Reproduce

REPRODUCTION:

Living organisms produce new individuals of same species.

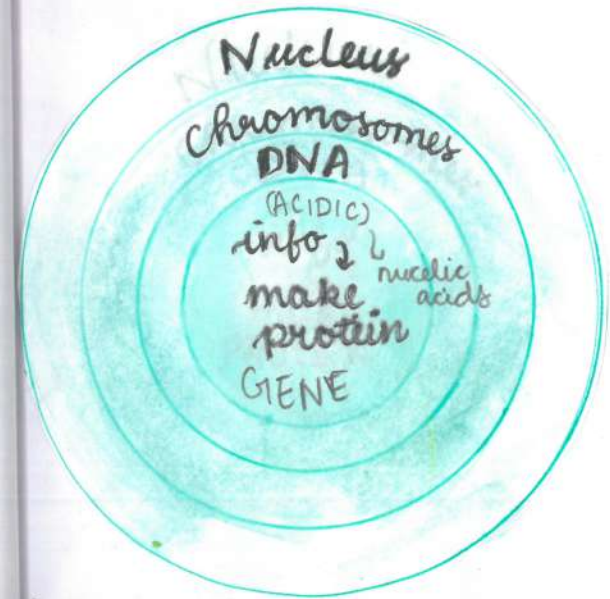
www.wowmyspace.com

~~R~~ not needed - individuals to stay alive

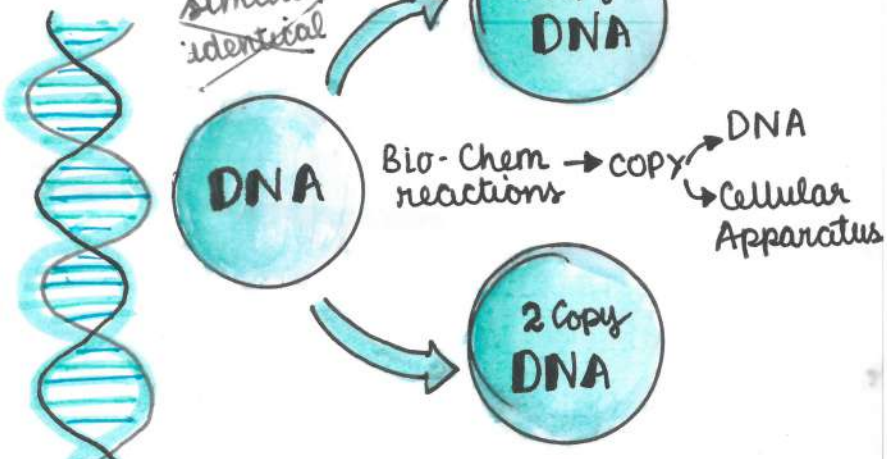
R
- continuation of life on earth - ~~extinction~~
- addition of new species → maintain popu
- replacement of dead organisms ~~RIP~~
- transfer of **adaptations** & **variations** from one generation to another. → EVOLUTION
  + stability
  + variation
  + continuity

lot of ENERGY spent

Exact Copies ?



DIES? too much variation - CAN'T adapt to its own cellular apparatus



info changed → diff. protein → altered body design

Accuracy?

no bio-chemical reaction - reliable

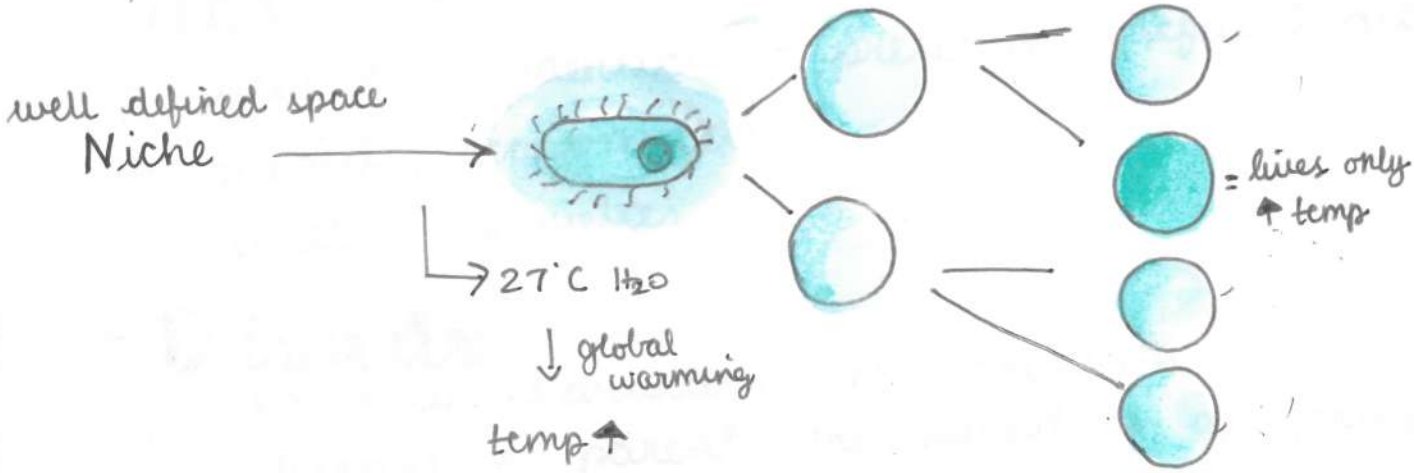
∴ DNA copies
→ similar
→ not identical

Variation = difference among individuals of same species

" In built Tendency for variation during reproduction is the basis of evolution "

