

CONTINUITY & CHANGE

Explain how mitosis maintains genetic consistency

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Explain how meiosis makes sexual reproduction possible

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Explain how meiosis creates variation

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Describe the three functions mitosis serves in multicellular organisms

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List the commonalities & differences of mitosis & meiosis

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List & describe pre-reproductive barriers that lead to speciation

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List & describe post-reproductive barriers that lead to speciation

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Explain how geographic (allopatric) isolation leads to speciation

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Explain how reproductive (sympatric) isolation leads to speciation

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Explain the five principles of natural selection

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Describe the five agents of evolutionary change acting on a population

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Explain how meiosis accounts for both Mendel's laws of heredity

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Describe the function that mitosis serves in unicellular organisms

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Give an example & explain a simple dominance & recessive inheritance pattern

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Give an example & explain a co-dominance inheritance pattern

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Give an example & explain an incomplete dominance inheritance pattern

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Give an example and explain an epistatic inheritance pattern

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Give an example and explain a polygenic inheritance pattern

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Give an example and explain a pleiotropic inheritance pattern

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Give an example and explain a sex-linked inheritance pattern

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Describe Mendel's first law of heredity

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Describe Mendel's second law of heredity

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Describe the process of DNA replication

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Explain what a silent mutation is & describe its potential effects

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Explain what a missense mutation is, describe its potential effects, & give an example

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Explain what a nonsense mutation is & describe its potential effects

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Explain what a frameshift mutation is & describe the potential effects

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Explain what a deletion mutation is, describe its potential effects, & give an example

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Explain what an addition mutation is & describe its potential effects

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Explain what a gene inversion mutation is & describe its potential effects

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Explain what a gene duplication mutation is & describe its potential effects

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Explain what a gene translocation mutation is & describe its potential effects

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Describe the four sex chromosome abnormalities & their effects

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Describe a human autosomal chromosome abnormality

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Explain nondisjunction & how it leads to chromosomal abnormalities

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Describe & diagram the process of meiosis & cytokinesis

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Describe the process of crossing over

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Describe & diagram the process of mitosis & cytokinesis

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Explain the action of cdks & cyclins in the regulation of the cell cycle

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Explain the consequences of a loss of regulation of mitosis

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Describe the three checkpoints of the cell cycle

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Explain the effects of proto-oncogenes & tumor suppressor genes

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