

Remediation work for the retest on Photosynthesis, Cell Respiration, Plants, Circulation

The following 3 page review must be completed and shown to me BEFORE you can retest. You should complete this and then STUDY it for a few days. PLEASE do not do it the night before. The retest will be given Monday morning 11/10 from 8:00-8:45 and Tuesday afternoon 11/11 from 4:15-5:00. YOU MUST ALSO HAVE THE REQUIRED RETEST FORM FILLED OUT.

WHAT SHOULD I KNOW ABOUT PHOTOSYNTHESIS

- Which molecule is used by living things to store and transfer energy?
- What are the parts of an ATP molecule?
- Be able to write the chemical equation for photosynthesis: $6 \text{CO}_2 + 6 \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2$
- What is a pigment? What is the main pigment used by green plants to absorb energy?
- Which wavelengths of light are best absorbed by chlorophyll? Which are reflected?
- Be able to label the parts of a leaf, plant cell, and chloroplast. Be able to tell where the reactions for photosynthesis happen.
- What is NADP^+ ? What does it do? How is it changed into NADPH?
- Where does the H that ends up in NADPH ultimately come from?
- Be able to describe the two sets of reactions involved in photosynthesis (Light-dependent & Calvin cycle)
- Where are they located and what happens in each?
- What is another name for the Calvin Cycle?
- Which reactions in photosynthesis require light? Which do not?
- How and where are ATP and NADPH made?
- Which molecule is given off as a waste gas?
- Which molecules produced by the light-dependent reaction are used during the Calvin cycle?
- What happens during the Calvin cycle?
- Be able to give reactants and products for each of the reactions in the Calvin cycle.
- Where does the carbon in glucose ultimately come from?
- Which factors affect the rate of photosynthesis and how?
- Describe the structures in a leaf and how transport and gas exchange occur in plants.

Which of the following are TRUE about ATP?

- A. ATP consists of ribose sugar, adenine, and 3 phosphate groups
- B. ADP forms when ATP loses a phosphate and releases energy.
- C. Used ATP is discarded by the cell as waste.
- D. ATP provides energy for active transport in cells.

Plants gather the sun's energy with light-absorbing MOLECULES called _____.

- A. thylakoids
- B. pigments
- C. chloroplasts
- D. glucose

Most plants appear green because chlorophyll _____.

- A. reflects green light
- B. absorbs green light

A student conducts an experiment by collecting the gas given off by a green plant in bright sunlight at room temperature. The gas being collected is probably _____.

- A. ATP
- B. water vapor
- C. carbon dioxide
- D. oxygen

The Calvin cycle is another name for _____.

- A. photosynthesis
- B. the electron transport chain
- C. light-dependent reactions
- D. light-independent reactions

Which molecule acts as a carrier for high energy electrons during photosynthesis?

- A. ATP
- B. H_2O
- C. NADP^+
- D. CO_2

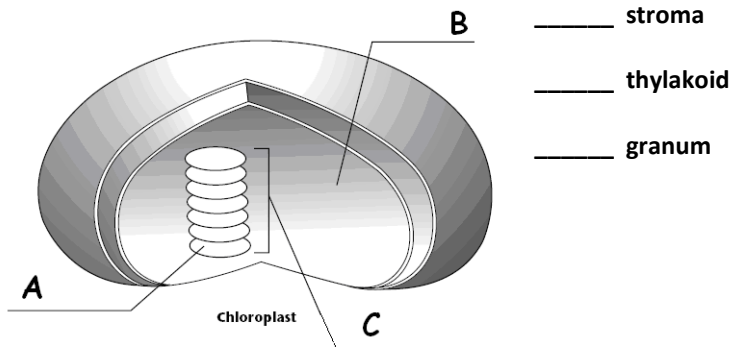
How is the Calvin cycle different from the light-dependent reactions?

- A. It takes place in chloroplasts.
- B. It takes place in the stroma.
- C. It requires light.
- D. It takes place in the thylakoid membrane

Oxygen produced during the light-dependent reaction is _____.

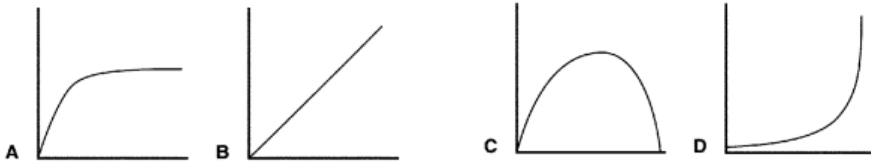
- A. used in the Calvin cycle to make sugar
- B. joined with the NADPH to make water
- C. is released into the atmosphere
- D. None of these, oxygen is NOT produced by the light-dependent reaction

USE THE LETTERS IN THE DIAGRAM AT THE LEFT TO IDENTIFY:



	LIGHT-DEPENDENT REACTIONS	CALVIN CYCLE
LOCATION		
REACTANTS		
PRODUCTS		
LIGHT?		

