

Name KEY Date _____

CSI: The Experience – Case #2 Canine Caper

Go to www.forensics.rice.edu and click on Case # 2 – Canine Caper.

GETTING TO KNOW THE GAME

- In each room, you can talk with a character by clicking on him or her.
- Explore a room by moving the mouse around and finding interactive objects to click on.
- To change rooms, click on the location tab at the bottom and click where you want to go.
- Before leaving a location, click on the CSI agent again to check if you are finished there.

GRISSEY'S OFFICE

Click on Grissom. Click on each question and read the answer.

What happened? **murder and possible dog-napping**

Where did it happen? **Las Vegas Dog Show**

What tools will you need? **PDA** and **Field Kit**

Who will be assisting you? **Grissom himself**

Remember to pick up the PDA and Field Kit on the desk.

RANGERS RV

Click on Deborah Ranger. Click on each question and read the answer.

What kind of dog is Apollo? **Cocker Spaniel**

Who is the deceased? **Marco Williams – Ranger's dog handler**

When did she last see him alive? **between 10 - 11**

Besides the characters, there are 7 other interactive objects.

Click on the piece of paper near the sink. What is it? **Prescription for Apollo**

Click on the folder.

Find 4 pieces of evidence and write them down along with the method you will use in the lab to examine it.

Evidence	How to examine it. ex. light table, toxicology station
1. notepad	light table
2. dog food	toxicology station
3. spoon	fingerprint station
4. hair	comparison microscope

Click on the wadded piece of paper on the sofa. What is it? **Apollo's daily schedule**

Click on Deborah Ranger again to ask her about the wadded up piece of paper.

Who is a person of interest to remember? **The competition veterinarian**

Click on Grissom. Click on question, are we finished here? This will unlock a new room, the morgue.

CSI MORGUE

Click on Dr. Robbins.

What was the cause of death? **blunt force trauma to the forehead**

What was the time of death? **less than 5 hours ago**

Click on the cut on the forehead.

Find 3 pieces of evidence and write them down along with the method you will use in the lab to examine it.

*Click on the puncture wound on the neck. How will you analyze the blood? **toxicology** (1 piece of evidence)*

*Click on the bitemark on the arm. How will you preserve the bitemark? **photograph** (2 pieces of evidence)*

Evidence	How to examine it. ex. light table, toxicology station
1. blood	toxicology station
2. bite mark picture	light table
3. unknown DNA from saliva on bite wound	DNA station

CSI LAB (FIRST VISIT)

There are 7 pieces of evidence to be analyzed. Click and then drag the evidence to an appropriate station (when the evidence glows yellow, it means you can analyze that evidence there) and follow the instructions to complete the analysis.

Process the victim's blood at the Toxicology Station.

What is a positive control? **A sample that purposely contains a certain drug.**

Why is each test duplicated? **To help ensure no mistakes are made.**

What drug is in Marco Williams' blood? **barbiturates**

What type of barbiturate was found? **Sodium Thiopental**

What is another name for this drug? **"Truth Serum"**

Did Mr. Williams have enough of this drug in his body to kill him? yes **no**

Process the Bitemark Saliva at the DNA Station

No two individuals have the same exact DNA markers except **identical twins**

Follow directions to search CODIS and match the DNA profiles. (Drag each of the three possible CODIS matches to the right area and click on CONFIRM MATCH, so that you can complete the activity.

Was there a match in the CODIS? yes **no**

What are you going to do next? **Collect DNA samples from suspects for comparison.**

Process the bitemark Photo at the Light Table.

To measure the bitemark, we use a **ABFO No. 2 scale**

What is the width of the bitemark? (across from left to right) **4 cm**

What is the height of the bitemark? (top to bottom) **3.5 cm**

Click on SEE EXAMPLES to determine if this bitemark is human or canine.

What type of bite mark is it? **human**

Process the notepad at the Light Table

What tool will reveal the indented markings on the notepad? **Electrostatic Detection Apparatus (ESDA)**

Can more than one layer on a notepad be readable with this technique? yes **no**

Follow the steps to analyze the notepad.

There are two messages on the notepad, what do they say?

1. Call Ranger before meeting with Murphy at 12:30 (refuse his job offer)
2. To do list – buy more tickets – grocery shopping

Which one is newer? #1 The meeting note

Process the spoon at the Fingerprint Station

What method are you going to use to check for fingerprints? Superglue Fuming Method

Follow the steps to process the spoon for fingerprints.

Drag the fingerprint to the screen and click SEARCH.

