

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-03-02

Name

Period

Date

Lesson

Lesson focus

Aseptic technique

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Practice aseptic technique so you can grow a pure culture without contaminating it or yourself. Big idea: How does a scientist prevent unwanted organisms from entering a culture and invalidating every result?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- aseptic technique
- culture
- colony
- inhibition
- mutation
- horizontal gene transfer

My notes, examples, and questions

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Cornell Notes - Continued

Key words and questions

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

- Aseptic technique is a set of practices designed to prevent contamination of sterile materials and biological cultures.
- Common contamination routes include: air currents, skin contact, talking or breathing near open plates, and unsterilized tools.
- Contaminated plates grow mixed colonies that cannot be used to draw conclusions about a single bacterial strain.

My notes, examples, and questions

Process notes
What happens during class?

- 0-10 min: Brainstorm and list every possible contamination route: air, hands, tools, talking, surfaces
- 10-25 min: Read or watch the aseptic technique steps; write them in numbered order in your notebook
- 25-45 min: Dry practice: simulate flaming a loop (without flame), lifting a lid briefly with wrist only, working near the lab bench edge away from air currents
- 45-58 min: Explain in writing why you minimize the time a plate is open; connect to the contamination routes listed earlier
- 58-68 min: Write one safety rule for handling bacterial cultures and one for disposing of used materials
- 68-80 min: Draw and describe what a contaminated plate would look like versus a pure-culture plate

My notes, examples, and questions

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Cornell Notes - Continued

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Steps and evidence What do I do and turn in?

- List the ways a culture could get contaminated, from air to hands to tools.
- Watch or read the aseptic-technique steps and write them in order.
- Practice the motions dry: flaming a loop, lifting a lid briefly, working near the flame.
- Explain why you minimize the time a plate is open.
- Note one safety rule for handling cultures and waste.
- Predict what a contaminated plate would look like versus a clean one.

Evidence: Pre-lab - Numbered aseptic technique procedure, contamination routes list, explanation of why plates are kept closed, safety rules for cultures and waste, and contamination prediction sketch.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- You will be able to describe the steps of aseptic technique.
- You will be able to explain how contamination happens and how to prevent it.
- You will be able to handle cultures and waste safely.

My notes, examples, and questions

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Cornell Notes - Continued

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Lab or safety notes
What must I handle carefully?

Supplies:

- Agar plates (or culturing simulation)
- Inoculating loop
- Bunsen burner or sterile single-use loops
- Bacterial sample or broth
- Incubator
- Labeling marker and tape

My notes, examples, and questions

Summary

Today's lesson focused on Aseptic technique. The main target was: Practice aseptic technique so you can grow a pure culture without contaminating it or yourself. The evidence of learning is Pre-lab: Numbered aseptic technique procedure, contamination routes list, explanation of why plates are kept closed, safety rules for cultures and waste, and contamination prediction sketch.. In my own words, the most important idea from today is:

My summary

My final question or connection