

# Cornell Guided Notes

Human Anatomy & Physiology (Human Body Systems) | 2027-04-26

Name

Period

Date

Lesson

## Lesson focus

Alveoli and gas exchange

## Key words and questions

## Prepared details and student notes

**Essential question**  
**What is today's target?**

Students will explain gas exchange at the alveolus using teacher notes and the PLTW online task. Big idea: Gas exchange at the alveolus is driven by partial-pressure gradients; any structural change that reduces surface area or increases diffusion distance impairs oxygenation.

**My notes, examples, and questions**

**Key words**  
**What vocabulary unlocks the lesson?**

- alveolus
- gas exchange
- tidal volume
- vital capacity
- spirometry
- oxygen saturation

**My notes, examples, and questions**

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## Cornell Notes - Continued

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#### Must-know ideas

What should I understand by the end?

- Oxygen diffuses from alveolus into blood; carbon dioxide diffuses from blood into alveolus, both down partial-pressure gradients.
- Tidal volume is the air moved in a normal breath; vital capacity is the maximum air moved in a forced breath.
- Pathologies like emphysema (reduced surface area) and pulmonary fibrosis (thickened membrane) impair diffusion.

#### My notes, examples, and questions

#### Process notes

What happens during class?

- 0-10: Warm-up: sketch the alveolus and capillary from memory
- 10-28: Guided notes: alveolar structure, diffusion direction, tidal volume vs. vital capacity
- 28-45: PLTW online gas-exchange activity
- 45-58: Draw and annotate diffusion diagram: O<sub>2</sub> and CO<sub>2</sub> arrows with partial-pressure labels
- 58-70: Write one question about gas exchange; peer-answer
- 70-80: Submit diagram and PLTW completion confirmation

#### My notes, examples, and questions

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#### Steps and evidence What do I do and turn in?

- Take notes on alveolar structure and diffusion.
- Define tidal volume and vital capacity.
- Complete the PLTW online gas-exchange activity.
- Diagram oxygen and carbon dioxide movement at the alveolus.
- Write one question about gas exchange.

Evidence: Notebook check - Annotated gas-exchange diagram showing oxygen and carbon dioxide diffusion directions at the alveolus with partial-pressure labels, plus definitions of tidal volume and vital capacity.

#### My notes, examples, and questions

#### Checks for understanding How do I know I got it?

- Diagram shows correct direction of gas diffusion.
- PLTW online task is submitted complete.

#### My notes, examples, and questions

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**Lab or safety notes**  
**What must I handle carefully?**

Supplies:

- Spirometer or spirometry sensor
- Disposable mouthpieces
- Respiratory system diagram
- Pulse oximeter
- Data table for lung volumes
- Lab notebook

**My notes, examples, and questions**

### Summary

Today's lesson focused on Alveoli and gas exchange. The main target was: Students will explain gas exchange at the alveolus using teacher notes and the PLTW online task. The evidence of learning is Notebook check: Annotated gas-exchange diagram showing oxygen and carbon dioxide diffusion directions at the alveolus with partial-pressure labels, plus definitions of tidal volume and vital capacity.. In my own words, the most important idea from today is:

**My summary**

### My final question or connection