Importance of Variation

- Individuals
  Good / Bad
- Species
  Good



VEGETATIVE

- Mode of asexual reproduction in which new plants are obtained from the vegetative parts of plants such as roots, stems and leaves.

Uses

- - lost ability to produce SEEDS
- - genetically similar enough to parent
- Superior quality plants
- Cheaper, easier, rapid

Adv

- genetically identical = preserve useful traits
- rapid, economical
- seedless varieties

Disadv

- no new characters ∴ NO variation
- disease of parent transfered to offspring

ASEXUAL

Fission

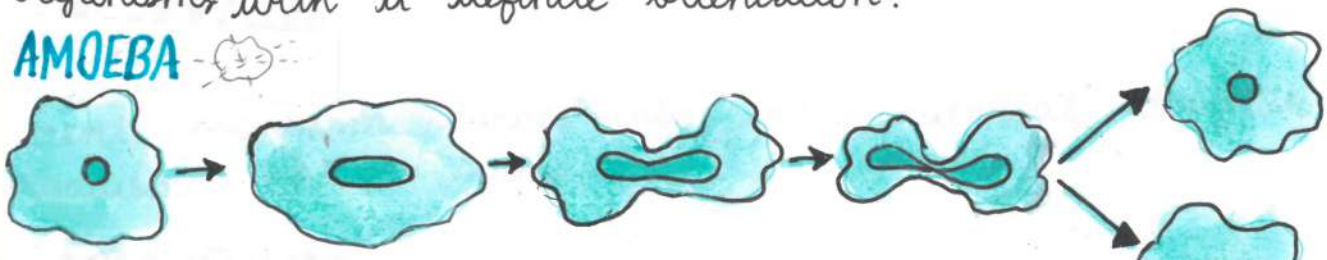
unicellular organism splits into two or more than two seperate daughter cells.

common & simplest

Binary *favourable*

Parent organism divides into two identical daughter organisms with a definite orientation.

AMOEBA



mature cell → nucleus elongates → KARYOKINESIS (nucleus / 2) → CYTOKYNESIS (cytoplasm / 2) → 2 daughter cells

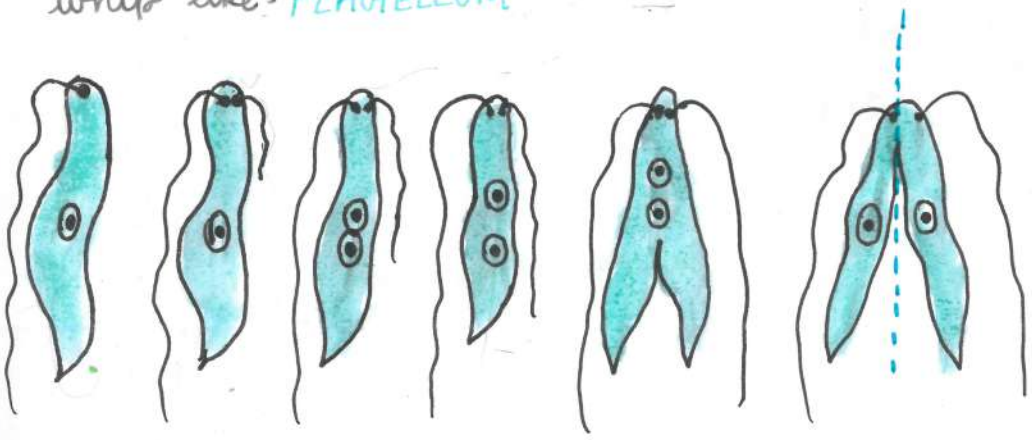
irregular

LEISHMANIA (Kala Azaar)

