

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-29

Name

Period

Date

Lesson

Lesson focus

Resistance and stewardship

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Explain how antibiotic resistance evolves and why stewardship slows it down. Big idea:
How does antibiotic use create selection pressure that makes resistance inevitable without stewardship?

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) | 2026-09-29

Cornell Notes - Continued

Key words and questions

Prepared details and student notes

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

- Natural selection acts on bacterial populations: bacteria with random resistance mutations survive antibiotic treatment and reproduce, making resistance more common over time.
- Stopping antibiotics early leaves a partially treated population of mostly resistant survivors, accelerating resistance emergence.
- Stewardship actions (prescribing only when necessary, completing full courses, using narrow-spectrum drugs when possible) reduce selection pressure and slow resistance.

My notes, examples, and questions

Process notes
What happens during class?

- 0-12 min: Read the resistance evolution overview: rare resistant mutant survives, reproduces, population shifts
- 12-28 min: Draw a before-and-after diagram: sensitive population before treatment, resistant-dominated population after incomplete treatment
- 28-42 min: Explain in writing why completing the full prescribed course reduces resistance (removes more of the sensitive population that competes with resistant cells)
- 42-55 min: Use Wednesday's zone data: which antibiotic had the smallest zone? That drug is most at risk of becoming ineffective first under resistance
- 55-68 min: List two specific stewardship actions; explain the biological mechanism behind each
- 68-80 min: Write the connection sentence linking Monday's debate to the biological reality of resistance

My notes, examples, and questions

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-29

Cornell Notes - Continued

Key words and questions

Prepared details and student notes

Steps and evidence What do I do and turn in?

- Read how a few resistant bacteria survive treatment and then multiply.
- Draw a before-and-after picture of a population becoming mostly resistant.
- Explain why finishing a prescribed course can reduce resistance.
- Connect your zone-of-inhibition data to which drug resistance would make useless first.
- List two stewardship actions that slow resistance.
- Write one sentence linking your Monday debate to the biology of resistance.

Evidence: Notebook check - Before-and-after resistance diagram, explanation of why completing a course helps, zone-data connection to resistance risk, two stewardship actions with biological rationale, and one connection sentence to Monday's debate.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- You will be able to explain how antibiotic resistance evolves.
- You will be able to connect lab data to resistance risk.
- You will be able to name stewardship actions that slow resistance.

My notes, examples, and questions

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-29

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 Resistance and stewardship. The main target was: Explain how antibiotic resistance evolves and why stewardship slows it down. The evidence of learning is Notebook check: Before-and-after resistance diagram, explanation of why completing a course helps, zone-data connection to resistance risk, two stewardship actions with biological rationale, and one connection sentence to Monday's debate.. In my own words, the most important idea from today is:

My summary

My final question or connection