**Evidence Analysis – Testing Procedures/Expert Witness Testimony: Evidence of Your Choice…**

*It’s time to create your FINAL episode of OE CSI! In this episode your team will be analyzing evidence found at the final exam crime scene. You will be processing your choice of: blood (serology or spatter patterns), DNA, metals, liquids (gc analysis), drug, toxicology testing, ballistics, or glass. The purpose of your video is instructional to explain how the test provides a link between the suspect and the crime. Therefore you will have to show that the evidence is either individualized or put into a small class belonging to the suspect (or victim as the case may be) and then matched. You will show all steps to the process and then show/explain how this holds up in a court of law in such a way as the instructional portion of your episode could be used as expert witness testimony. For each type of evidence/testing procedure, refer to the objectives on the back of the rubric to ensure maximum credit! Videos should be 7-10 minutes in length and show full testing procedures, explanation of links between evidence, exemplar evidence and probative value, as well as a conclusion to your case and show a recreation theory including how this particular piece of evidence fits in and helps to solve the crime.*

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| **Category** | **4** | **3** | **2** | **1** | **Points** |
| **Content** | Excellent presentation & inclusion of all facts pertaining to sub-area chosen. Details are accurate and correct | Good presentation & inclusion of facts pertaining to sub-area chosen. Most facts and details are accurate and correct | Missing the overarching point of the subarea. Details are unclear and some facts/details are missing or incorrect | Missing the overarching point of the subarea. Details are unclear and facts are incorrect | \_\_\_\_/45 |
| **Context/Originality** | The context of need for procedure is exceptionally creative and “grabs” audience attention | The context is mostly creative | The context is somewhat creative | The context is not creative at all | \_\_\_\_/15 |
| **Technical Production** | The recording is clear and loud enough to be heard. Background sounds/effects blend with the message | The recording is clear and loud enough to be heard. Background sounds/effects usually blend with the message | Most of the recording is clear and loud enough to be heard. Background sounds/effects sometimes distract from the message | The recording is unclear &/or not loud enough to be heard. Background sounds/effects are absent or distract from the message | \_\_\_\_/10 |
| **Format** | The format for the video was followed in its entirety. The video is 7-10 minutes in length and playable for presentation | N/A | N/A | The format for the video was not followed. The time requirement was not met. | \_\_\_\_/10 |
| **Presentation** | All group members take an active part in the presentation. Voices are clear and projected. All juror questions were answered thoughtfully | Most group members take an active part in the presentation. Voices are clear and projected. Most juror questions were answered thoughtfully | Some group members take an active part in the presentation. Most voices are clear and projected. Some juror questions were answered thoughtfully | One group member took an active part in the presentation or one or more were absent. Voice(s) are clear and projected. Juror questions are not answered. | \_\_\_\_/20 |

**Total points = \_\_\_\_\_\_\_\_/100**

**Blood:**

**Serology**

* + **ABO system of typing**
  + **Mendelian genetics pattern of inheritance explanation**
  + **Show testing of samples**
  + **Explain agglutination and show type based on reaction(s)**
  + **State individual v. class and why**

**Spatter Patterns:**

* **Pick one, determine point of convergence & point of origin**
* **Determine weapon used and handedness of assailant**
* **Explain physics behind determination**
* **Describe pattern and special considerations behind naming the pattern (individual v. class and why)**

**DNA:**

* **Extraction methods**
* **Necessity of PCR**
* **Electrophoresis of DNA and resulting band patterns for matching**
* **Random match probability**
* **What do results mean based on where DNA was found?**

**Liquid Analysis:**

* **Proper machine preparation**
* **Analysis of peak integration**
* **Indications of peak**
* **Single v. multiple peaks**
* **Individual v. class evidence and why**
* **Need for further testing?**

**Metals:**

**Microscopic Examination**

* **What characteristics indicate which metals and why?**

**Chemical Testing**

* **Acid and base testing; full procedures and what is indicated by each**
* **Special safety considerations, generalizations that can be made**
* **Procedures and indications of confirmatory tests**

**Drug/Toxicology Tests:**

* **Stereoscopic observations**
* **Chemical testing – determination of OTC &/or illicit drugs**
* **For toxicology tests – creation of concentration curve to determine concentration in the system and calculations of toxic amount.**
* **Use of characteristic smells/colors to suspect toxins in first place**
* **Individual vs. class characteristics.**
* **Need for further testing?**

**Glass:**

* **Naked Eye & Stereoscopic Observations**
* **Density measurements**
* **Refractive Index determination**
* **Individual v. class characteristics**

**Ballistics:**

* **Trajectory: determination of angle of impact**
* **Calculations to determine height of shooter**
* **GSR to confirm placement of shooter**
* **Matching of bullet to gun and cartridge casings**