longitudinal

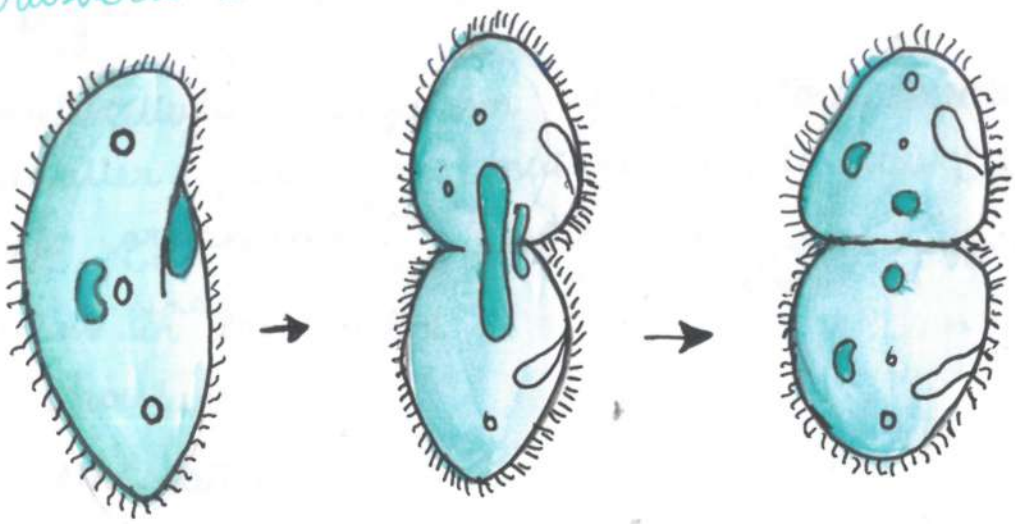
↑degree of specialisation

whip like - *FLAGELLUM*



PARAMECIUM

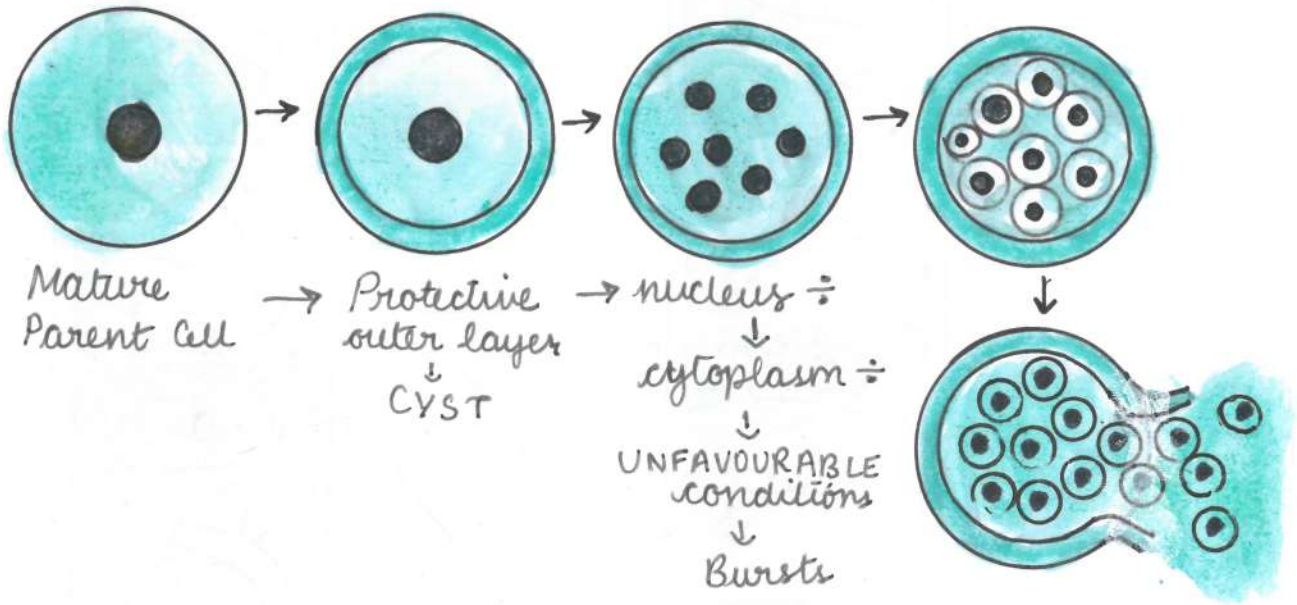
transverse division



Multiple *unfavourable*

Parent organism divides into many identical daughter organisms at the same time.

