Name_____ Date_____ Class_____

GAS EXCHANGE

Oxygen and carbon dioxide are exchanged in the alveoli of the lungs and through all cell membranes of the body. Capillaries transport blood to and from the alveoli and the cells in order to facilitate this process. Four students wondered which process actually drives gas exchange. This is what they said about it:

Elena: I think the cells use energy to move oxygen and carbon dioxide across the cell membranes. I'm certain it takes some cellular energy to move those particles in and out of the cell. After all, we breathe faster when we need more energy, right?

Jaden: I don't think it takes any energy to move carbon dioxide and oxygen in and out of the cells. I think they move across the cell from high to low concentration. I learned about this in school once, but I can't remember the name of the process cells use to do this.

Nakia: I think the cells use a process called filtration to separate out solids from gases. That allows them to move the oxygen and carbon dioxide across the cell membrane so cells get the oxygen that they need and they get rid of the carbon dioxide that they don't need.

Mitchell: I think cells use a type of passive transport to move the oxygen and carbon dioxide across the membrane from high concentration to low concentration. This doesn't require energy. It's called osmosis and it's a pretty simple process actually.

FIRST: underline or highlight any part of their statement that is true about the process that cells use for gas exchange. Use a different color for false statements they made.

THEN: Who do you agree with the most? _____ Explain why below... Be specific!

_____

_____

_____

_____

_____

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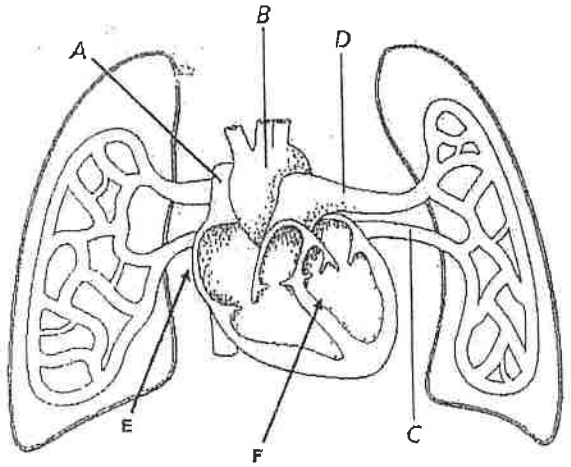
_____

+ Color code
O_2-rich blood
O_2- poor blood
parts ☺

The Circulatory System & Heart



1. Label the parts of the human heart in the diagram.
   a. _____
   b. _____
   c. _____
   d. _____
   e. _____
   f. _____
2. Draw the path that blood travels onto the diagram above, starting with blood returning to the heart from the body.
3. Compare-arteries, vein and capillaries.
4. Explain the function of a heart valve.
5. What muscle of the circulatory system pushes blood through the arteries and veins?
6. What is blood pressure?
7. Where does CO_2 in the blood come from?

8. What is weird/special about C and D above?