Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2026-10-21

Name	Period	Date	Lesson
		2026-10-21	

Lesson focus

PCR and primers

Key words and questions	Prepared details and student notes
Essential question **What is today's target?**	Diagram the steps of PCR and explain how primers and restriction enzymes target specific DNA. Big idea: How does PCR act as a molecular photocopier that makes one target sequence readable amid billions of others? **My notes, examples, and questions**
Key words **What vocabulary unlocks the lesson?**	- primer - restriction enzyme - gel electrophoresis - microarray - hybridization - marker **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?**	- PCR steps: denaturation (~95 C separates strands), annealing (~55-65 C primers bind), extension (~72 C Taq adds nucleotides). - Primers are short single-stranded sequences complementary to the flanking regions of the target; only the region between them is copied. - Restriction enzymes cut double-stranded DNA at specific palindromic recognition sequences, producing fragments of defined size. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-8: Hook: crime-scene scenario; introduce PCR as molecular amplification - 8-25: Draw and label three PCR steps with temperatures - 25-45: Add primers to diagram; explain why sequence controls what is copied - 45-60: Add restriction enzyme cut site and recognition sequence note - 60-72: Write one sentence connecting PCR output to gel input - 72-80: Submit diagram; preview Wednesday gel lab supplies and safety **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Draw the three PCR steps, denaturation, annealing, and extension, and label the temperature of each. - Show where two primers bind and explain why their sequence determines what gets copied. - Add a note on how a restriction enzyme cuts DNA at a specific recognition site. - Write one sentence on why PCR is needed before you can run a gel. - Submit your labeled PCR diagram as your daily evidence. Evidence: Notebook check - Labeled PCR diagram showing all three steps with temperatures, primer binding sites, restriction enzyme cut, and one bridging sentence to gel electrophoresis. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You'll be able to diagram and label the three steps of PCR. - You'll be able to explain how primers and restriction enzymes target specific sequences. **My notes, examples, and questions**

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Lab or safety notes
What must I handle carefully?

Supplies:
- Agarose gel and casting tray
- Gel electrophoresis chamber with power supply
- Micropipette and tips
- Loading dye and DNA size ladder
- TAE or TBE running buffer
- Safety goggles and nitrile gloves

My notes, examples, and questions

Summary

Today's lesson focused on PCR and primers. The main target was: Diagram the steps of PCR and explain how primers and restriction enzymes target specific DNA. The evidence of learning is Notebook check: Labeled PCR diagram showing all three steps with temperatures, primer binding sites, restriction enzyme cut, and one bridging sentence to gel electrophoresis.. In my own words, the most important idea from today is:

My summary

My final question or connection