PLASMODIUM



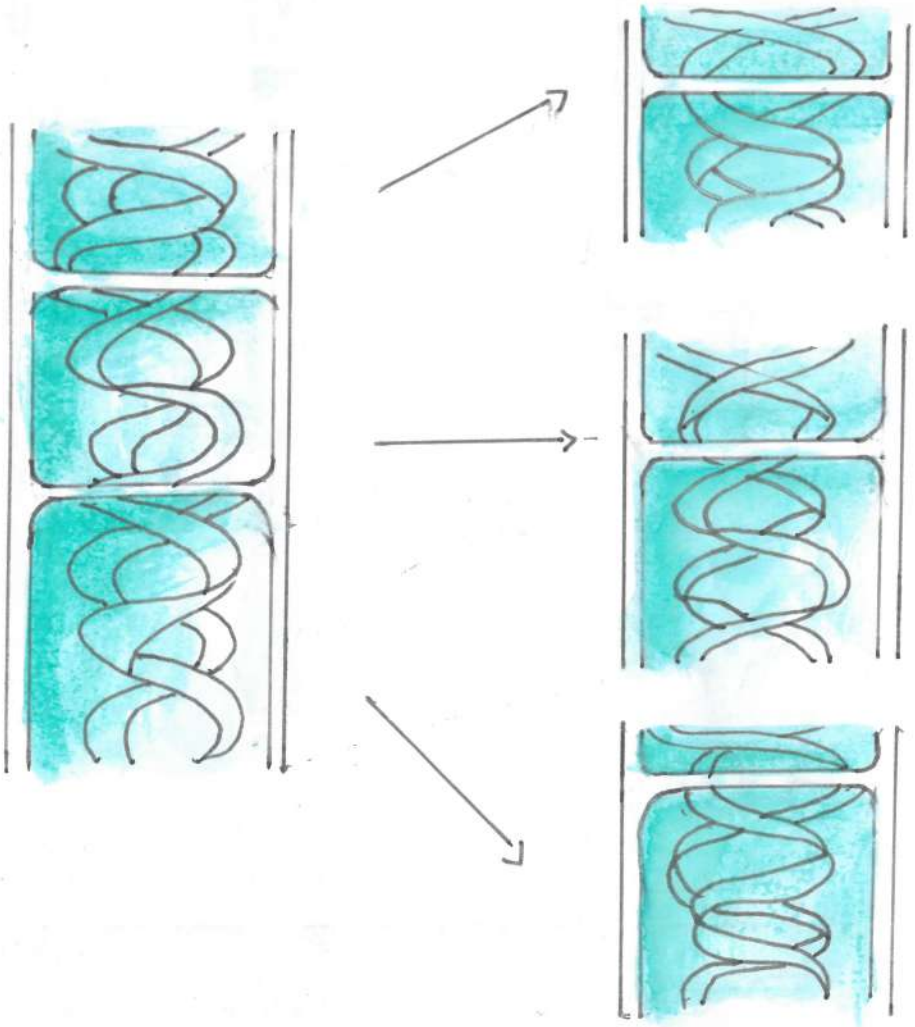
Fragmentation

★ Multicellular organism splits into / breaks up into smaller pieces on maturation, to develop into new organisms.

★ occurs in favourable
- → moisture
- → temperature
- → nutrient availability

★ Sea anemone

★ SPIROGYRA, green, filamentous algae plant.



Regeneration

development of a new organism occurs from just a broken / cut part of parent organism.

