Cornell Guided Notes

Human Anatomy & Physiology (Human Body Systems) | 2027-04-12

Name	Period	Date	Lesson
		2027-04-12	

Lesson focus

Hypothesis and protocol

Key words and questions	Prepared details and student notes
Essential question **What is today's target?**	Students will write a hypothesis and protocol for a C. elegans heavy-metal investigation using teacher notes and the PLTW online task. Big idea: A hypothesis is a specific, testable prediction that drives the design of every step in an experiment. **My notes, examples, and questions**
Key words **What vocabulary unlocks the lesson?**	- heavy metal - toxicology - hypothesis - data table - graph - limitation - conclusion **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?**	- An if-then hypothesis names the independent variable, predicts the direction of change, and identifies the dependent variable. - A protocol lists materials, step-by-step procedure, and safety precautions in enough detail to be replicated. - Heavy-metal exposures require careful handling protocols to protect the experimenter and prevent contamination. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-10: Notes: if-then hypothesis structure and common mistakes - 10-25: Write your if-then hypothesis for the heavy-metal C. elegans investigation - 25-42: PLTW online protocol-planning activity - 42-58: Draft complete materials list and step-by-step procedure - 58-70: Add one safety consideration with a rationale for each precaution - 70-80: Partner review of hypothesis and protocol; submit pre-lab **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Take notes on hypothesis structure and prediction. - Write an if-then hypothesis for your investigation. - Complete the PLTW online protocol-planning activity. - List the materials and steps for your procedure. - Note one safety consideration for heavy-metal handling. Evidence: Pre-lab - Written if-then hypothesis, complete materials list, step-by-step procedure, and at least one safety consideration with rationale for the C. elegans heavy-metal investigation. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- Hypothesis is testable and written in if-then form. - PLTW online task is submitted with a complete protocol. **My notes, examples, and questions**

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Lab or safety notes
What must I handle carefully?

Supplies:
- C. elegans plates or validated heavy-metal simulation
- Heavy-metal solution or simulated treatment cards
- Stereo microscope or simulation device
- Data table and graph paper or graphing app
- Gloves and goggles
- Lab notebook

My notes, examples, and questions

Summary

Today's lesson focused on Hypothesis and protocol. The main target was: Students will write a hypothesis and protocol for a C. elegans heavy-metal investigation using teacher notes and the PLTW online task. The evidence of learning is Pre-lab: Written if-then hypothesis, complete materials list, step-by-step procedure, and at least one safety consideration with rationale for the C. elegans heavy-metal investigation.. In my own words, the most important idea from today is:

My summary

My final question or connection