

# DNA Structure Worksheet

## Part 2. DNA Isolation Lab Activity

Complete the following table showing how each step in the isolation process separates DNA from other substances.

### DNA Isolation Process

Step	Describe results at the molecular level
Add salt water and stir	
Add SOS	
Add EDTA	
Add Ethanol	

**Post-Lab Analysis** (*Use a separate sheet of paper to answer the following questions.*)

1. Assign each of the steps from the table above to a different member of your group. Draw a model of the step showing how the chemical added interacts with the cells and/or DNA in the sample.
2. Share the models among your group and make changes based on feedback within your group. Record any changes to your models.
3. Compare the two different samples of DNA collected in your group. Note the quantity in each. Explain why there may be differences.

## Part 3. Modeling Forensic DNA Analysis

**Post-Lab Questions** (*Use a separate sheet of paper to answer the following questions.*)

1. Explain how the heating and cooling facilitates bonding and releasing during PCR.
2. Describe four differences between the simulation of DNA forensics and the actual process.
3. Why must a sample contain at least 8 STR markers to be used for forensic analysis?

### Final Analysis Question

1. Using the claims, evidence, reasoning model, make a claim about who may have committed the murder according to the DNA evidence. Defend the claim with specific evidence and use scientific information to back it up.

# Gel Electrophoresis Template

Number of Bases	Lane 1 Crime Scene DNA	Lane 2 Victim DNA	Lane 3 Suspect 1 DNA	Lane 4 Suspect 2 DNA
24				
23				
22				
21				
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				

# Visualization of Results Template