★ specialised cells - proliferate - large no. of cells

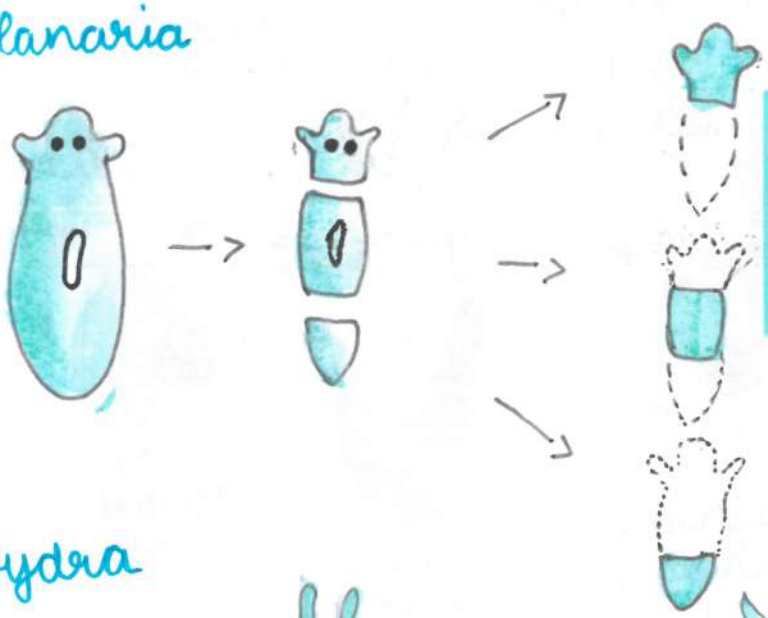
↓

mass of cells - CHANGES

↓

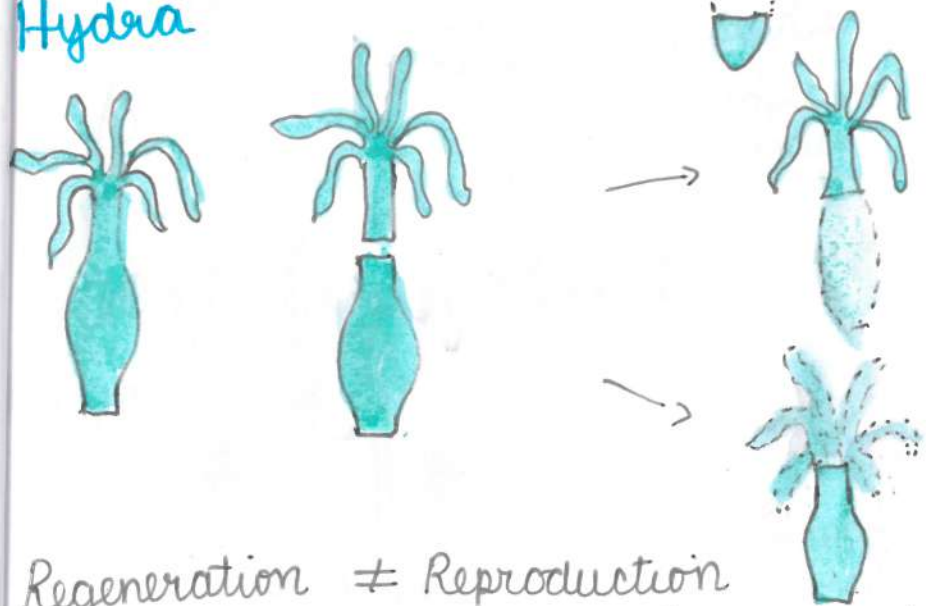
various cell type / tissues

Planaria



flat worm - **Planaria**
→ has very simple 'EYES', that are really eye spots which detect light.

Hydra



Regeneration ≠ Reproduction
don't depend on external factor / cut up to reproduce

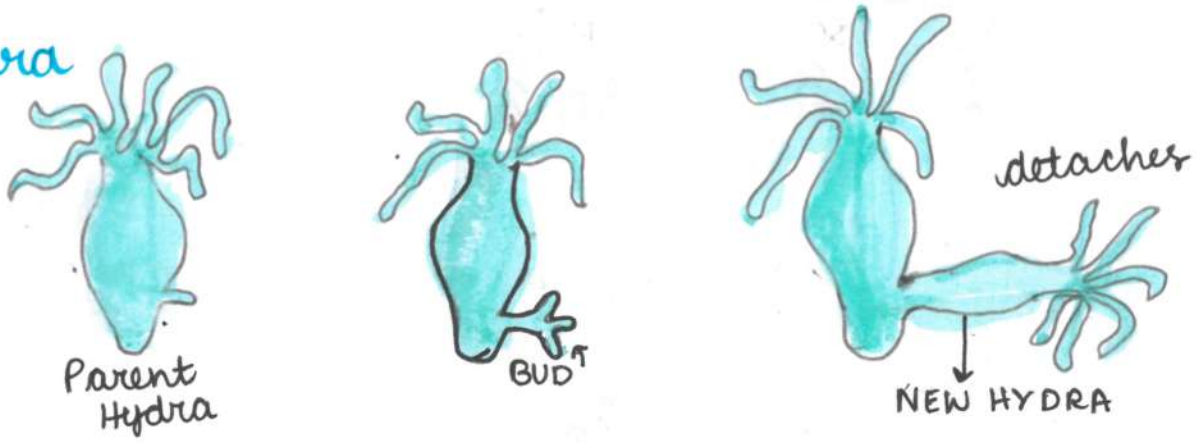
Complex organisms don't regenerate
↑ level of differentiation & organisation

Budding

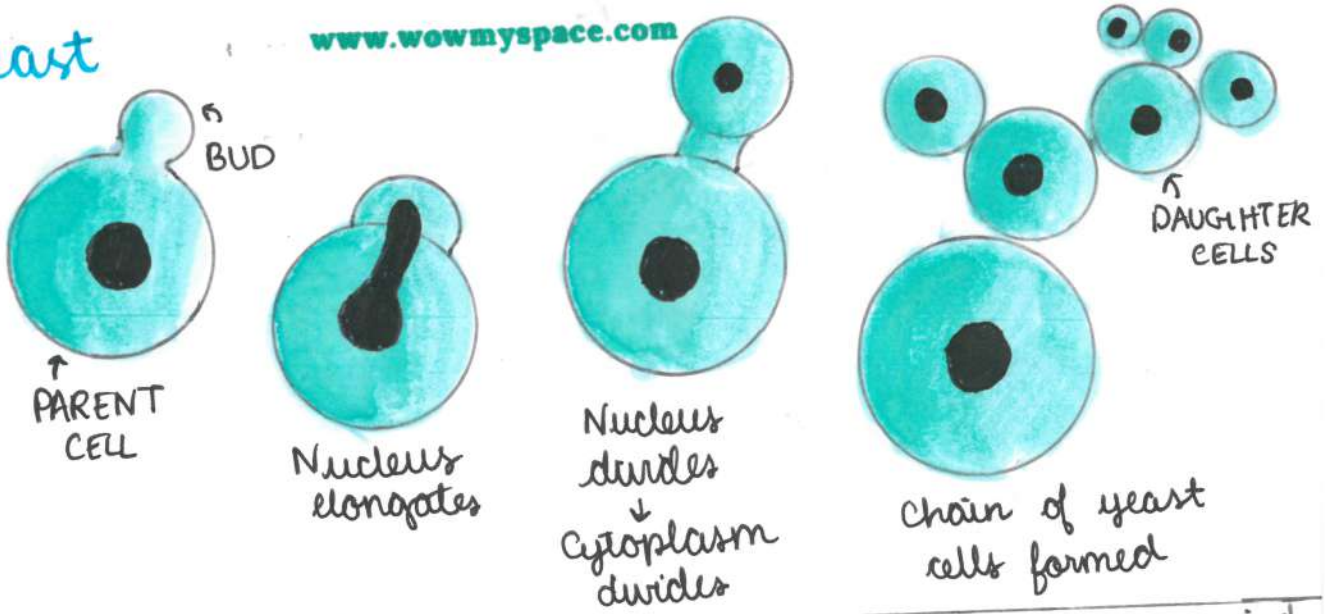
Parent identity maintained

Production of new individual from an outgrowth of parent individual due to repeated cell division in the same site.

