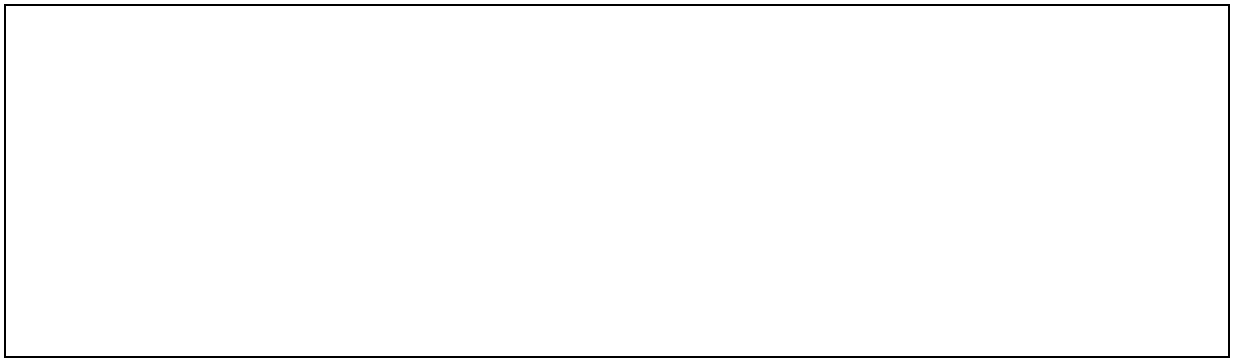
How many chromosomes does a normal body cell have?

How many chromosomes does a sex cell (gamete) have?

Define crossing over:

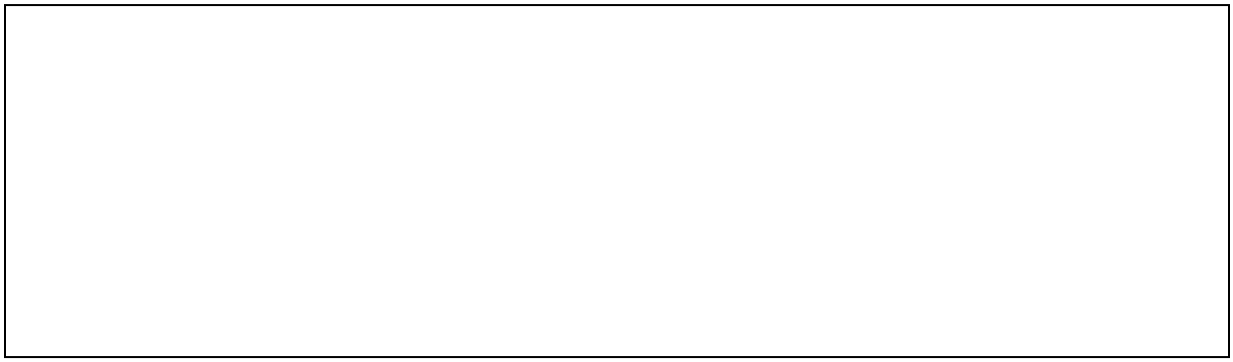
When does crossing over happen?

Draw a picture of crossing over and explain what's happening in it in your own words.



Explain the difference between homologous chromosome and sister chromatids.

Draw a picture of homologues chromosomes and next to that draw a picture of sister chromatids.



**Ecology:**

Define producer:

Define consumer:

List and describe each trophic level:

Why is only 10% of the energy available at each trophic level passed on through the food chain?

Compare biotic to abiotic and list examples of each.

Define species:

Define population:

Define community:

Define ecosystem:

List the parts of the ecosystem in order from smallest to largest.

Define and give and example of primary succession:

Define and give an example of secondary succession:

