

THE GENETIC BASIS FOR EVOLUTION

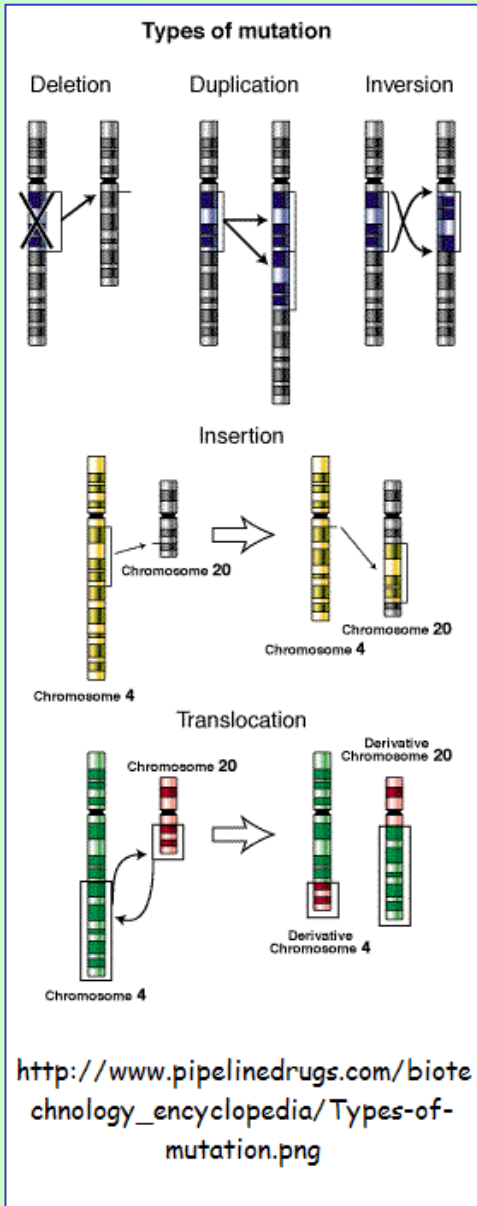
Information

MUTATIONS: definition and causes

Mutations are changes in the genetic material.

They can be caused by:

- errors when DNA is copied (during cell division)
- certain chemicals
- ionising radiation (X-rays and gamma rays)



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Exercise

Explain two situations in which the risk of mutation in humans is possible:

1)

2)

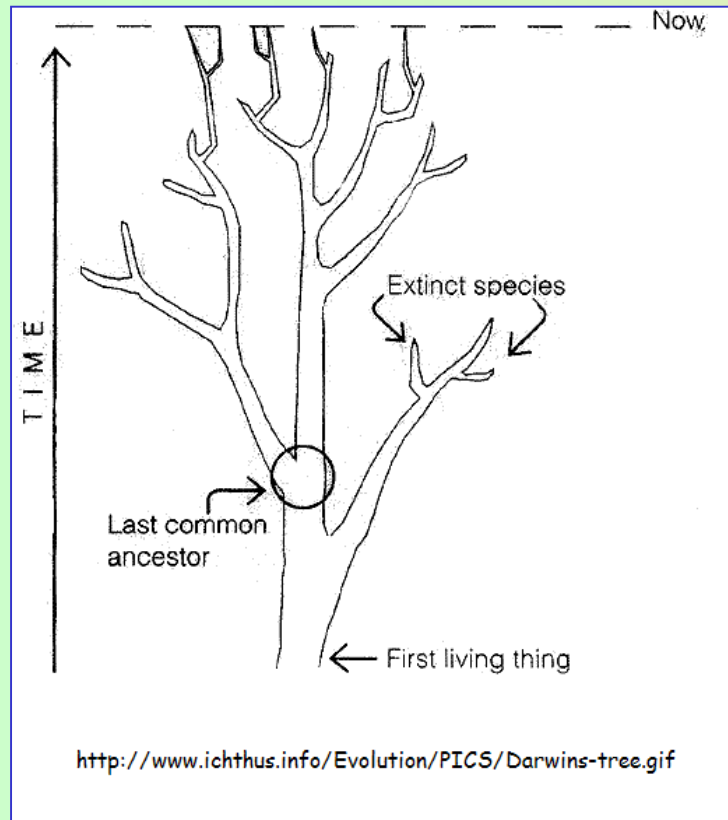
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MUTATIONS and NATURAL SELECTION

If a mutated gene is in a sex cell, copies of it can be passed on to offsprings.

It is only these mutations in the sex cells that play a role in natural selection.



