Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-09-14

Name	Period	Date	Lesson
		2026-09-14	

Lesson focus

Concentration and serial dilution

Key words and questions	Prepared details and student notes

Essential question
What is today's target?

Calculate concentrations and plan a serial dilution so you can prepare known sample strengths. Big idea: How do scientists use a series of known concentrations to measure the unknown concentration of a sample?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- antigen
- antibody
- ELISA
- serial dilution
- standard curve
- substrate
- absorbance

My notes, examples, and questions

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Cornell Notes - Continued

Key words and questions	Prepared details and student notes
Must-know ideas **What should I understand by the end?**	- Concentration is the amount of a substance dissolved in a given volume; a 1:10 dilution means one part sample to nine parts solvent. - A serial dilution creates a sequence of known concentrations by repeating the same dilution factor at each step. - A standard curve plots signal versus known concentration, allowing you to read off the concentration of any unknown sample. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-10 min: Define concentration and dilution factor in notebook; review C1V1 = C2V2 if needed - 10-25 min: Work through the serial dilution example: a 1:10 starting from a known stock, four steps - 25-40 min: Plan your own four-step 1:10 serial dilution; write concentration at each step; double-check math - 40-55 min: Predict how color/signal intensity would change down the series and explain why - 55-70 min: Write one sentence connecting serial dilutions to standard curve construction - 70-80 min: Partner check: swap plans and verify each other's concentrations at every step **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?**	- Define concentration in your notebook as amount of substance per volume. - Read the serial-dilution example, then write what a 1:10 dilution does to concentration. - Plan a four-step 1:10 serial dilution and write the concentration at each step. - Double-check your math: each step should be one-tenth of the step before. - Predict how the color or signal would change down a dilution series. - Write one sentence on why dilutions are useful for building a standard curve. Evidence: Data table - Four-step 1:10 serial dilution plan with concentration calculated at each step, plus a one-sentence prediction of signal change. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You will be able to define and calculate concentration. - You will be able to plan a serial dilution and predict each step's concentration. - You will be able to explain why dilutions matter for measurement. **My notes, examples, and questions**

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Key words and questions	Prepared details and student notes
Lab or safety notes **What must I handle carefully?**	Supplies: - Micropipettes and tips - Microcentrifuge tubes or microplate - Stock antigen solution - Buffer or diluent - Microplate or tube rack - Lab notebook for the dilution table **My notes, examples, and questions**

Summary

Today's lesson focused on Concentration and serial dilution. The main target was: Calculate concentrations and plan a serial dilution so you can prepare known sample strengths. The evidence of learning is Data table: Four-step 1:10 serial dilution plan with concentration calculated at each step, plus a one-sentence prediction of signal change.. In my own words, the most important idea from today is:

My summary

My final question or connection