

Ernie's Exit

Blood Typing Lab Activity

Name _____

A small pool of blood and a weapon was found near a garbage dumpster. After examining the area, the CSI on the scene discovered a body in the garbage dumpster and identified him as Earnest "One-Eyed" Earl. Earl had a wound to his chest that will be analyzed by the medical examiner.

The CSI tested blood samples from the blood pool and the weapon at the crime scene. It was determined that it was human blood, but he needs to know the blood type to help identify if it was from the victim or the person who murdered him. He has identified three suspects that either knew the victim or were seen in the area before the body was discovered. He would like to question them further while he waits for DNA test results.

Complete the chart using the class notes.

Clumping = + (Positive)

No Clumping = - (Negative)

Type	Reactions w/ Anti-A Serum	Reactions w/ Anti-B Serum
A		
B		
AB		
O		

Rh Serum = Clumping = Rh+ blood

Lab Results - Follow your teacher's directions to complete the lab. Remember to be careful to prevent cross-contamination of the blood samples! Record the results (+ or -) from each group in the trays below.

A	Rh
B	
Suspect #1: Bobby "Baby" Brooks Blood Type: ____	

A	Rh
B	
Suspect #2 "Slim" Jim Snoot Blood Type: ____	

A	Rh
B	
Suspect #3 Barbie "Doll" Jones Blood Type: ____	

A	Rh
B	
Victim Ernest "One-Eyed" Earl Blood Type: ____	

A	Rh
B	
Crime Scene Sample Blood Type: ____	

A	Rh
B	
Weapon Sample Blood Type: ____	

Conclusion

What do your results show?

What should investigators do next?

Materials Needed for 6 Kits:

- | | |
|--|---|
| 2 cups milk | 6 boxes of toothpicks |
| 2 bottles of food coloring – red and green | Vinegar |
| 18 small dropper bottles | 2 cups water (+ additional water for the serum bottles) |
| 18 small cups (Dixie cup size) | 6 small plastic storage containers |
| 6 permanent markers | Labels for bottles and containers |

Preparation:

- 1 – Mix 2 cups of milk with 2 cups of water. Add enough red food coloring to get a bright red color and then add a few drop of green to make it a deeper red color so that it looks more like real blood.
- 2 – Label six dropper bottles to correspond to the three suspects, the victim, the crime scene sample, and the sample from the weapon. You will also want to label each of the six storage containers to correspond to the bottles of fake blood. Fill each bottle with the fake blood mixture. Save the extra “blood” in case a group’s sample gets spilled!
- 3 – Label six dropper bottles with “Anti-A Serum” labels, label six with “Anti-B Serum” labels, and label another six with “Anti-Rh” labels. Use the information in the chart below to fill the bottles with either vinegar or water. You may want to code the bottles in a way that you can tell the contents easily, but won’t be obvious to the students.

Kit	Anti A	Anti B	Anti-Rh	Blood Type
Suspect #1	Vinegar	Water	Vinegar	A+
Suspect #2	Water	Vinegar	Water	B-
Suspect #3	Vinegar	Vinegar	Water	AB-
Victim	Water	Water	Vinegar	O+
Crime Scene	Vinegar	Water	Vinegar	A+
Weapon	Water	Water	Vinegar	O+

- 4 – Create the testing kits by placing the correct bottle of fake blood in each kit along with the correct serums, a permanent marker, 3 small cups, and a box of toothpicks in a small plastic storage container.

Directions:

- 1 – Pass out copies of the student worksheet. Discuss the Crime Summary from the worksheet and go over the directions for the lab.
- 2 – Provide one testing kit for each group of students and have them label the cups in the kit as directed.
NOTE: If you have time, you may want to set up six stations in your classroom and have the groups rotate to the stations to test each blood sample. If you don’t have the time to do this, have each group test one of the samples and share their results with the class.
- 3 – Allow time for the groups to complete the testing of their blood sample as outlined in the directions.
- 4 – Discuss the results for each group and instruct students to complete the chart on their worksheet.
- 5 – Discuss the questions in the conclusion section.

Conclusion:

The students should conclude that the crime scene sample matched suspect #1 (Baby Brooks) and the weapon sample matched the victim (Earl). Answers will vary as to what should be done next in the investigation. Lead the class in a discussion to identify possible scenarios that would lead to the results shown in their blood typing tests. For example, why would Baby Brooks’ blood type match the blood in the puddle at the crime scene instead of matching the victim’s blood?

NOTE: After you are done with the lab, be sure to discard the fake blood mixture and rinse the bottles!