Hydra

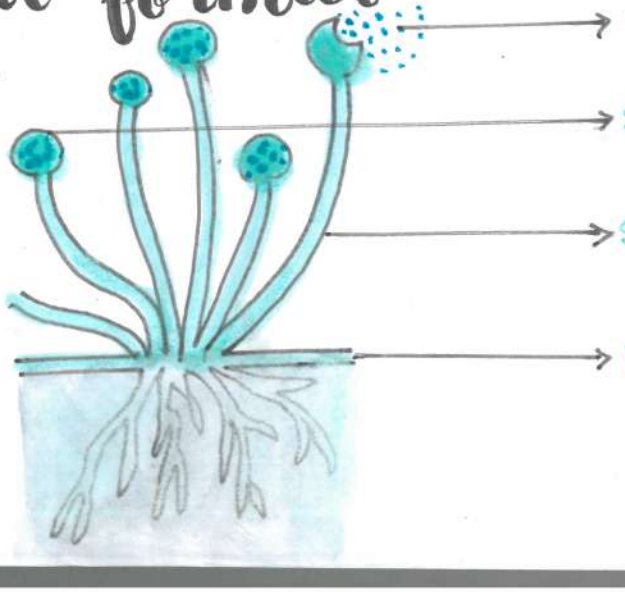


Yeast



Spore formation

Rhizopus



Light weight - dispersed - wind, H_2O, animals

↑

SPORES [thick walls] - moisture

SPORANGIUM - reproductive part
blob

SPORANGIOPHORE
stick

HYPHAE
thread like - develop on BREAD - moist

FLOWER - ANGIOSPERMS

4 Whorls

ESSENTIAL

Androecium
STAMEN

Anther
- POLLEN GRAINS light weight
- Bilobe - 2 sacs

Filament
- tube
- holds anther

Gynoecium
CARPEL / PISTAL

Stigma
- top - sticky / viscous
- terminal part
- receives POLLEN, pollination

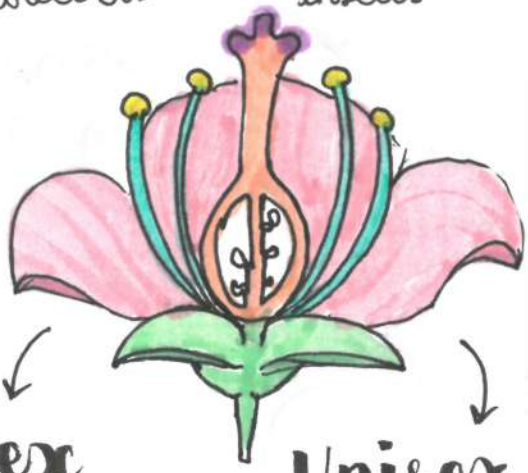
Style
- middle elongated
- connects stigma - ovary

Ovary
- swollen bottom
- contains ovules

ACCESSORY

Calyx
SEPAL
- green
- protect BUD

Corolla
PETAL
- coloured
- attract insects



Bisex

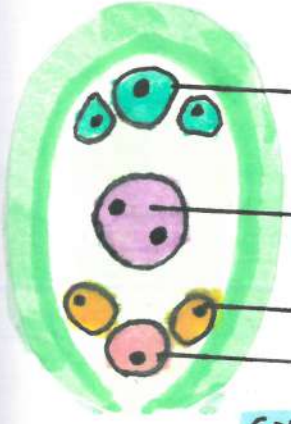
mustard
hibiscus

Unisex

Papaya
watermelon

Self	Cross
same flower	different flower
× pollinating agent	✓ pollinating agents
↓ prefered ← GENETICS → ↑ prefered	
↑↓ variation	↑ variation

Ovule
8 cells



3 antipodals

2 polar nuclei + sperm = Endosperm 3n

2 synergids — TRIPLE fusion

1 egg cell = Zygote 2n

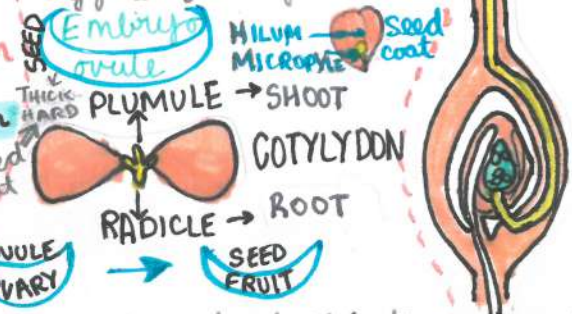
SYNGIAMY + sperm

Pollination : transfer of PG from anther of stamen to stigma of flower

→ POLLEN TUBE GROWS

→ Fertilization — DOUBLE

Zygote ÷ many times



Germination = seed containing embryo develops into SEEDLING ← appropriate conditions

