

Name: _____

Date: _____

Period: _____

Paternity Through Blood Types

Week # _____

Blood typing can be used to help determine paternity, or the father of a baby. In this activity, Possible Father #1, the presumed father of Baby Andrea, is questioning his paternity. June, his wife, assures him that he is the father, but he doesn't think the baby looks like him at all. In fact, he is certain that the baby looks a lot like someone else, Possible Father #2. He has requested that all four of them take a blood test to determine the real father of Baby Andrea.

Procedure

1. Place one drop of June's blood on the left side and right side of the testing plate.
2. Place one drop of A indicator on the left blood sample.
3. Place one drop of B indicator on the right blood sample.
4. Carefully swirl the testing plate to mix the blood with the indicator solutions.
5. Record "clumps" or "no clumps" in the column labeled Indicator Results.
6. Use Figure 1 to determine the phenotype of the individual.
7. Based on the phenotype, determine possible genotype(s) for the individual.
8. Repeat steps 1 – 7 for the remaining three individuals.

Indicator A	Indicator B	Phenotype (Blood Type)
Clumps	Clumps	AB
No clumps	No clumps	O
Clumps	No clumps	B
No clumps	Clumps	A

Figure 1

Results

Name	Indicator Results		Phenotype (Blood Type)	Genotype(s)
	A	B		
June				
Baby Andrea				
Possible Father #1				
Possible Father #2				

Analysis

1. What is Baby Andrea's genotype? _____
2. What allele did Baby Andrea receive from her mother? _____
3. What allele did Baby Andrea receive from her father? _____
4. Who is the father of Baby Andrea? _____ Show Punnett squares for both possible fathers.

Name: _____

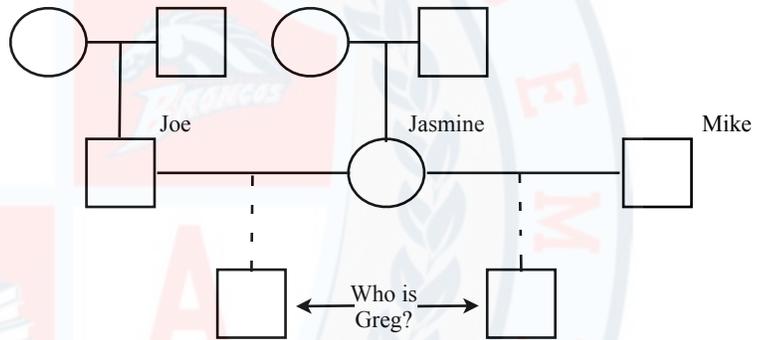
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Directions: Write a letter in the MEL-Con format to June's husband, Possible Father #1, as the lab technician who conducted the blood tests. You should respond to his question, "Am I the father of Baby Andrea?" using your results from the tests as evidence, and explanation of alleles, genotypes, and phenotypes in your Link.

Dear Possible Father #1,

As an experienced blood typing technician, Joe approaches you in another paternity case. Joe is unsure if he is the father of Greg, or if his ex-best friend, Mike, is the father. Joe gives you a **pedigree**, or a chart that shows inheritance of a particular trait, to help you determine paternity. Horizontal lines in a pedigree represent parenthood, while vertical lines connect parents to children.



1. What do squares represent in the pedigree? _____ circles? _____
2. Joe's parents, Mary and Will both have AB blood. Joe has B blood.
 - a. Show this Punnett square.

b. Label the pedigree with all names and genotypes

3. Jasmine's mom, Eve, has type O blood and Jasmine has type A blood.
 - a. Show this Punnett square.

b. Label the pedigree with all names and genotypes

4. Greg has type A blood. Is Joe the father?