What is the name of the database for fingerprints? Integrated Automated Fingerprint Identification System (IAFIS)

Drag each fingerprint to the screen and click MATCH

Whose fingerprint was it? Wesley Murphy – Dog breeder

Why was he fingerprinted on October 6, 2000? Arrested for drunk driving (DUI)

What did you learn from the fingerprint comparison? Someone named Wesley Murphy left his fingerprints on a spoon at the crime scene.

How did this person's fingerprints get into the database? He was arrested in 2000 for drunk driving (DUI)

What technique did you use to develop the fingerprints? Superglue Fuming Method

Process the dog food at the Toxicology Station.

What does the food smell like? almonds This smell is a sign of what poison? cyanide

Follow the steps to process the dog food.

Assuming there is cyanide in the dog food, can you predict the color change in all the wells?

The positive control and the sample will be blue.

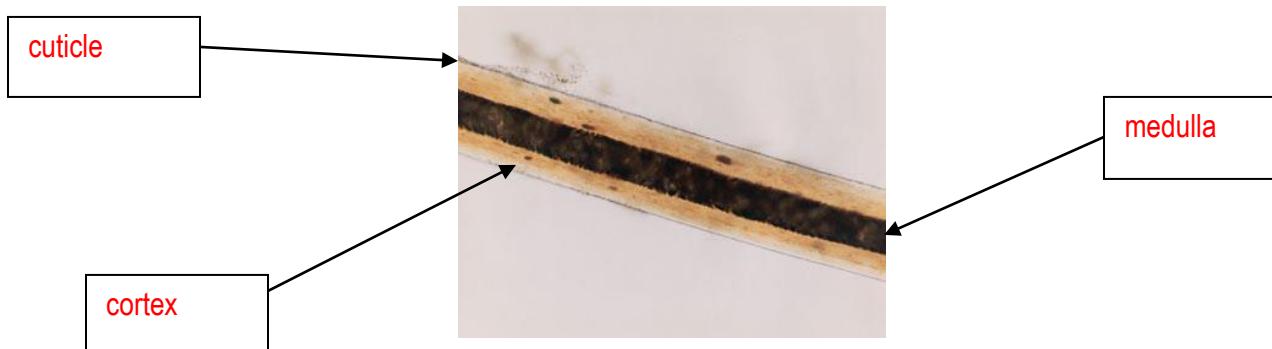
What does the positive control tell you? The positive control tests detects cyanide.

Why didn't the extraction buffer liquid change colors? The extraction buffer doesn't contain cyanide.

What does the experiment tell you about Apollo's dog food? It contained cyanide.

Process the unknown hair and the Comparison Microscope.

Label the three parts of a hair:



Focus the hair under the microscope. Click on each type of lighting. Look at the pictures and read.

Direct lighting is lighting from **underneath**. It reveals the inner structures of the hair.

Oblique lighting is lighting from the **side**, not underneath. This lighting highlights the cuticle or surface of the hair.

Click on SEE EXAMPLES, Click on SEE EXAMPLES of each question.

What is the scale pattern of the cuticle? **imbricate**

What type of medulla does this hair have? **absent**

The hair found at the crime scene is a **human** hair.

Is there a follicle tag attached to the hair root? yes **no**

Is there any Nuclear DNA in this hair to test? yes **no**

93% of hairs contain mitochondrial DNA.

Read about Nuclear DNA and Mitochondrial DNA.

What did you learn from this unidentified hair? **The hair is from an unknown human.**

What characteristics did you look at? **scale pattern and medulla**

What should you do next? **Find a suspect that has a similar hair sample.**

Click on Greg and then "I think I am done here" to unlock two locations, Vet's Office and Murphy's RV

RANGER'S RV (SECOND VISIT)

Click on Deborah Ranger, click on each statement to her and use your tools to collect evidence from her.

What three pieces of evidence did you collect from Ms. Ranger?

1. hair sample
2. DNA sample
3. bite impression

Click on Grissom and then "I think I'm done here."

VET'S OFFICE (FIRST VISIT)

Click on Dr. Knox, click on the questions and read the answers.

That did she say about the dog? He was always **sick**

What does she want before she will allow you to collect evidence from her? **search warrant**

Use luminal to spray the trash can. Was trace blood detected? **yes** no (Use arrow to the right to close)

After you use the luminal, the picture on the wall will straighten. Use the swab to collect a blood sample off the wall by the picture.

What kind of evidence is the blood on the swab? **trace evidence**

There are two more clickable objects (not the characters), what are they?

bottle of sodium thiopental and cell phone

(Remember when a picture comes up on the screen and you can't see the location you are in, you have to click the arrow to your right to exit that picture.)

Click on Grissom and click "I think I am done here" and "I'll select our next location"

MURPHY'S RV

Click on Murphy, click each question, read the answers.

