

SCIENCE • CLASS 10

CHAPTER 7

How Do Organisms Reproduce?

CHAPTER NOTES

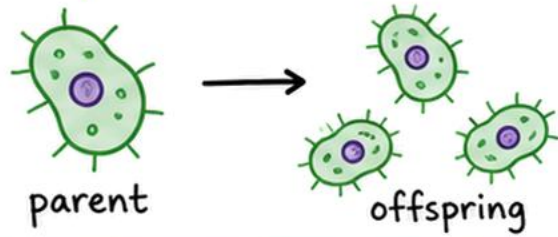


REPRODUCTION: DNA AND CELL DIVISION

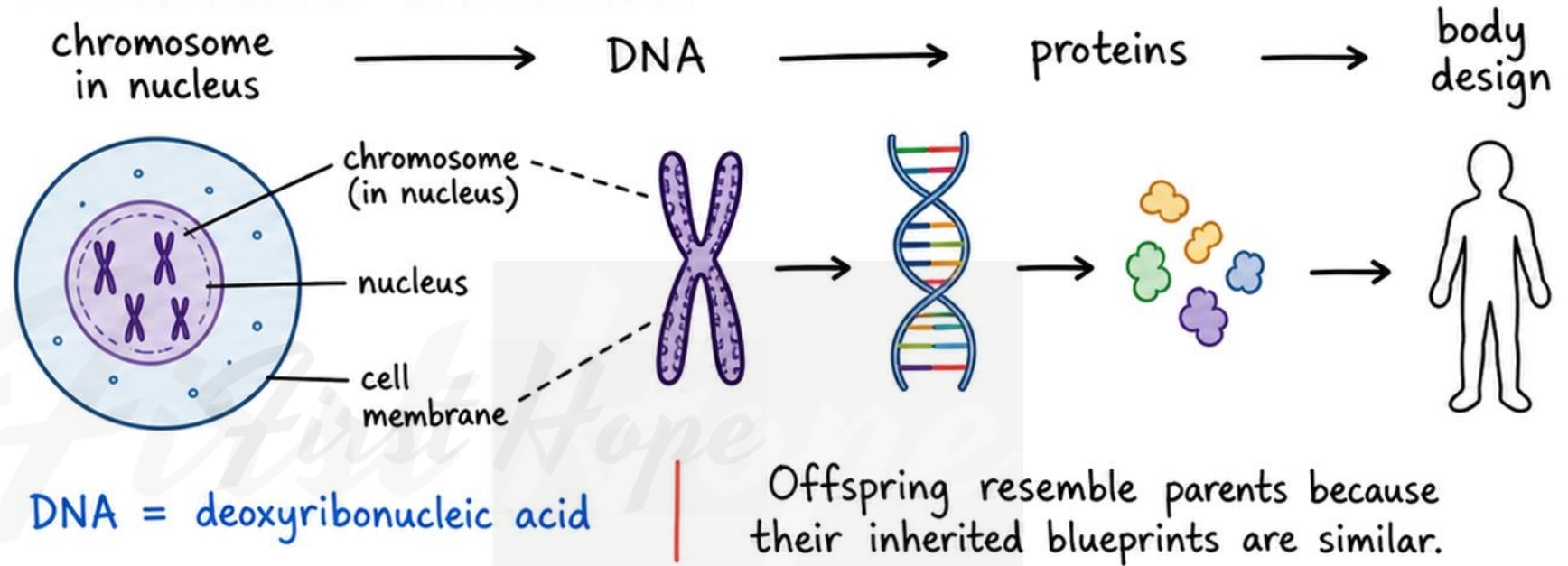
WHY REPRODUCE?

Reproduction produces new individuals and maintains continuity of a species.

It is not needed to keep one individual alive.

