

## **Inheritance Of Blood Types Worksheet**

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Disclaimer: The inheritance of blood types worksheet was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

## Part 1: Building a Foundation

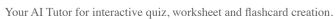
What antigens are present on the red blood cells of a person with blood type A?					
Hint: Consider the antigens associated with blood type A.					
<ul><li>○ A antigen</li><li>○ B antigen</li><li>○ Both A and B antigens</li><li>○ No antigens</li></ul>					
What antigens are present on the red blood cells of a person with blood type A?					
Hint: Consider the antigens associated with each blood type.					
<ul><li>A antigen</li><li>B antigen</li><li>Both A and B antigens</li><li>No antigens</li></ul>					
Which of the following statements about the Rh factor are true?					
Hint: Think about the definitions of Rh-positive and Rh-negative.					
<ul> <li>□ Rh-positive individuals have the Rh antigen.</li> <li>□ Rh-negative individuals have the Rh antigen.</li> <li>□ Rh-negative individuals do not have the Rh antigen.</li> <li>□ Rh-positive individuals do not have the Rh antigen.</li> </ul>					
Which of the following statements about the Rh factor are true?					
Hint: Think about the definitions of Rh-positive and Rh-negative.					
Rh-positive individuals have the Rh antigen.					



<ul> <li>Rh-negative individuals have the Rh antigen.</li> <li>Rh-negative individuals do not have the Rh antigen.</li> <li>Rh-positive individuals do not have the Rh antigen.</li> </ul>
Explain the difference between genotype and phenotype in the context of blood types.
Hint: Consider how genetic makeup differs from observable traits.
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Hint: Consider how genetic makeup differs from observable traits.
List the possible genotypes for each of the following blood types:
Hint: Think about the combinations of alleles that can produce each blood type.
1. Blood Type A
2. Blood Type B
3. Blood Type O



If a person has a genotype of AO, what is their blood type?
Hint: Consider the dominant and recessively inherited traits.
○ Type A
○ Type B
○ Type AB
○ Type O
If a person has a genotype of AO, what is their blood type?
Hint: Consider the dominant and recessiveness of alleles.
○ Type A
○ Type B
○ Type AB
○ Type O
Part 2: Application and Analysis
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A mother with blood type AB and a father with blood type O have a child. What are the possible blood types of the child?
blood types of the child?
blood types of the child?  Hint: Consider the combinations of alleles from each parent.
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Hint: Draw a Punnett square to visualize the combinations.	
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Using a Punnett square, predict the possible blood types of offspring from a type A (AO) mother a type B (BO) father.	nd
Hint: Draw a Punnett square to visualize the combinations.	
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Which of the following scenarios can result in a child with blood type AB?	
Hint: Think about the combinations of parental blood types.	
○ Type A mother and type O father	
Type AB mother and type B father	
O Type O mother and type O father	
○ Type B mother and type O father	
Which of the following scenarios can result in a child with blood type AB?	
Hint: Consider the combinations of parental blood types.	
○ Type A mother and type O father	
○ Type AB mother and type B father	
○ Type O mother and type O father	
○ Type B mother and type O father	



Analyze the following genotypes and determine which can result in a blood type B phenotype.
Hint: Consider the combinations of alleles that produce blood type B.
BB
□ BO □ AB
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Analyze the following genotypes and determine which can result in a blood type B phenotype.
Hint: Consider the combinations of alleles that lead to blood type B.
BB
□ BO □ AB
00
Explain how a child with blood type O can be born to parents with blood types A and B. Include a discussion of possible genotypes.
Hint: Consider the recessiveness of blood type O.
Explain how a child with blood type O can be born to parents with blood types A and B. Include a discussion of possible genotypes.
Hint: Consider the recessiveness of the O allele.



## Part 3: Evaluation and Creation

Consider a scenario where a couple is planning to have children. The mother is type A (AO) and the father is type B (BO). Evaluate the potential challenges they might face regarding blood type compatibility in future pregnancies.
Hint: Think about the risks associated with different blood types.
Risk of Rh incompatibility
Risk of ABO incompatibility
☐ No risk of blood type incompatibility
□ Need for genetic counseling
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Create a real-world scenario where understanding blood type inheritance is crucial. Discuss the implications and how knowledge of genetics can help in decision-making.
Hint: Consider situations like organ donation or family planning.

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