What time were Murphy and Williams supposed to meet? **12:30**

Why were they meeting? **Murphy offered Williams a job**

Use luminal to spray suspicious areas like the counter or the dog cage.

Any trace evidence found? yes **no**

There are two clickable objects in the room (not the characters), what are they?

a bottle of rat poison and the dog (it barks)

*Click on Murphy. What does he use poison for? **to kill rats***

*Why were his fingerprints on a spoon in Ms. Ranger's RV? **He wanted to make Apollo sick so he poisoned him.***

Use your tools to collect two pieces of evidence from Murphy.

*What two pieces of evidence will you collect from Murphy? **DNA sample and bite impressions***

*(Using your observation skills) – Why didn't we collect a hair sample from Murphy? **He's bald***

CSI LAB (SECOND VISIT)

There are 7 pieces of evidence to be analyzed. Click and then drag the evidence to an appropriate station (when the evidence glows yellow, it means you can analyze that evidence there) and follow the instructions to complete the analysis.

Drag Ranger's bite impression to the Light Table

*Bite marks are not as unique as **fingerprints** or **DNA***

*However, they can be used to **rule out a suspect***

Follow the steps to make a cast of Rangers top and bottom teeth.

*Are Deborah Ranger's teeth a match to the victim's bitemark? yes **no***

Drag Ranger's hair sample to the Comparison Microscope.

*Follow the steps to analyze Ranger's hair. Does Ranger's hair match the unknown sample? yes **no***

Drag Murphy's bite impression to the Light Table. Repeat the same steps to make a cast of Murphy's top and bottom teeth. Click "Do it myself"

*Are Murphy's teeth a match to the victim's bitemark? yes **no***

Drag the Trace Blood evidence to the DNA Station

*Follow the steps to analyze the trace blood. Is it animal or human blood? **Human blood***

*Compare the DNA profile of the trace blood to the victim's blood. Does it match? **yes no***

*What did you learn from these DNA profiles? **Marco Williams' blood is in the vet's office***

*How do you know? The DNA profiles were **identical***

*Who is our Number One suspect now? **Dr. Sariel Knox – Veterinarian***

Click the PDA and read the message from Lt. Jim Brass. What did Brass get that will help collect evidence from Dr. Knox? [Search warrant](#)

VET'S OFFICE (SECOND VISIT)

Click on Dr. Knox. Click on, "I have a warrant to collect evidence."

What 3 pieces of evidence will you collect? [Hair sample,](#)

[Bite impressions](#), and [DNA](#)

Use your tools to collect the 3 pieces of evidence.

CSI LAB (THIRD VISIT)

Drag Knox's hair to the Comparison Microscope. Is it a match to the unknown hair? [yes](#) no

What should you do next? [I have to run a mitochondrial DNA \(mtDNA\) test to confirm it](#)

Drag Knox's bite impression to the Light Table. Repeat the same steps to make a cast of Knox's top and bottom teeth. Click "Do it myself"

Do Knox's teeth match the bitemark on the victim? [yes](#) no

So who caused the bitemark on Marco Williams' arm? [Sariel Knox probably bit him](#)

How can we confirm this? [We can match the bitemark saliva DNA to Knox's DNA](#)

Drag Knox's DNA to the DNA Station. Choose Unknown Hair. Read about the process of mtDNA extraction and complete the steps to analyze Knox's hair using Mitochondrial DNA (mtDNA).

What were the results of the mtDNA test on Knox's hair? [This is probably Knox's hair](#)

Drag Knox's DNA back to the DNA Station and click on Unknown DNA.

Compare the DNA of Knox to the unknown DNA found in the saliva on the bitemark of the victim.

Does Knox's DNA match the DNA found on the victim? [yes](#) no

What did you learn from the DNA test? [It is conformed that Knox bit Mr. Williams](#)

Click on the PDA and read the message from Grissom. Click on the attachment and drag the correct clues to the glowing boxes to answer his questions. You can click on each picture and read the description first.

What evidence shows that the suspect was at the crime scene? [Knox's hair at the scene](#)

Who has access to the drug found in the victim's body? [Sodium Thiopental at Vets](#)

Who bit our victim before his death? [Knox's DNA on Bitemark](#)

Where did the death of the victim most likely occur? **Victim's Blood at Knox's**

Click SUBMIT ANSWERS. When you get them all correct, you will automatically be taken to the interrogation room.

INTERROGATION ROOM

Click on Dr. Knox. Read the conversation and how it all happened.

Congratulations, you have solved the case. What was Dr. Knox charged with? **manslaughter**

Where was Apollo? **With the SPCA**

Was Apollo returned to Deborah Ranger? **yes** no

What happened to Wesley Murphy? **He was banned from all competitions**

NICE WORK!!!