

Cornell Guided Notes

Principles of Biomedical Technology (Principles of Biomedical Science) | 2026-09-17

Name

Period

Date

Lesson

Lesson focus

Tissue and heart lab

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Examine histology slides under the microscope and observe gross heart anatomy following an SOP. Big idea: Histology bridges the microscopic world of cells to the macroscopic world of organs, giving pathologists the evidence to determine cause of death.

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- homeostasis
- tissue
- organ system
- toxicology
- histology
- mechanism of death

My notes, examples, and questions

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Cornell Notes - Continued

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

- Magnification must always be recorded with a microscopy sketch because the apparent size of a structure is meaningless without it.
- The heart has four chambers (right/left atria and ventricles), four valves (tricuspid, pulmonary, mitral, aortic), and its wall is primarily cardiac muscle tissue.
- Preserved specimens have altered texture, color, and smell compared to fresh tissue; fixative chemicals require PPE and ventilation.

My notes, examples, and questions

Process notes
What happens during class?

- 0:00: Review SOP for microscopy and heart examination; PPE check before anyone opens specimen containers
- 0:10: Microscopy station: four prepared histology slides; identify and sketch each at 40x and 100x
- 0:40: Heart anatomy station: examine preserved heart; locate and label four chambers, four valves, major vessels
- 1:05: Record one limitation of slide-based identification and one error source in lab notebook
- 1:05: Station cleanup per SOP: cover specimens, return slides to tray, clean microscope stage
- 1:10: Preview Thursday analysis; brief debrief on what surprised students

My notes, examples, and questions

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Steps and evidence What do I do and turn in?

- Read the microscopy SOP and set magnification and focus correctly.
- Identify epithelial, connective, muscle, and nervous tissue on slides.
- Sketch each tissue with magnification and one identifying feature labeled.
- Examine a preserved heart and locate chambers, valves, and vessels.
- Record one limitation of slide-based identification and one error source.

Evidence: Lab report - Lab notebook pages: four histology sketches (one per tissue type, magnification labeled, one feature identified), a labeled heart diagram with chambers, valves, and major vessels, and one limitation and one error source noted.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- I can identify the four tissue types under magnification.
- I can locate the major structures of the heart.

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?

Safety:

- Preserved specimens contain fixative chemicals (formaldehyde or formalin substitute): wear nitrile gloves and goggles at all times at the heart station; work in a well-ventilated area.
- Do not inhale deeply over an open specimen container; if you feel lightheaded or notice strong fume odor, move away and notify the teacher.
- Histology slides are glass: handle by the edges only; place cracked or broken slides in the designated sharps container immediately.
- Never touch the microscope lens with anything other than lens paper; do not use paper towels or your clothing to clean optics.
- After the heart examination, seal the specimen tray, remove gloves using the glove-to-glove technique, and wash hands with soap and water for at least 20 seconds.

Supplies:

- Compound microscopes (one per group of 2-3 students)
- Prepared histology slides: epithelial tissue, connective tissue (e.g., hyaline cartilage), cardiac or skeletal muscle, and nervous tissue (e.g., spinal cord cross-section)
- Lens paper and lens-cleaning solution
- Preserved mammalian heart (e.g., sheep or pig heart) in sealed specimen tray
- Dissection tray or large aluminum pan
- Blunt probe or wooden applicator sticks for heart examination
- Nitrile gloves (multiple sizes)

My notes, examples, and questions

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Summary

Today's lesson focused on Tissue and heart lab. The main target was: Examine histology slides under the microscope and observe gross heart anatomy following an SOP. The evidence of learning is Lab report: Lab notebook pages: four histology sketches (one per tissue type, magnification labeled, one feature identified), a labeled heart diagram with chambers, valves, and major vessels, and one limitation and one error source noted.. In my own words, the most important idea from today is:

My summary

My final question or connection