

REPRODUCTION.

Reproduction is one of the fundamental attribute of a living organism. A living organism produces their own kind through this process.

It is not an essential life process because it is not necessary for survival.

Significances : —

Continuation of life → It is essential for continuation of life on Earth. (Maintaining species)

Perpetuation of Species → Reproduction carries the genetic features of parents into new individuals.

Replacement → It is a means of replacing individuals killed due to ageing, disease and predation.

Variations → It introduces new variations.

Evolution → More no. of variations over generations leads to Evolution (Production of new species).

Importance of Variations.

Variation is important for the survival of species over period of time.

Variation gives some individuals in a population the ability to cope (adjust) with any drastic change in the environment (changes - temp. range, varying water level.)
Ability comes from variation caused by changes in D.N.A

Do Organisms create Exact Copies OF Themselves?

Organisms produce similar offspring, but not exact copies of themselves.

At the cellular level reproduction involves: -

copying of D.N.A.

creating the cellular apparatus for new cell.

Then nucleus divides and separates two copies of D.N.A.

Finally, the cytoplasm divides and separates cellular apparatus.

Thus a cell divides to produce two new similar cells.

D.N.A carries information for making proteins. D.N.A copying is one biochemical process which is not ~~hundred percent~~ an accurate process by which errors occur in new D.N.A. This errors in D.N.A leads variation in the offsprings.

During D.N.A copying two copies are produced.

One copy is unable to work with new cellular apparatus due to drastic changes, die.

Another copy able to work with cellular apparatus and survive similar to parent cell. (Not identical)

So D.N.A copying is the cause of variations in new individuals produced by living organisms
