**Activity 2: Blood Typing and Inheritance Station Activities (Honors)**

**(Topic 7: Dominance)**

**Station 1 Directions:**

1. Complete the “Ernie’s Exit Blood Typing” Lab using the following procedure:

 a) Assign each group at the table 2 sets of samples (Suspect 1, 2, 3, etc)

 b) Each group will test their sample and share their results with the table.

 To test the samples:

 1. Pour a small amount of your blood sample into 3 wells.

 2. Test each of the wells with 1 of the antiserums by doing the following:

 a) Using the syringe, pipette 1 ml (cc) of Anti A Serum into well 1. Record results and determine possible genotypes.

 a) Using the syringe, pipette 1 ml (cc) of Anti B Serum into well 2. Record results and determine possible genotypes.

 a) Using the syringe, pipette 1 ml (cc) of Anti Rh Serum into well 3. Record results and determine possible genotypes.

 3. Using everyone’s data, determine who killed Earl.

 4. Rinse the well plates and syringes in the sink, dry them, and place back on your table.

2. Complete the sample practice problems on the back of the data sheet.

**Station 2 Directions:**

1. Working with a partner, complete the “Create a Baby” activity. Follow the instructions on the handouts at the table.

**Station 3 Directions: (Pair/Share)**

1. Divide the four case problem sets among the group (work with partners).

2. Each group will read and analyze a case study, writing your responses on a separate sheet of paper (you may turn in 1 paper per group).

3. Share your results with the other groups and explain how you came to your conclusions. Be prepared to defend your answers with Punnett Squares and ratios.

**Blood Typing Practice**

1. Write the genotype for each person based on the description:
	1. Homozygous for the “B” allele \_\_\_\_\_\_
	2. Heterozygous for the “A” allele \_\_\_\_\_\_
	3. Type O \_\_\_\_\_\_
	4. Type “A” and had a type “O” parent \_\_\_\_\_\_
	5. Type “AB” \_\_\_\_\_\_
	6. Blood can be donated to anybody \_\_\_\_\_\_
	7. Can only get blood from a type “O” donor \_\_\_\_\_\_
2. Pretend that Brad Pitt is homozygous for the type B allele, and Angelina Jolie is type “O.” **What are all the possible blood types of their biological baby?**
3. Draw a Punnett square showing all the possible blood types for the offspring produced by a type “O” mother and an a Type “AB” father
4. Mrs. Clink is type “A” and Mr. Clink is type “O.” They have three children named Matthew, Mark, and Luke. Mark is type “O,” Matthew is type “A,” and Luke is type “AB.” Based on this information:
	1. Mr. Clink must have the genotype \_\_\_\_\_\_
	2. Mrs. Clink must have the genotype \_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_ has blood type \_\_\_\_\_\_
	3. Luke cannot be the child of these parents because neither parent has the allele \_\_\_\_\_.
5. Two parents think their baby was switched at the hospital. Its 1968, so DNA fingerprinting technology does not exist yet. The mother has blood type “O,” the father has blood type “AB,” and the baby has blood type “B.”
	1. Mother’s genotype: \_\_\_\_\_\_\_
	2. Father’s genotype: \_\_\_\_\_\_\_
	3. Baby’s genotype: \_\_\_\_\_\_ or \_\_\_\_\_\_\_\_
	4. Punnett square showing all possible genotypes for children produced by this couple
	5. Was the baby switched?