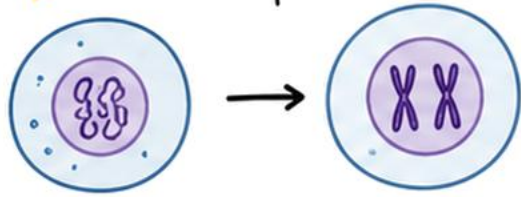


HEREDITARY BLUEPRINT

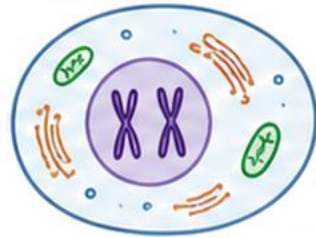


BASIC EVENT

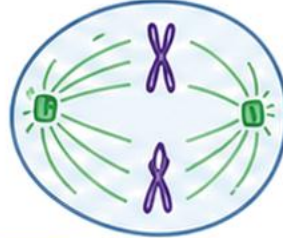
1. DNA is copied



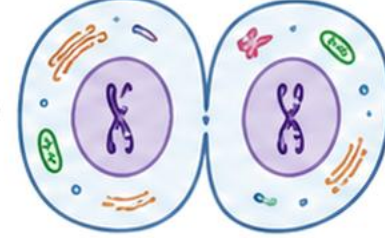
2. additional cellular material / apparatus is made



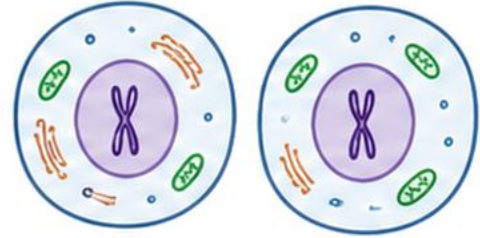
3. DNA copies separate



4. cell divides



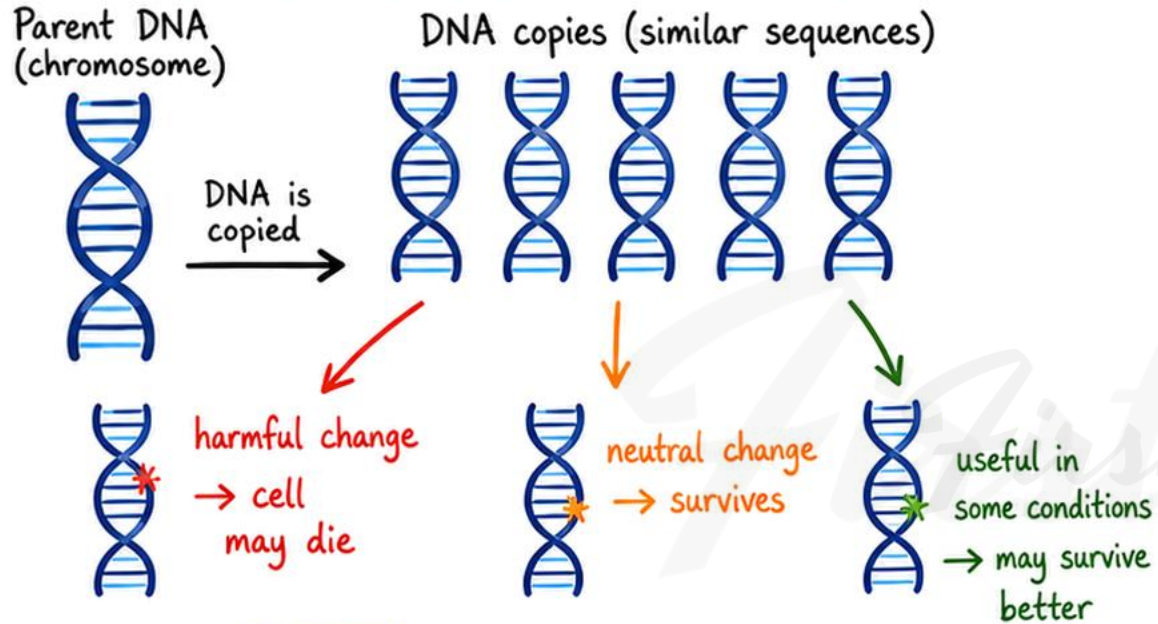
two daughter cells



KEY IDEA: DNA copying is the basic event in reproduction.

