

Bio 16.1

Goals: Investigate blood typing and identification based on genotype

Plan: Simulated Blood typing lab (see lab worksheet)

Simulated Blood Typing Lab

*Note: This lab DOES NOT use real blood but chemicals that mimic the effects of blood and their antibodies. Use care to not get chemicals on your skin but all chemicals are safe with none of the hazards associated with real blood.

Methods:

- 1) You have samples of blood from four patients. Use the anti-serums to determine the presence of A, B and Rh (having Rh makes your blood “positive”). Using the test materials for each, determine each patient’s blood type. (one drop of blood or chemical is sufficient for each test)

Patient #	Presence of A?	Presence of B?	Presence of Rh?	Blood type
Example	Yes	No	Yes	A+
1				
2				
3				
4				

- 2) If your sample shows coagulation (clumping), use the colored picks and prepare a microscope slide with some of your sample. View and sketch what you see under a microscope. If every one of the samples looks similar, only sketch one. If different, label the patient and blood type test.

		Donor's blood type							
		O-	O+	B-	B+	A-	A+	AB-	AB+
Recipient's blood type	AB+	✓	✓	✓	✓	✓	✓	✓	✓
	AB-	✓		✓		✓		✓	
	A+	✓	✓			✓	✓		
	A-	✓				✓			
	B+	✓	✓	✓	✓				
	B-	✓		✓					
	O+	✓	✓						
	O-	✓							

- 3) Imagine the blood from the four patients is all we had. One of these patients needs a blood donation from someone else's blood. Determine which of the other three could donate to each patient (use the table above). Are any patients out of luck?

Patient _____ Type _____ Can get blood from: _____

1

2

3

4

4) Are there any visible differences in the blood types before you do any tests on them? Use a microscope to see if there are any differences and describe/sketch them below.

5) Mix a drop from two compatible blood types and run the same tests on this blood mixture. Describe your methods and which samples you used and record your results.

Bio 16.2

Goals: Understand breeding and how certain traits can be expressed among breeding pairs

Plan:

Video: Adam Ruins Everything: Dog Breeding

Discussion: Why wouldn't these dog traits work in the wild? What kind of dog would be most successful if it wasn't domesticated?

Discussion: How can cross breeding lead to a healthier population?

HW: Reading on breeding and traits.

Bio 16.3

Plan: Guinea Pig Breeding in-class activity (whole class period)

HW: finish activity/reflection