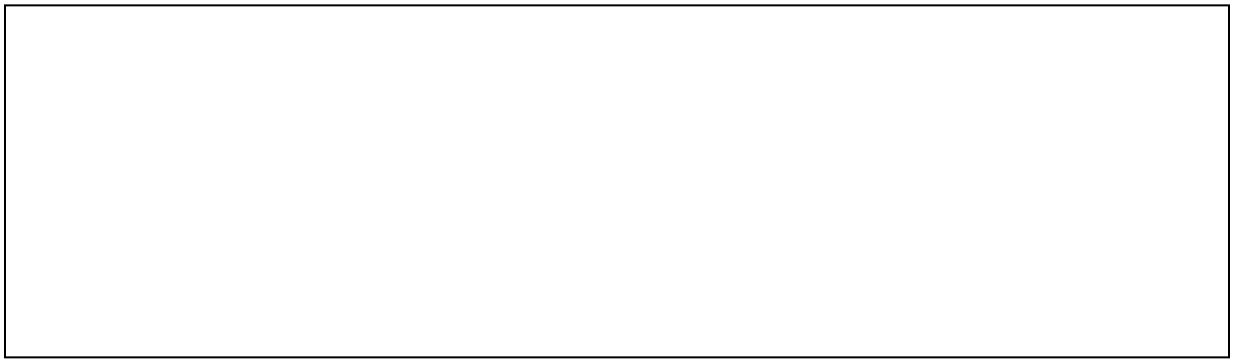
Define symbiosis:

Define and give an example of mutualism:

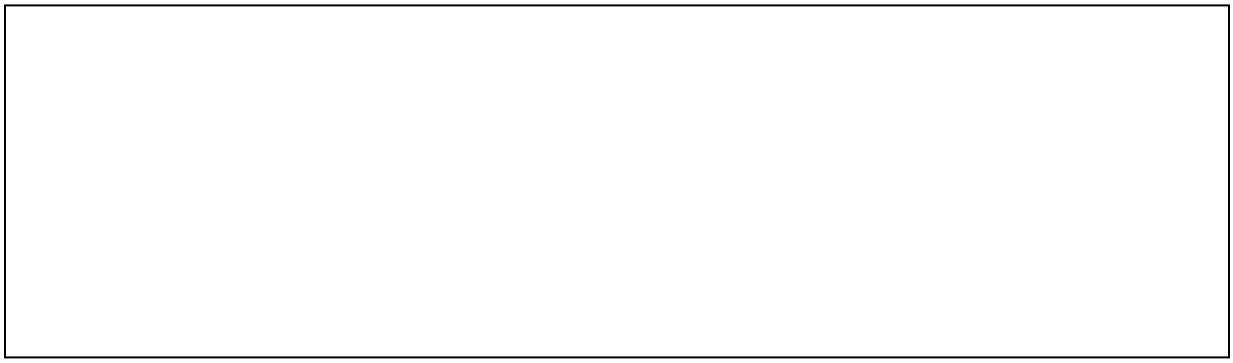
Define and give an example of commensalism:

Define and given an example of parasitism:

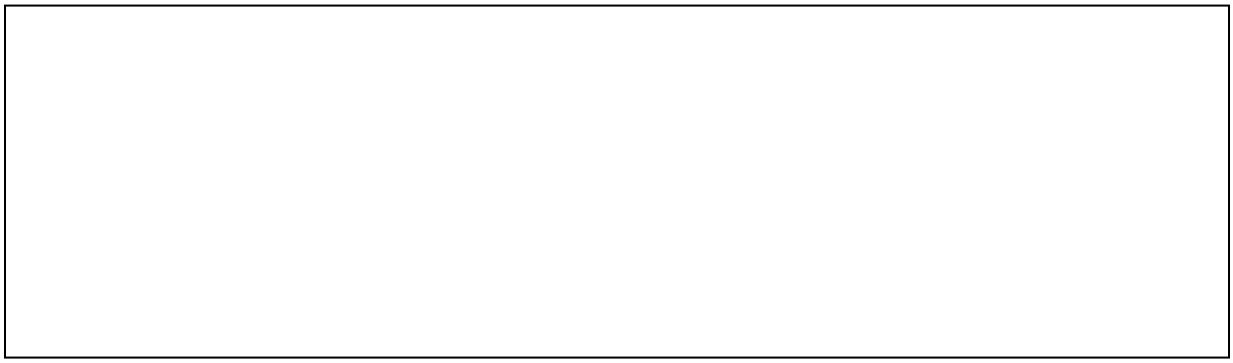
Draw the nitrogen cycle:



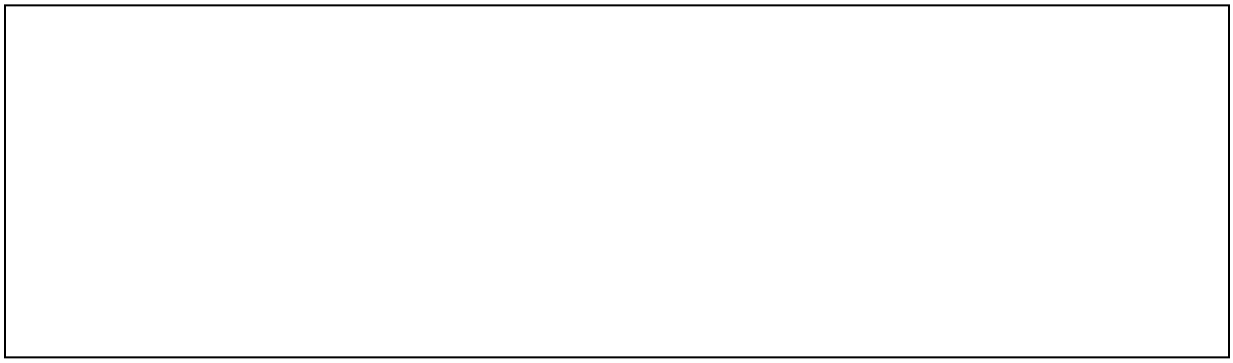
Draw the carbon cycle:



Draw the water cycle:



Draw a food web made up of the following organisms ( algae, krill, cod, leopard seal, penguin, squid, elephant seal, killer whale)



**Evolution:**

Define adaptation:

Define evolution:

Explain natural selection:

Look up Darwin's finch in the Galapagos, explain what events took place to produce the bird populations we have there today.

What factors do we need to have in order for new species to form?

Define geographic isolation:

Define reproductive isolation:

Define bottleneck effect:

Define and give an example of homologous structures:

Define and give examples of analogous structures:

Explain how fossils, anatomy, and DNA are used to support evolution:

**Genetics:**

Define phenotype:

Define genotype:

Define law of segregation:

Define law of independent assortment:

Define and give an example of homozygous:

Define and give an example of heterozygous:

Define codominance and give an example:

What is a sex-linked trait?

Complete this cross and explain how you determined the genotype and phenotype of the F1 generation.

| |
|---|
| BbxBb |

Complete a cross between two pink flowering plants and explain your results:

RW x RW

Draw out the genetic makeup (genotypes) for each of the human blood types:

Complete this cross and explain how you did it:

Man with type O blood crossed with a woman heterozygous type A

**DNA:**

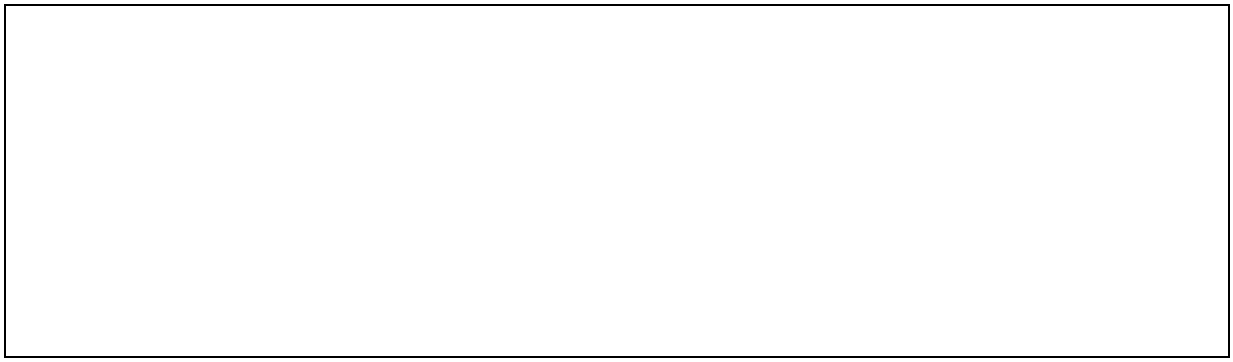
List and draw all the parts of DNA:

List and draw all the parts of RNA

Explain transcription:

Explain translation:

Draw the three different types of RNA: ( mRNA, tRNA, rRNA)



Convert this sequence of DNA into mRNA and then to amino acids using the codon chart from your book:

AAT GCC TTC CCC GGG AAA TAC

What does Chargaff's rule teach us?

Define DNA replication:

What sugar is in DNA, and in RNA?

What are the four DNA bases, and the four RNA bases?