VARIATION AND SURVIVAL OF SPECIES

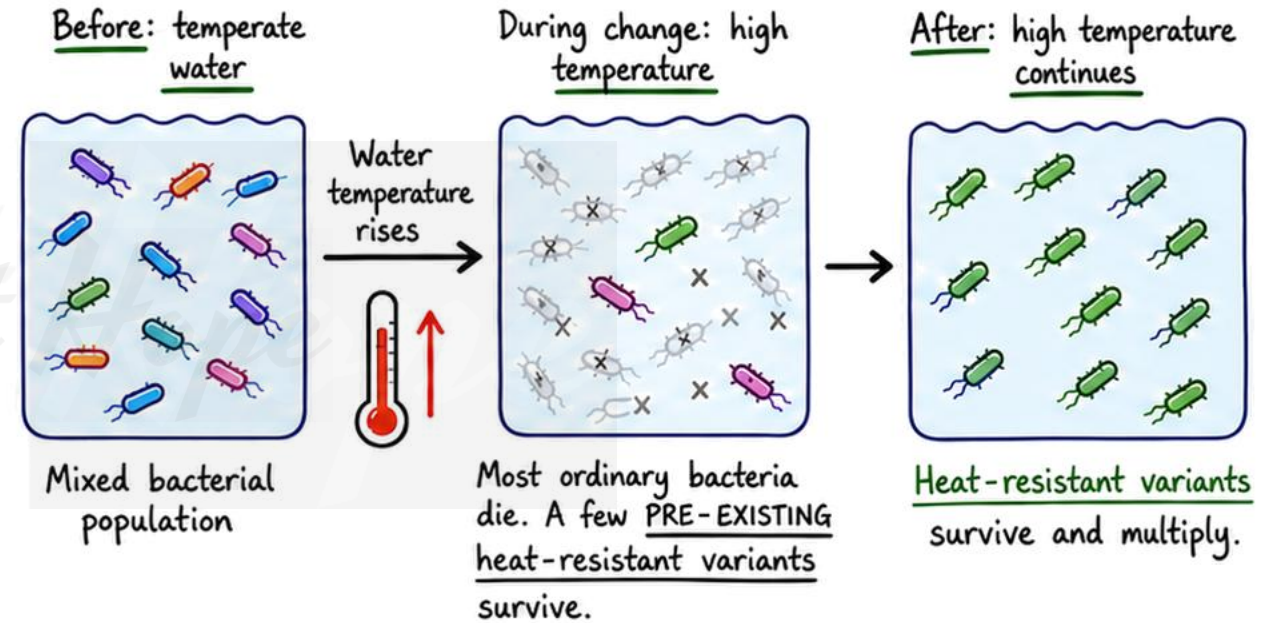
DNA COPYING IS HIGHLY ACCURATE — NOT PERFECT



- Copies are **similar**, not guaranteed identical.
- Variation means **differences** among individuals.

WHEN A NICHE CHANGES

Niche = the role, place and conditions used by a population in an ecosystem.



consistent DNA copying
→ stable body design
and population

variation +
environmental change

some individuals
may survive

species continues

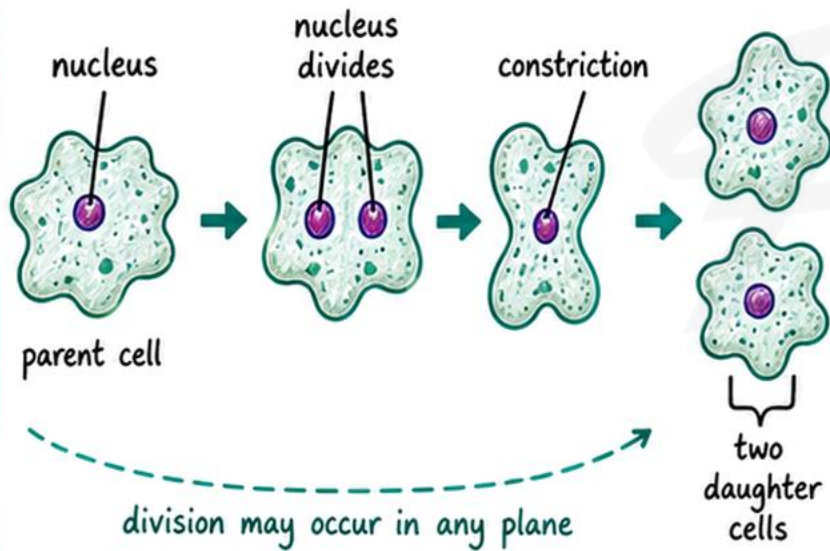
★ KEY IDEA: Variation can help a species **survive** over time and provides the basis for evolution.