SEXUAL

* Production of offsprings by fusion of 2 gametes, 1 from ♀ and other from ♂ to form a diploid zygote which develops into mature organism.
* SPEED up variation
* MEIOSIS cell division

Humans:

PUBERTY: age at which reproductive organs become functional, gonads start producing gametes and sex hormones, and boys and girls become sexually mature. [gonads - sexual organs]

Physical Changes

BOYS

voice - cracks

penis - enlarges
- erect (occasionally)

thick - facial hair

COMMON

thick hair !!!!!
* genetials
* arm pits

thin hair !!!!
* legs
* face
* hands

Skin
* oily
* pimples
* acne

GIRLS

breast elarges (mammary glands)

skin darkens around NIPPLE of breast

menstruation begins

Glands

Seminal Vesicle (single)

* secretes semen - WHITISH FLUID - MILKY
* nutrition - stay alive 24 hours

Prostate (Paired)

* help motility of sperm

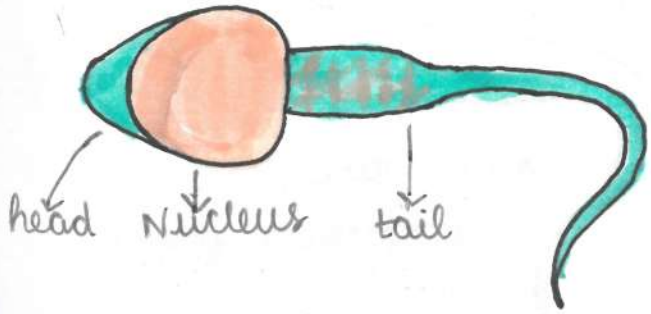
Cowper's (Paired)

* makes semen ALKALINE to neutralise ACID in ovary

Testosterone

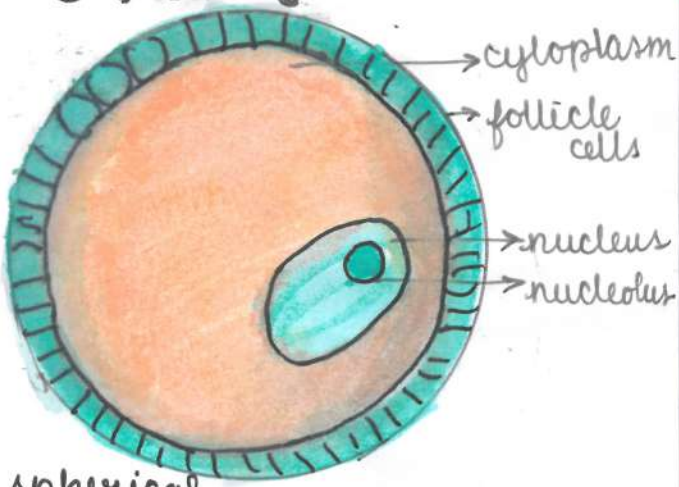
* produces sperms
* responsible for SSC = secondary Sexual Characteristics

Sperm



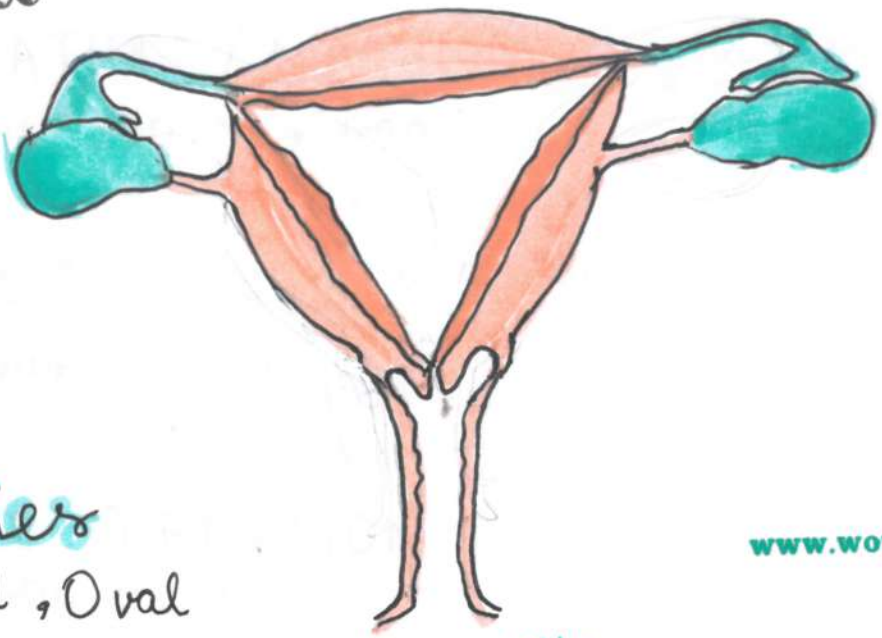
long = tail + head
small
locomotary [moves]
food storage ↓
nucleus - prominent
cytoplasm - ↓

