

DNA Detectives



Worksheet

Dear DNA Detectives,

Last night, Peter, a well-known businessman, was discovered murdered in the nearby hotel. As the forensic investigators on the scene, it is your job to find the murderer.

We need you to:

- Listen to the briefing about the murder.
- Look at the crime scene to find any evidence containing DNA, which might help to catch Peter's killer.
- Take your samples back to the lab for analysis.
- Listen to the suspects statements and decide whose DNA samples you want to take.
- You must then compare the evidence profiles with the suspects profiles and try to find out which of the guests has killed Peter.

We know you have just started as DNA Detectives, so we have given you this worksheet to help you to find the killer.

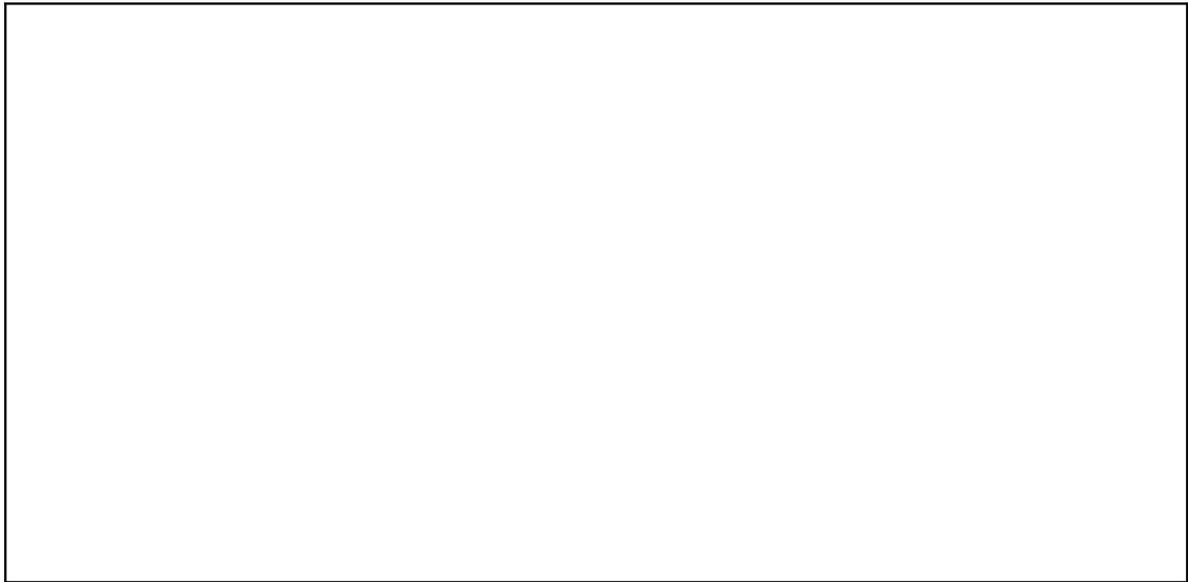
- The Chief Inspector

1. First of all, have a look around the crime scene. Don't touch anything yet! All the samples must be found, and their position must be carefully noted. Use the table below to help you - one has already been done for you.

Type of sample (blood, skin, etc.)	Where was it found? (on the body, etc.)
skin	on the victim's jacket

2. Now you can take the samples to the lab to have them analysed. These will come back as a sheet of 'profiles' - these show different coloured bars. This profile helps to see what someones DNA looks like. Each person has a different profile. Keep this sheet safe - you will have to use them later.

3. Listen to the police pathologist (the doctor) tell you what has been discovered about the crime from the analysis of Peter's body. Write any interesting notes into the box below.

A large, empty rectangular box with a thin black border, intended for students to write their notes on the crime analysis.

4. You have found out that there are 6 people who could have killed Peter. These are his 5 guests: Alex, Eric, Olivia, Melinda, and Dave, and the hotel maid Lisa.

These suspects will each give their statements. Make notes from what they say in the table below, thinking about whether or not they had a chance to commit the murder.

Afterwards, the police Chief Inspector has allowed you to take DNA samples from only 3 of the suspects. They have given you their permission to take their DNA, and you must now carefully decide which ones you would choose. Mark your choices down in the table below.

Name	Notes from suspects statements	Do you suspect them?	Who would you ask for DNA from? <i>only 3 people!</i>
Alex			
Eric			
Lisa			
Olivia			
Melinda			
Dave			

5. Collect the DNA profile cards for your 3 suspects and the victim. These have already been analysed to make things easy.

6. You will need the sheet of DNA profiles from the crime-scene. Try to match the pattern of bands on the profiles from the suspects to those from the scene of the crime.

7. What can you conclude from comparing the profiles? You might need to think about what the suspects said in their statements. Don't forget - not all the DNA found at the crime scene may have anything to do with the murder!

DNA Sample	Does this profile match any of your suspects? Which one?	Do you think this sample belongs to the murderer?
Blood found on the windowsill		
Blood found on the blade of the knife		
Skin cells found on the handle of the knife		
Skin cells found under victims's fingernails		
Skin cells found on victims's jacket		

8. Do you think you can now identify the murderer? If you haven't found a matching profile from your chosen suspects, you have now been given permission to look at the local DNA database - this might help you find the murderer. Collect the the database sheet.

9. Who do you think is the murderer? Write their name in the box below.

10. Well done! Once you have all finished, the Chief Inspector will reveal the true murderer's identity and tell you the story of what actually happened.

Questions

Remember, there are no correct answers here: governments, doctors, scientists and the public all have different opinions. A balance must be made between everyone's point of view. Discuss these questions in your group or class.

Question 1:

Why do you think the murderer's DNA was on the DNA database? How might you have found the murderer if his DNA was not on the database?

Question 2:

What do you think should happen to the DNA taken from the suspects who turn out to be innocent? Should their DNA be put onto the DNA database or should their profiles be destroyed?

Question 3:

What do you think should happen to the DNA profile of a 12 year old shoplifter? Should children's DNA be on the DNA database - and does it depend on how serious the crime is? What about a 12 year old convicted of murder?

Question 4:

After playing this game, what do you think about using DNA databases for solving crimes? Can you think of any reasons why you might not want your DNA on a database?