

Complete this worksheet as you watch the video.

1. The job of the Forensic Science Unit is to collect _____ evidence.
2. To document a tire track, it is first _____ and then _____ are made using dental cement that is poured into a metal form.
3. Investigators use a high-powered _____ to trace the path to the victim. The light shines at _____ that cause materials to fluoresce and _____ goggles help make evidence stand out sharply.
4. Evidence that is collected at a crime scene is sent to the Department of Law Enforcement and is analyzed by a _____, who goes through the debris that is collected at a crime scene.
5. _____ fibers are valuable clues because they can link suspects to a specific location.
6. The tire track expert studies the photographs taken at the crime scene to examine the tread _____ to determine what kind of vehicle uses that kind of a tire.
7. Tire treads are made up of geometric shapes called _____. The key to tire identification is to match differences in pitches. They also examine tiny cuts on the surface called _____ that were molded into the tire by small metal teeth.
8. The final pieces of _____ needed for an airtight case was obtained by investigators offering a dog bathing service. During the bath, investigators gathered some dog _____ and also got carpet _____ from the living room, which matched those found at the crime scenes.
9. Forensic science has become one of the justice system’s most powerful _____, but can do great harm if they are misused. In one case, hairs from a crime scene lead to the _____ of an innocent man.
10. Hairs are not distinct enough to be linked to an _____. They most investigators could ever say are that “hairs could have come from the same _____”, but can never say that hairs come from a given individual.

<p>Word Bank</p> <p>Carpet Casts Chemist Conviction Evidence Fibers Hair Individual Light Orange Pattern Photographed Physical Pitches Sites Source Tools Wavelengths</p>

11. To compare hair samples, investigators examine the hair's _____ to see pigment distribution. Investigators also examine the outer sheath, called the _____, which grows in overlapping scales. Some hairs have a visible inner shaft, called a _____. In other hairs, the medulla appears cracked or _____ or they have no medulla.

12. Each cell in the body contains _____, which is shaped like a twisted ladder with rungs. The sequence of the _____ is unique for each individual. Scientists can remove DNA from body _____ and fluids and make it key segments of it visible on x-ray film. The _____ produced in the films can positively link a suspect to DNA from a crime scene or exclude a suspect. DNA evidence was able to exclude an ex-boyfriend as well as the suspect, which proved his _____.

13. Forensic scientists and scholars can study a painting to determine if it is _____ or a forgery. A forensic scientist can try to determine the painting's age by taking samples of the _____ and placing them on a microscope slide. Each color is made from a different mineral or vegetable base and gives it a unique appearance under a polarizing light _____.

14. Investigators can also analyze the _____, which is a substance that suspends the pigment and allows painters to use it on a canvas. The most common medium is _____ oil, but Leonardo da Vinci also used _____ oil.

15. Samples of the canvas can be removed for _____ to reveal the age of the canvas itself.

16. The test results could not rule out the possibility that the painting was created by Leonardo da Vinci, so the painting's owner turned to _____ to help him. The scholars noticed the _____ in Christ's wrist, which DaVinci did in his paintings.

Word Bank

Authentic
Broken
Carbon Dating
Color
Cuticle
DNA
Holes
Innocence
Linseed
Medium
Medulla
Microscope
Paint
Patterns
Rungs
Scholars
Tissues
Walnut

United Streaming: The Value of Evidence

ANSWER KEY

1. The job of the Forensic Science Unit is to collect **physical** evidence.
2. To document a tire track, it is first **photographed** and then **casts** are made using dental cement that is poured into a metal form.
3. Investigators use a high-powered **light** to trace the path to the victim. The light shines at **wavelengths** that cause materials to fluoresce and **orange** goggles help make evidence stand out sharply.
4. Evidence that is collected at a crime scene is sent to the Department of Law Enforcement and is analyzed by a **chemist**, who goes through the debris that is collected at a crime scene.
5. **Carpet** fibers are valuable clues because they can link suspects to a specific location.
6. The tire track expert studies the photographs taken at the crime scene to examine the tread **patterns** to determine what kind of vehicle uses that kind of a tire.
7. Tire treads are made up of geometric shapes called **itches**. The key to tire identification is to match differences in pitches. They also examine tiny cuts on the surface called **sites** that were molded into the tire by small metal teeth.
8. The final pieces of **evidence** investigators needed for an airtight case was obtained by investigators offering a dog washing service. During the bath, investigators gather some dog **hairs** and also get carpet **fibers** from the living room, which matched those found at the crime scenes.
9. Forensic science has become one of the justice system's most powerful **tools**, but can do great harm if they are misused. In one case, hairs from a crime scene lead to the **conviction** of an innocent man.
10. Hairs are not distinct enough to be linked to an **individual**. They most investigators could ever say are that "hairs could have come from the same **source**", but can never say that hairs come from a given individual.
11. To compare hair samples, investigators examine the hair's **color** to see pigment distribution. Investigators also examine the outer sheath, called the **cuticle**, which grows in overlapping scales. Some hairs have a visible inner shaft, called a **medulla**. In other hairs, the medulla appears cracked or **broken** or they have no medulla.
12. Each cell in the body contains **DNA**, which is shaped like a twisted ladder with rungs. The sequence of the **rungs** is unique for each individual. Scientists can remove DNA from body **tissues** and fluids and make it key segments of it visible on x-ray film. The **patterns** produced in the films can positively link a suspect to DNA from a crime scene or exclude a suspect. DNA evidence was able to exclude an ex-boyfriend as well as the suspect, which proved his **innocence**.
13. Forensic scientists and scholars can study a painting to determine if it is **authentic** or a forgery. A forensic scientist can try to determine the painting's age by taking samples of the **paint** and placing them on a microscope slide. Each color is made from a different mineral or vegetable base and gives it a unique appearance under a polarizing light **microscope**.
14. Investigators can also analyze the **medium**, which is a substance that suspends the pigment and allows painters to use it on a canvas. The most common medium is **linseed** oil, but Leonardo da Vinci also used **walnut** oil.
15. Samples of the canvas can be removed for **carbon dating** to reveal the age of the canvas itself.
16. The test results could not rule out the possibility that the painting was created by Leonardo da Vinci, so the painting's owner turned to **scholars** to help him. The scholars noticed the **holes** in Christ's wrist, which DaVinci did in his paintings.