



# 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.

### Suspect #1:

#### Bobby "Baby" Brooks

A	<input type="text"/>	Rh	<input type="text"/>
B	<input type="text"/>		<input type="text"/>
			Type
			<input type="text"/>

### Suspect #2

#### "Slim" Jim Snoot

A	<input type="text"/>	Rh	<input type="text"/>
B	<input type="text"/>		<input type="text"/>
			Type
			<input type="text"/>

### Suspect #3

#### Barbie "Doll" Jones

A	<input type="text"/>	Rh	<input type="text"/>
B	<input type="text"/>		<input type="text"/>
			Type
			<input type="text"/>

A	<input type="text"/>	Rh	<input type="text"/>
B	<input type="text"/>		<input type="text"/>
			Type
			<input type="text"/>

A	<input type="text"/>	Rh	<input type="text"/>
B	<input type="text"/>		<input type="text"/>
			Type
			<input type="text"/>

A	<input type="text"/>	Rh	<input type="text"/>
B	<input type="text"/>		<input type="text"/>
			Type
			<input type="text"/>

#### Victim

#### Ernest "One-Eyed"

#### Crime Scene Sample

#### Weapon Sample

**Conclusion**

What do your results show?

What should investigators do next?

## Teacher Notes:

I used the simulated blood kits from Ward's for this lab. The simulated blood typing kits come with 4 vials of "blood" and three bottles of serum as well as typing trays and toothpicks.

Link: [http://www.wardsci.com/product.asp\\_Q\\_pn\\_E\\_IG0007567\\_A\\_Simulated+ABO+and+Rh+Blood-Typing+Lab+Activity](http://www.wardsci.com/product.asp_Q_pn_E_IG0007567_A_Simulated+ABO+and+Rh+Blood-Typing+Lab+Activity)

## Preparation:

In order to save on supplies, I developed six sets of materials each with only one vial of blood and the three bottles of serum. Each "set" is stored in a small plastic container along with a blood typing tray and toothpicks. If you will have more than 6 groups of students, you may need to create two more sets of kits and adjust the scenarios listed below.

I printed labels for six bottles of sample blood to correspond with each of the suspects and the victim as well as the samples from the crime scene and weapon. Use the scenarios below to set up your kits or come up with your own combinations.

### Blood Vial Labels Scenario 1:

Suspect #1 = Sample A

Suspect #2 = Sample B

Suspect #3 = Sample C

Victim = Sample D

Crime Scene = Sample A

Weapon = Sample D

### Blood Vial Labels Scenario 2:

Suspect #1 = Sample A

Suspect #2 = Sample B

Suspect #3 = Sample C

Victim = Sample D

Crime Scene = Sample D

Weapon = Sample A

## Conclusion:

For Scenario #1, 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 both samples matching the victim?

For Scenario #2, the students should conclude that the crime scene sample matched the victim (Earl) and the weapon sample matched suspect A (Baby Brooks). 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 on the weapon instead of the victim's type?

*Need a cheaper version? Visit the Forensic Science page of my website at <http://sciencespot.net/> for a version using milk, vinegar, and water to simulate blood typing.*