BINARY AND MULTIPLE FISSION

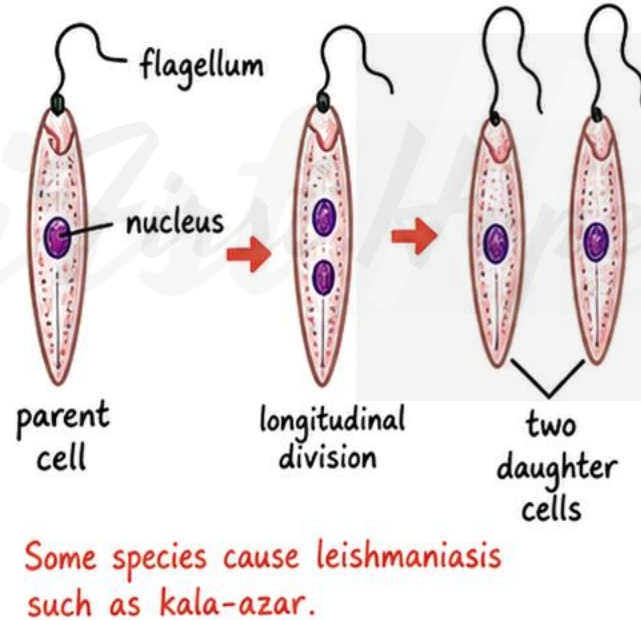
ASEXUAL REPRODUCTION: one parent; no fusion of gametes; offspring are genetically very similar.

FISSION: one unicellular parent divides to form new individuals.

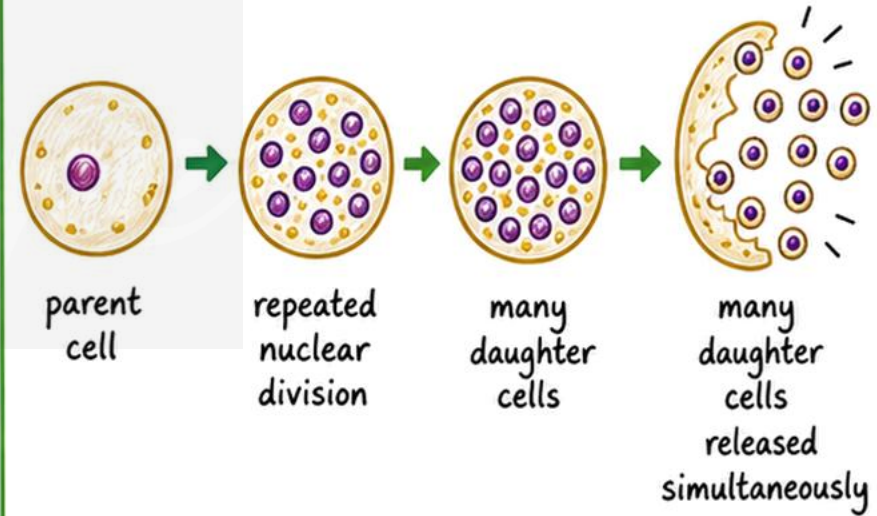
AMOEBA — BINARY FISSION



LEISHMANIA — LONGITUDINAL BINARY FISSION



PLASMODIUM — MULTIPLE FISSION



BINARY FISSION: 1 parent → 2 daughters

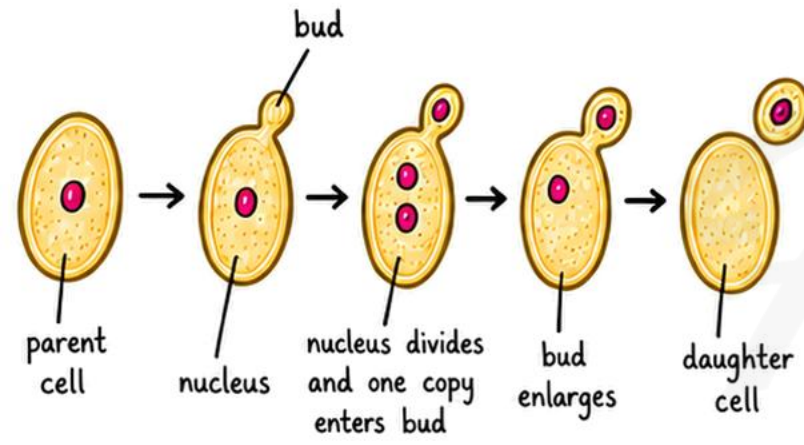
MULTIPLE FISSION: 1 parent → MANY daughters

