3.1 Genes

Genes

Define the following terms

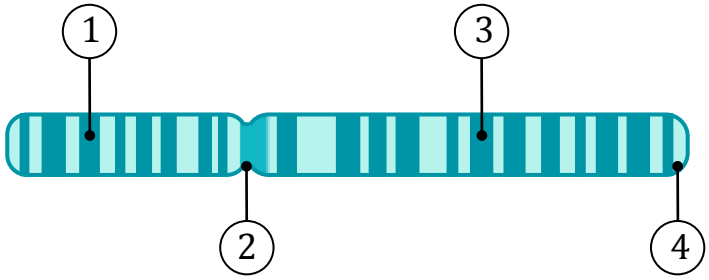
Gene: ……

Locus: ……

Allele: ……

Label the parts of the following chromosome

1. ……
2. ……
3. ……
4. ……



Complete the following table comparing the genetic composition of various organisms

	Genome Size	**Diploid Number**	**Number of Genes**
T2 Phage (virus)		Not applicable	280
E. coli (bacteria)		Not applicable	
O. sativa (rice)	470 Mb		
P. japonica (canopy plant)		40	Unknown
D. melanogaster (fruit fly)		8	
P. equorum (round worm)	185 Mb		14,000
C. familiaris (dog)	2,900 Mb		20,000
P. troglodytes (chimp)	3,300 Mb		
H. sapiens (human)			

Define genome

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List three potential applications of the completed Human Genome Project

1. ……
2. ……
3. ……

Mutations

Identify three types of mutagens (including an example of each)

1. ……
2. ……
3. ……

Distinguish between somatic and germline mutations

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Explain the consequences of a base substitution mutation in the development of sickle cell anaemia

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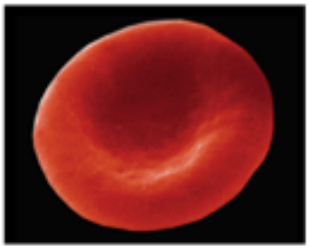

Normal Blood Cell

Sickle Blood Cell