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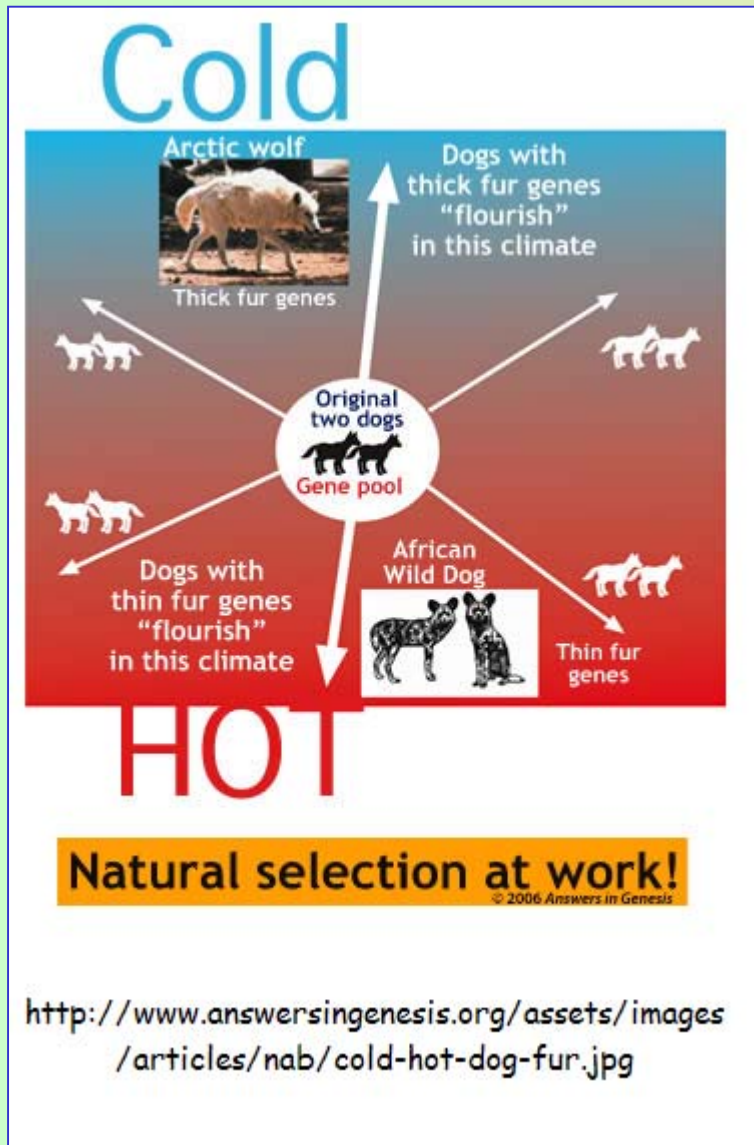
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MUTATIONS and NATURAL SELECTION

Most mutations are probably neutral, having no effect on the characteristics of an organism.

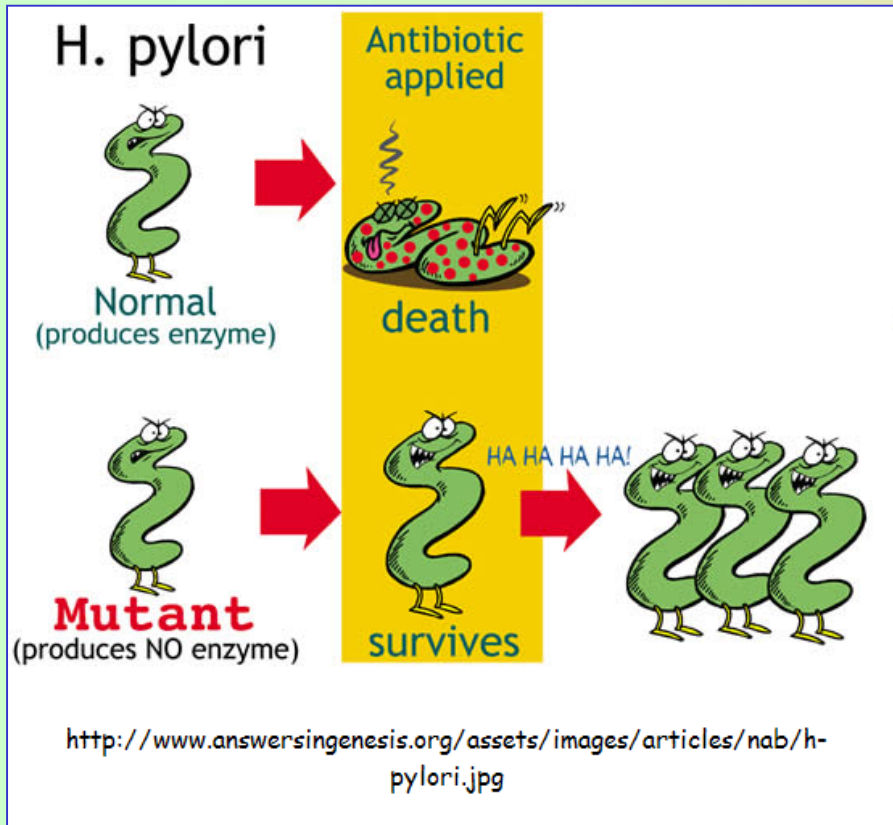
Sometimes they are harmful.

Occasionally they may be beneficial. Whether a mutation is beneficial or not depends on the environment.



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Exercise



Explain the picture in terms of mutation and natural selection.