

ENERGY TRANSFER

Explain how sunlight is used to make ATP in photosynthesis

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Explain how H₂O is used to make ATP in photosynthesis

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Explain how CO₂ is used to make sugars in C₃ photosynthesis

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Explain how carbon fixation differs in C₄ plants

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Explain how carbon fixation differs in CAM plants

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Explain how C₄ plant leaves differ structurally than C₃ plants

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Explain how sunlight is used to make NADPH in photosynthesis

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Explain how ATP & NADPH are used to build sugars in the Calvin Cycle

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Explain how the energy of organic compounds are converted to ATP

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Describe glycolysis

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Describe the oxidation of pyruvate & the Krebs cycle

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Describe the electron transport chain & explain how it functions to make ATP

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Describe the role of NADH & FADH₂ in cellular respiration

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Describe the role of oxygen in cellular respiration

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Describe & diagram the structure of the mitochondria

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Describe & diagram the structure of the chloroplast

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Explain how ATP serves as an energy currency molecule

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Explain how a proton gradient is used to build ATP in cellular respiration

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Explain how a proton gradient is used to build ATP in photosynthesis

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Explain chemiosmosis

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Describe the transfer of energy through a food pyramid

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Explain how the hydrolysis of ATP is used in the synthesis of macromolecules

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Explain how the hydrolysis of ATP is used to move muscle

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Explain how the hydrolysis of ATP is used to activate proteins

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Explain how energy coupling is used to drive endergonic reactions

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Explain how energy molecules are used in DNA replication

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Explain the need for enzymes in living organisms

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Explain how enzymes function

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Explain the induced fit model of enzyme function

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Draw a graph showing the effect of enzymes on an endergonic reaction

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Draw a graph showing the effect of enzymes on an exergonic reaction

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Explain how pH affects enzyme function

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Explain how temperature affects enzyme function

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Explain how salinity affects enzyme function

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Give an example of a common synthesis enzyme

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Give an example of a common digestive enzyme

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Explain primary productivity

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Explain gross primary productivity

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Explain net primary productivity

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Explain how dissolved oxygen relates to primary productivity

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Diagram and describe a marine food chain

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Diagram and describe a terrestrial food chain

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Explain alcohol fermentation

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Explain lactic acid fermentation

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Describe how enzyme function can be measured in an experiment

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Describe how rate of respiration can be measured in an experiment

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Describe how rate of photosynthesis can be measured in an experiment

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List and describe the function of all the enzymes of the digestive system

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Describe the structure of ATP

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