Ovum



spherical
large
stationery
food storage ↑
↑ cytoplasm

Female



www.wowmyspace.com

Ovaries

A paired, Oval

F produces 1000's ova / egg cells

F secreates

- PROGESTERONE → maintain pregnancy - prepares uterus
- OESTROGEN → produces ovum
  → SSC [secondary sexual characteristics]

Oviducts / Fallopian Tube

A tube - 2

F carries egg ovary ⟶ uterus

F site for FERTILISATION

F opens into uterus

Uterus / Womb

A hollow / pear shaped / bag like

F during development - protects & nourishes embryo (placenta)

Cervix

A mouth of uterus

F opens into vagina

Vagina

F receives sperms

F birth canal

COPULATION / MATING vagina [sexual intercourse]

penis —SPERM→ vagina

FERTILISATION - fallopian tube

nucleus of ♂ + ♀

ZYGOTE FORMATION

mitotic cell division

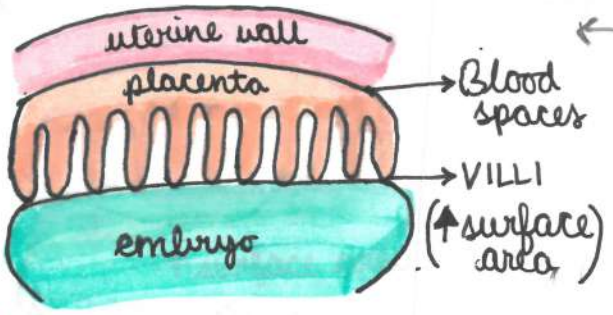
EMBRYO

GESTATION
fertilized
↓
Birth

IMPLANTATION uterus

embeddeding of embryo

PLACENTA = disc, spongy, rich BLOOD VESSELS



Functions

① mother —glucose→ embryo
② mother —O_2→ embryo
③ embryo —removal metabolic wastes→ mother

PARTURATION through vagina comes out

Menstruation

- 28 days once
- ovaries release egg / ovum
- prepares - to receive fertilized egg
- lining - thick / spongy
- 2-8 days

NO Fertilization

No fertilization

lining breaks & comes out through VAGINA → mucus → blood

★ EGG - alive 1 day

reproductive health

- sate of complete physical, mental and social well-being in all aspects of reproductions.
- Necessary Knoledwge of :
  - ★ reproductive organs / processes
  - ★ care of mother & child
  - ★ family planning
  - ★ STD's

- To ensure health of mother, child
  - ★ nutricious diet (pregnant + lactacious mothers)
  - ★ proper AGE difference between children
  - ★ planning for baby at MOTHER'S right age [20-35 yrs]
  - ★ restrict [overpapulation] no. of children → food, education, employment
  - ★ to avoid unwanted pregnancy - FAMILY PLANNING
- SEX RATIO : ratio of no. of ♀ to no. of ♂ in population
- CONTRACEPTIVE METHODS : methods used to prevent the occurance of pregnancy.

Barrier STD

Condom

- rubber sheath worn over PENIS
- prevents = penis ~~SPERM~~ → vagina
- ↳ fertilization
  ↳ STD's

Diaghpram cervical caps

- rubber cap placed in vagina over cervix
- prevents:- penis ~~SPERM~~ → vagina
  ↳ fertilization

IUCD

- Intra Uterine Contraceptive Devide
- placed in UTERUS by doctor = Cu^{++} ions KILL Sperms!!
- can cause side effects ∵ irritation of uterus
  only prevents fertilization

Hormonal

OCP Oral Contraceptive Pills

- has hormones that prevent release of OVUM
- causes HORMONAL IMBALANCE

Chemical

Spermicide - kills sperms

- applied on VAGINA + condom / diaghpram (only)

Surgical

Tubectomy

- small portion - oviduct - CUT/TIED
- prevent meeting sperm for Fertili..
- irreversible

Vasectomy

- small portion - sperm duct - CUT/TIED
- prevent - Production of sperms
- irreversible

STD's

diseases / infections which are capable of being spread from 1 person to another.

- sexual intercose
- IV drugs
- oral-genetial contact / non-sexual ways
- congenitically transmitted

Bacteria

Gonorrhoea

Syphillus

Virus

Warts

AID's — Acquired Immuno Deficiency Syndrome → Virus

↳ HIV - Human Immuno Deficiency virus

P ★ Blood transfusion
A ★ MOM → Baby [BREAST MILK]
S ★ Pregnant MOM → foetus
S ★ share - HYPODERMIC needles
E ★ sexual intercource
D ★ semen, vaginal secreations