☆ The pattern of fission depends on body organisation. ☆

BUDDING AND FRAGMENTATION

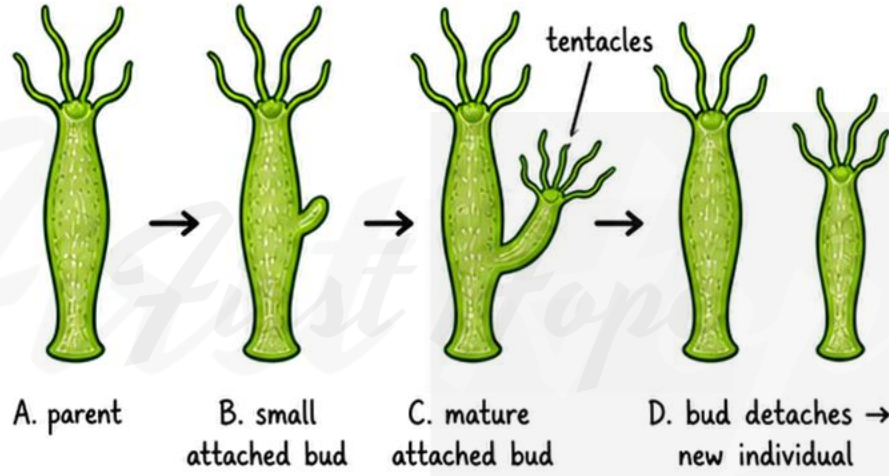
YEAST — BUDDING

A small outgrowth or bud forms by repeated cell division, grows, and may detach.



Microscope: yeast cells may show small buds.

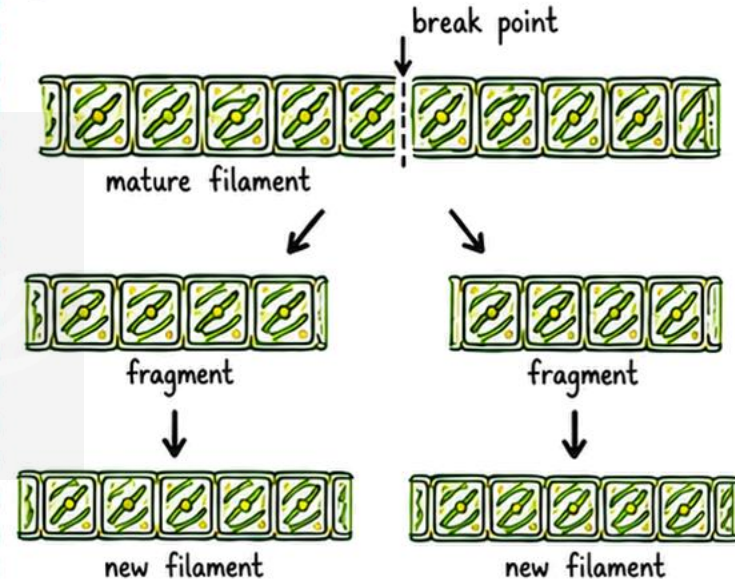
HYDRA — BUDDING



Repeated cell division at one body-wall site → bud grows → mouth and tentacles develop → mature bud detaches.

SPIROGYRA — FRAGMENTATION

A mature simple multicellular body breaks into fragments; each suitable fragment grows into a new individual.



Simple filament; no differentiated tissues.

BUDDING starts as an outgrowth

➤ versus ➤

FRAGMENTATION starts when the parent breaks into pieces



Both are asexual: one parent, no gamete fusion.



FREE PREVIEW

[Click here to visit our website](#)

SCHOOL NOTES & NCERT SOLUTIONS

Complete notes and
NCERT solutions are
available on
FirstHope app only.



[Scan or click here](#)

Click here to get the app



Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram



[Scan or click here](#)

@FirstHope_CBSE_Notes

Instagram

@firsthope.school

[Click here to follow >](#)

YouTube channel

@firsthope.school

[Click here to watch >](#)

FirstHope website

firsthope.co.in

[Click here to visit our website >](#)

CBSE / Class 9 / Class 10 / Class 11 / Class 12

Preview notes and NCERT solutions. Full PDFs in the FirstHope app.