

Asexual Reproduction: Cell Cycle

Interphase	Mitosis	Cytokinesis
Cell grows and develops & does normal functions, longest cell cycle phase, late interphase DNA replication occurs	Prophase: Nucleolus disappears, spindle fibres form & attach to centromeres	Cell divides into 2 daughter cells
Dna molecule unwinds with help of enzyme, bases pair up= 2 genetically id DNA molecs.	Metaphase: Spindle fibres lineup at equator of cell	For both binary and cell cycle
Mitosis: Anaphase: Spindle fibres pull sis. chromatids to opp. poles	Telophase: Nuclear membrane reappears around sis chromatids	
Eukaryotic cells use cell cycle		

Sexual Reproduction Cell Cycle

Meiosis 1	Meiosis 2
Prophase 1: Nucleolus dissolves, homologous chromosomes pair, spindle fibres attach to centromeres, DNA condenses to chromosomes. Pro 2= same no homo	
Metaphase: Spindle fibres push chromosomes to equator (middle) on 2 sides of equator	same no homo
Anaphase: Homo chromosomes move to opposite sides of cell (spindle fibres pull)	Sister chromatids separate
Telophase: spindle fibres disappear, nuclear membrane comes back, two nuclei form, after telo cell divides at cleavage furrow, 2 cells	Same, cell later divides after, 4 cells
Still Interphase and Cytokinesis. Homologous	

Binary Fission

Cell splits to two daughter cells with id DNA

Some bacteria reproduce through binary fission cause they don't have a nucleus

Binary Fission (cont)

Mutation may occur during dna rep. or when chromosomes don't move to 2 dtr. cells

Prokaryotic cells only. Barrier forms between daughter cells as they split

Plant Reproduction

male rep. org: stamen	female rep. org: pistil
releases m. gamete	gamete carried to stigma
anther: pollen stored&produced	Stigma: sticky&captures male gamete
Pollen grains contain male gamete	style: where the pollen tube is
filament supports anther	ovary: contains ovules
	Ovules: surround female gamete
Seed germination=a seed developing to plant	

Sexual Reproduction

Mating: When sperm & egg meet	Fertilization: When gametes fuse to form zygote	Development: When organism develops into embryo
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Embryo: is unborn/unhatched offspring in development process

Fertilization: sperm breaks into egg cell and penetrates the cell membrane, then fuses with egg nucleus making zygote

Internal fertilization gametes join outside of parents.

External is when gametes join inside parents, embryo inside mom

Internal:	External:
Embryo is protected	Not protected

More energy	little energy
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Produces less	Produces more
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More competition for food	Less competition
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More likely to survive	Many are not fertilized
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Zygote eventually turns into embryo, which eventually makes a complete individual

Morula>Blastula>Gastrula

Morula= End of week 1 (ball of cells) Blastula= End of week 2 (hollow ball of cells, cells can develop into any type of cell) Gastrula= 3 distinct layers of cells (Ectoderm= skin & nerves, Mesoderm= Muscles & bones, Endoderm= lungs, liver, and digestive system lining)

Gametes=sperm/egg. Sperm cells have flagella & are mobile

Asexual vs Sexual Reproduction

Rep. Purpose: Produce a offspring, continue species

Cell Theory: "New cells are formed through the division of existing cells."

Every species has different method of rep.

Asex. rep.

sex. rep.

Asex. $0 \rightarrow 0$ (parent is now daughter cell)

Sex. $0+0=0$ (Zygote) (parents usually stay alive)

1 Parent

2 parents/ Gametes= sperm, egg

All parent DNA

Offspring genetically different/ Half Dad DNA, Half Mom DNA

Genetically Identical

Genetic diversity= better immunity

Clones are natural, but can also be artificial

DNA is made of many nucleoids linked together

4 types of nucleoids: Adenine-Thymine, Cytosine-Guanine

DNA coil into condensed form: chromatin

More condensed to chromosome, when the cell is ready to reproduce

DNA looks like long spiral ladder called double helix

Sides of ladder are made up of sugar & phosphate

If the genetic code messes up it causes genetic mutation.

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