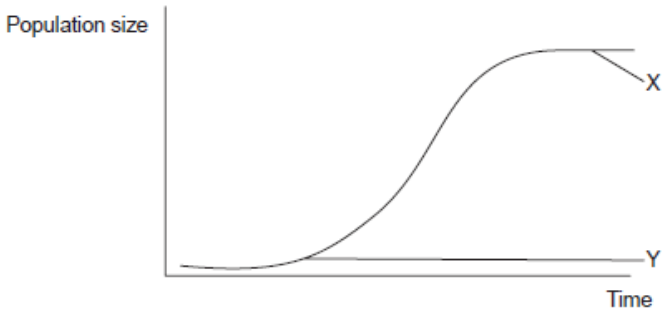
SL Paper 2

a. List **two** factors that could cause an increase in the size of an animal population. [2]

1. .....
2. .....

b. Outline how overpopulation of a species in a given environment may lead to evolution. [4]

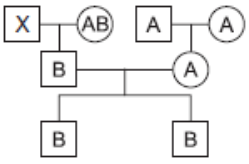
The graph shows a sigmoid population growth curve.



The table summarizes the genome size of several organisms.

Organism type	Organism	Genome size / base pairs
Bacterium	*Helicobacter pylori*	1667867
Fruit fly	*Drosophila melanogaster*	130000000
Rice	*Oryza sativa*	420000000
Human	*Homo sapiens*	3200000000

The figure shows a pedigree chart for the blood groups of three generations.



a. Identify the phases labelled X and Y. [1]

X:

Y:

b. Outline how fossil records can provide evidence for evolution. [2]

c(i). Distinguish between the terms genotype and phenotype. [1]

c(ii) Outline a structural difference between the chromosomes of *Helicobacter pylori* and *Homo sapiens*. [1]

c(iii) Deduce the percentage of adenine in *Oryza sativa* if the proportion of guanine in that organism is 30 %. [1]

d(i) Deduce the possible phenotypes of individual X. [1]

d(ii) Describe ABO blood groups as an example of codominance. [1]