

"Reproduction ensures continuity of life ✨"

How do Organisms Reproduce?

Class 10 Science - Chapter Notes

Asexual Reproduction

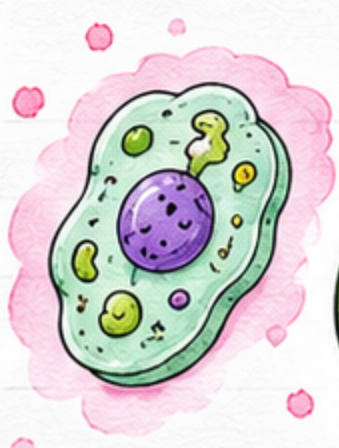
Sexual Reproduction

DNA Copying

Variation

Through reproduction, organisms produce new ones of their own kind.

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Why Do Organisms Reproduce?



CHAPTER OVERVIEW

Reproduction is a biological process by which organisms produce new individuals of their own kind. It ensures the continuity of life on Earth from generation to generation.



THE BLUEPRINT OF LIFE

DNA acts like a blueprint. It carries instructions for making proteins. Proteins build and control our body structure, functions and behaviour.



THE BIG PICTURE

Organisms



Reproduction



New Individuals



Continuity of Species



This process keeps life going generation after generation.

KEY POINTS

- Reproduction is **not essential** for individual survival.
- It requires **energy**.
- Organisms reproduce to **maintain species**.
- New individuals **resemble** their parents.



DID YOU KNOW?

Chromosomes contain **DNA** information. They are found in the nucleus of cells.

Chromosome



IN SIMPLE WORDS



Reproduction helps organisms create new ones so their kind **never disappears**.



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OVERVIEW

WHY?

DNA

KEY POINTS

EXAMPLES

SUMMARY

DNA Copying and Variation

THE PROCESS



PARENT CELL



DNA COPYING



CELL DIVISION



TWO DAUGHTER CELLS

DNA carries hereditary information.



DNA copying creates similarities between individuals.



Small errors during copying create variations.



Variations are the basis of evolution and survival.



ACCURATE COPYING VS VARIATIONS

- Most of the time DNA is copied accurately.
- Daughter cells are almost identical to parent cell.
- Ensures stability of traits and functions. 😊

- Sometimes mistakes (errors) occur.
- Changes in DNA sequence lead to variations.
- May be helpful, neutral or harmful. 😞

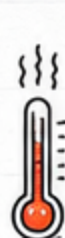


IMPORTANT NOTE

No biochemical reaction is perfectly reliable. ❤️

EXAMPLE

Heat-resistant bacteria



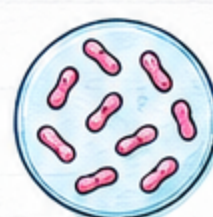
A population of bacteria is exposed to high temperature.



Random mutation gives some bacteria heat resistance.



Heat-sensitive bacteria die. Resistant ones survive.



Resistant bacteria multiply and the population changes.

REVISION CORNER

Variation helps survival during environmental changes. ❤️ 🌍



Copying with high accuracy brings stability, while small variations bring diversity. Together, they ensure continuity and progress of life. ❤️

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