

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-25

Name

Period

Date

Lesson

Lesson focus

Antibiotic mechanisms

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Explain how antibiotics kill or stop bacteria by targeting structures that human cells do not share. Big idea: How does the structural difference between bacterial and human cells make targeted antibiotic therapy possible?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- antibiotic
- bacteriostatic
- bactericidal
- MIC
- zone of inhibition
- resistance
- plasmid

My notes, examples, and questions

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-25

Cornell Notes - Continued

Key words and questions

Prepared details and student notes

Must-know ideas
What should I understand by the end?

- Bacteria have a peptidoglycan cell wall, 70S ribosomes, and a circular chromosome; although human mitochondria contain their own circular chromosomes and 70S ribosomes, human cells lack a cell wall and use 80S ribosomes in their cytoplasm.
- Beta-lactam antibiotics (such as penicillin) block cell-wall synthesis; aminoglycosides target the 70S ribosome; fluoroquinolones disrupt DNA replication.
- Viruses have no cell wall, no ribosomes of their own, and no independent metabolic machinery, so antibiotics have nothing to target.

My notes, examples, and questions

Process notes
What happens during class?

- 0-10 min: List three bacterial structures not found in human cells; mark which ones antibiotics could attack
- 10-25 min: Read about one antibiotic class (beta-lactams); summarize target and mechanism in two sentences
- 25-40 min: Explain in writing why that target harms bacteria but spares human cells
- 40-52 min: Read about a second antibiotic class; add it to a comparison table
- 52-65 min: Write the virus explanation: what structures do viruses lack that antibiotics need to work?
- 65-80 min: Write the connection sentence: how does knowing the mechanism explain why a drug treats some infections but not others?

My notes, examples, and questions

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-25

Cornell Notes - Continued

Key words and questions

Prepared details and student notes

Steps and evidence What do I do and turn in?

- List three bacterial parts an antibiotic might attack, such as the cell wall.
- Read how one antibiotic class works, then summarize its target in two sentences.
- Explain why that target harms bacteria but spares human cells.
- Note why antibiotics do not work on viruses.
- Match two antibiotic classes to the bacterial structure each targets.
- Write one sentence connecting mechanism to why some drugs treat some infections.

Evidence: Vocabulary task - Two-class antibiotic mechanism comparison table (target structure, mechanism, why it spares human cells) plus a sentence explaining why antibiotics do not work on viruses.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- You will be able to describe how antibiotics target bacterial structures.
- You will be able to explain why antibiotics spare human cells.
- You will be able to explain why antibiotics do not treat viruses.

My notes, examples, and questions

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-25

Cornell Notes - Continued

Key words and questions

Prepared details and student notes

Lab or safety notes
What must I handle carefully?

Supplies:

- Pre-poured agar plates (or simulation)
- Antibiotic disks
- Sterile forceps
- Ruler or calipers for zone measurement
- Inoculating loop
- Marker and tape for labeling

My notes, examples, and questions

Summary

Today's lesson focused on Antibiotic mechanisms. The main target was: Explain how antibiotics kill or stop bacteria by targeting structures that human cells do not share. The evidence of learning is Vocabulary task: Two-class antibiotic mechanism comparison table (target structure, mechanism, why it spares human cells) plus a sentence explaining why antibiotics do not work on viruses.. In my own words, the most important idea from today is:

My summary

My final question or connection