

Sec: _____ Name: _____

Experiment: Blood Composition & Determining
Your Blood Type (B. Science 10-37-2c)

Purpose: To observe the composition of blood
and to review blood type determination.

Materials: microscope slide with prepared blood

Methods:

Part A: Looking At Blood Cells

1. Examine a stained human blood smear on high power of your microscope. Select an area near the end of the smear where the cells are separated and can be seen clearly. What color are the red blood cells?
2. Why do they appear a lighter color near the center?
- 3a. What pigment is in living red blood cells? 3b. What is its function?
- 4a. Locate and examine several cells that you recognize as being quite different from the red blood cells. What are these cells? 4b. Compare their size to a red blood cell.
5. What is another obvious difference that you observe inside the cell?
6. What is the function of the white blood cells?
7. From studying your slide, what can you say about the number of white blood cells compared to the number of red blood cells?
8. Look closely at spaces between the red and white blood cells for clumps of tiny cells. These are platelets. What is their function?
9. In the space provided, draw the different types of blood cells you see under high power of your microscope. Label them and record the magnification.

Part B: Review of Blood Types

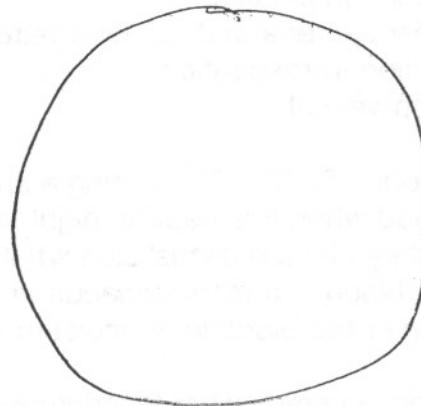
1. Serum A has antibody B material in it to destroy any B type blood. So if no clumping occurs in serum A the blood was type A, if clotting occurred in serum A then your blood had B type blood in it. A visa versa relationship exists for Serum B. Remember blood types can be A, B, or a combination of the two (AB), or no blood type (O).
2. For each of the given conditions listed in results, record the type of blood it is.

Results:

Part A: Looking At Blood Cells

1. color: _____
2. lighter: _____
- 3a. pigment: _____
- 3b. function: _____
- 4a. what cells: _____
- 4b. compare size: _____
5. difference: _____
6. function: _____
7. number of WBC is: _____
8. function: _____

9.



_____x

Part B: Review of Blood Types

2. If your blood clotted in serum A you are type _____.
 If your blood clotted in serum B you are type _____.
 If your blood clotted in serum A and B you are type _____.
 If your blood did not clot in either serum you are type _____.

Conclusions:

In 1900 Karl Landsteiner discovered the ABO blood group, which has four blood types: A, B, AB, and O. When the blood type of a donor and a recipient matched, the transfusion was almost always successful. Use the following table showing successful and unsuccessful blood transfusions to answer the following questions.

Blood type of Donor	Blood type of recipient				
	A	B	AB	O	
A	y	n	y	n	y = successful transfusion n = unsuccessful transfusion
B	n	y	y	n	
AB	n	n	y	n	
O	y	y	y	y	

- If you were of blood type B which type(s) of blood would you be able to receive?
- If you were of blood type AB which type(s) of blood would you be able to receive?
- If you were of blood type O which type(s) of blood would you be able to receive?
- One blood type is sometimes referred to as the "universal donor." Which blood type is it and why?
- Another blood type is known as the "universal recipient." Which blood type is it and why?
- In a transfusion involving the A and O blood types, does it make a difference which blood type belongs to the recipient and which to the donor?

Discussion:

- Why should a type A person not receive blood from a type B person?
- Place the letter of the word in the top row before the statement to which it applies. You may use a word more than once.

a. capillaries	b. platelets	c. red blood cells	d. white blood cells
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_____ blood cells containing nuclei
 _____ disc shaped blood cells containing hemoglobin
 _____ very small parts of blood cells
 _____ function in clotting
 _____ ingest bacteria and foreign matter
 _____ function in respiration
 _____ blood vessel
- 3a. Read John 19: 32 - 37. During a crucifixion what do they do with the legs of those being crucified when it is nearing night time (vs. 32)
- 3b. When they pierced Jesus' side what two components flowed out (vs. 33 - 34)?
- 3c. Healthy blood is a homogeneous mixture of blood cells and plasma. What does the condition of the blood in 3b indicate about Jesus at this point?
- 3d. From these versus what 2 scriptures were fulfilled about Jesus' death (vs. 35-37)?