Photosynthesis and Cellular Respiration

# Matter and Energy Pathways in Living Systems

Define Photosynthesis

Define Cellular Respiration



What is ATP? How is ADP related to ATP.

What are 5 uses of ATP?

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Where is the location of photosynthesis? Cellular Respiration?

Write the equations for photosynthesis and cellular respiration

Photosynthesis:

Cellular Respiration:

What is meant by metabolism? Define Catabolic and Anabolic metabolism?

Explain the relationships between oxidation and reduction

What is the anatomy of a chloroplast? Draw it.



Photosynthesis and Cellular Respiration

# Photosynthesis

What are the two sets of reactions that are involved in photosynthesis?

What is pigment? What is an advantage of a plant having more than one pigment?

What is the absorbance spectrum?



Summarize the light dependent reactions of photosynthesis: Diagram it

Written Summary:

Drawing:

What is chemiosmosis? How does it make ATP?

Explain why hydrogen cannot diffuse out of the thylakoid space

What is the purpose of ATP synthase?

Summarize the light independent reactions of photosynthesis: Diagram it

Written Summary:

Drawing:

What does the term carbon dioxide fixation mean?

Photosynthesis and Cellular Respiration

# Cellular Respiration

What is the purpose of Cellular Respiration?

What are the three pathways for energy release?

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Explain the difference between oxic and anoxic conditions

What are the 4 stages of Aerobic Respiration?

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Diagram the 4 stages of Aerobic Respiration:

Where does glycolysis occur in the cell? Is oxygen needed?



What are three products of glycolysis?

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Where does the Krebs cycle occur in the cell?

What compound, derived from glucose, enters the Krebs cycle?

How much ATP is generated through this process?

Explain Anaerobic respiration.

What are the two types of fermentation? In what instances do they occur?

Diagram both types of fermentation:

What does it mean to say that glycolysis is an anaerobic process?