THINK ABOUT IT:



Which of these graphs represents the effect of temperature on the rate of photosynthesis? _____

(Hint: Many molecules that help with photosynthesis are enzymes)

Which of these graphs represents the effect of light intensity on the rate of photosynthesis? _____

CELLULAR RESPIRATION

What is the chemical formula for cellular respiration?

How does this equation compare to the equation for photosynthesis?

Be able to describe the steps of the pathways for: glycolysis, alcoholic fermentation, lactic acid fermentation, Krebs cycle, and Electron transport chain

Which molecule forms when glucose is broken in half?

What is the other name for Krebs cycle?

What high energy electron carriers are used in respiration?

What happens to the carbons in glucose as they pass through cellular respiration?

What does anaerobic mean? What does aerobic mean?

What happens to pyruvic acid if there is no oxygen?

What are the two kinds of fermentation?

Be able to give examples where each of these is used.

_____ is the first step in cellular respiration that begins releasing energy stored in glucose.

A. Alcoholic fermentation

B. Lactic acid fermentation

C. Glycolysis

D. Electron transport chain

If oxygen is NOT present, glycolysis is followed by _____

- A. Krebs cycle
- B. electron transport chain
- C. fermentation

Name the 3 carbon molecule produced when glucose is broken in half during glycolysis.

- A. pyruvic acid
- B. lactic acid
- C. Acetyl-CoA
- D. citric acid

Since fermentation does not require oxygen it is said to be _____.

- A. aerobic
- B. anaerobic

Tell the kind of fermentation used in each example:

- Yeast uses this to make bread dough rise _____
- Your muscle cells use this during rapid exercise when oxygen is low _____
- Bacteria and yeast use this to make beer and wine _____
- Bacteria use this to make cheese, yogurt, and sour cream _____

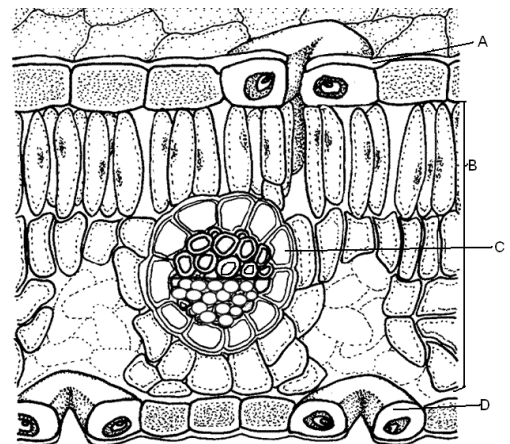
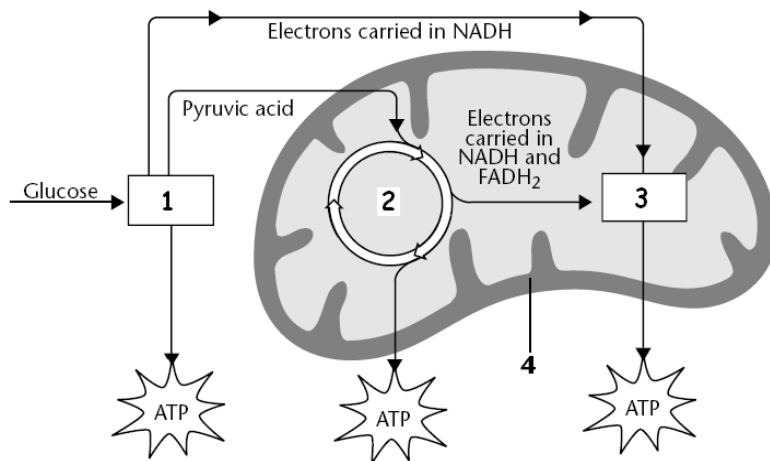
Which of the following shows the correct sequence during cellular respiration?

- A. Electron transport chain → glycolysis → Krebs cycle
- B. Glycolysis → Electron transport chain → Krebs cycle
- C. Krebs cycle → Electron transport chain → glycolysis
- D. Glycolysis → Krebs cycle → Electron transport chain

Because cellular respiration requires oxygen it is said to be _____

- A. aerobic
- B. anaerobic

LABEL &/OR EXPLAIN EACH OF THE FOLLOWING DIAGRAMS:



Be able to describe circulation in animals and plants!!!! As to what is being circulated, how, in which direction, etc....

Name all 3 blood vessels in the circulatory in a human and tell what each does.