Pre-lab questions:
Please watch the following brief animations about Polymerase Chain Reaction (PCR) and Gel Electrophoresis:
PCR: https://dnalc.cshl.edu/view/15625-Polymerase-chain-reaction-PCR-.html
Gel Electrophoresis: https://dnalc.cshl.edu/resources/animations/gelelectrophoresis.html

1. What is the purpose of PCR?

2. How does the charge of DNA play a role in its migration through an agarose gel?

During-lab observations:

1. What is the purpose of the primer in PCR?

    a. What DNA barcoding primers are used for amplification of the sample(s) in today's lab?

2. What is the problem with using a standard DNA polymerase for PCR?

    a. What polymerase is used in today's lab, and what organism does it come from?

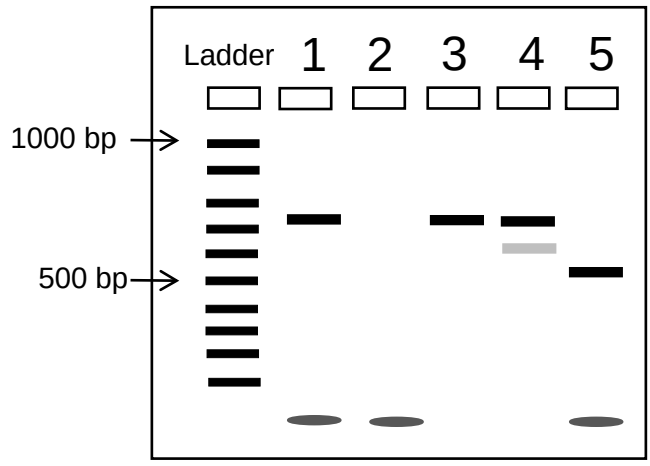
    b. Why is this polymerase more suitable for PCR?

3. Why is a DNA ladder (or DNA marker) used during gel electrophoresis?

Post- lab questions:

1. What sequence will the primer "GATTATAACTCAACTACC" bind to?

2. Observe the gel image below showing the "amplicons," or amplified DNA region of interest, for 5 different samples using the COI primer. Indicate whether the amplicons in each lane are sufficient for sequencing, and why.



Lane 1:

Lane 2:

Lane 3:

Lane 4:

Lane 5:

3. After PCR, you find that your amplicons as not been sufficiently amplified. Assuming no original error on your part, how might you modify your experiment to increase the amount of amplified DNA you obtain?