

Cornell Guided Notes

Principles of Biomedical Technology (Principles of Biomedical Science) | 2026-12-14

Name

Period

Date

Lesson

Lesson focus

Device and model testing lab

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Students build and test a device or vessel model, collecting data to evaluate performance. Big idea: Performance data only means something if you controlled the variables and ran enough trials: one trial is a measurement, three trials are evidence.

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- prototype
- constraint
- criterion
- CAD
- iteration
- stent
- prevention
- test plan

My notes, examples, and questions

Cornell Guided Notes

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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?

- The independent variable is what you deliberately change; the dependent variable is what you measure as a result.
- Controlled variables are held constant across all trials so that only the independent variable causes outcome differences.
- Measurement error can come from tool precision, assembler technique, or environmental variability; name the source, not just the effect.

My notes, examples, and questions

Process notes
What happens during class?

- 0-8 min: Record the assembly and testing SOP; verify all materials are present at your station.
- 8-15 min: Identify and record independent, dependent, and controlled variables.
- 15-40 min: Assemble the device or vessel model to specification following the SOP.
- 40-62 min: Run at least three repeated trials; record performance data in a labeled data table after each trial.
- 62-72 min: Calculate the average performance across trials; note one measurement error source.
- 72-80 min: State one test-setup limitation; begin organizing data for Thursday CER.

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?

- Record the SOP for assembling and testing the model.
- Identify the independent, dependent, and controlled variables for the test.
- Build the CAD-based or physical model to specification.
- Run repeated trials and record performance data in a table.
- Note measurement error and one limitation of the test setup.

Evidence: Data table - Completed data table with at least three trial measurements, labeled independent and dependent variables, an average performance calculation, one measurement error source, and one test-setup limitation.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- Collect repeated-trial performance data following the SOP.
- Identify all variables and state one procedural limitation.

My notes, examples, and questions

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Cornell Notes - Continued

Key words and questions

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Lab or safety notes
What must I handle carefully?

Safety:

- Handle scissors and any cutting tools with blade pointed away from the body.
- Do not modify model materials beyond the SOP: unauthorized changes invalidate the trial data.
- Keep adhesives and solvents (if any) capped when not in use; avoid skin contact.
- Clean up all loose model scraps and dispose in the designated waste bin before leaving the station.
- Wash hands after handling any lab materials.

Supplies:

- Device or vessel model kit materials (as specified in the PLTW unit materials list)
- Ruler or measuring tape
- Scale or balance (if mass is a measured variable)
- Scissors and tape or adhesive
- Pencil and data table template
- Timer or stopwatch (if time is a measured variable)

My notes, examples, and questions

Summary

Today's lesson focused on Device and model testing lab. The main target was: Students build and test a device or vessel model, collecting data to evaluate performance. The evidence of learning is Data table: Completed data table with at least three trial measurements, labeled independent and dependent variables, an average performance calculation, one measurement error source, and one test-setup limitation.. In my own words, the most important idea from today is:

My summary

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Cornell Notes - Continued

My final question or connection