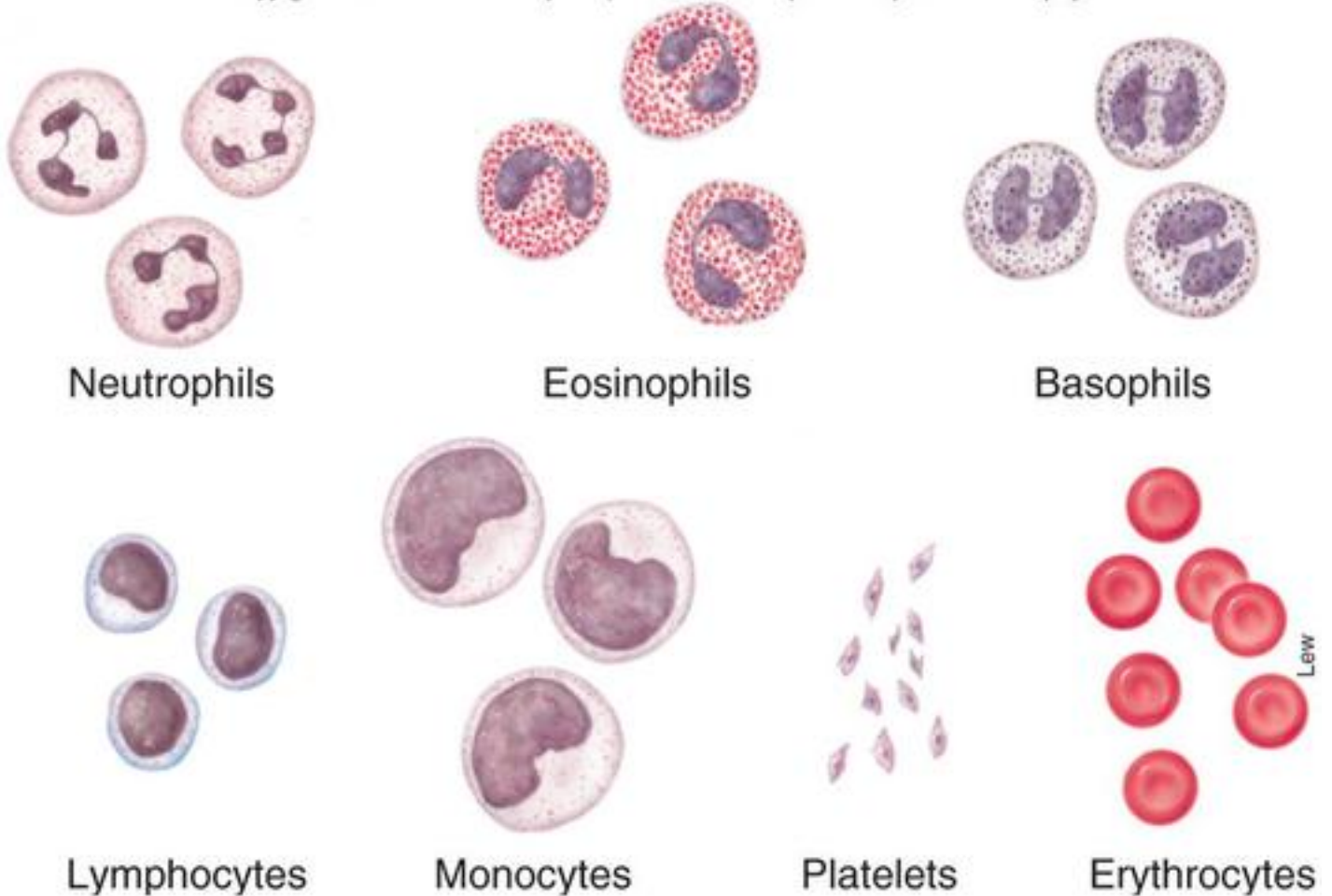


Blood Typing Scenario:
Using Argumentative Claims in Science
DO NOT WRITE ON THIS SHEET

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DIRECTIONS—Listen to the story your teacher tells you and follow their instructions. Basically, one donor wants to donate any blood to any other person. Another donor in your group wants to donate according to a certain set of rules, that you learned in class. Copy and answer the questions below and copy the table on the back into your lab notebook, where you will do all your writing.

1. Define in your own words what the term “**Reasoning From Evidence in Science**” means...
2. What are the two proteins on the surface of red blood cells?
3. What are the three letters representing the presence or absence of these two proteins?
4. What are the 4 blood types from these two proteins (***phenotypes***)?
5. Create a Blood Donor-Blood Receiver data table showing all 16 possible combinations of the 4 blood types and have your instructor approve it before beginning the lab.
6. BONUS; What are the 6 ***genotypes*** resulting in these 4 phenotypes (from Ch. 5, in your notes, using the letter symbols “I” and “i”)?

YOUR TEAM'S PROBLEM STATEMENT (WE DON'T KNOW WHAT WILL HAPPEN IF...);

YOUR TEAM'S RESEARCH QUESTION (WE WONDER IF...);

YOUR TEAM'S TENTATIVE ARGUMENTATIVE CLAIM (HYPOTHESIS);

***YOUR PERSONAL INDIVIDUAL EVIDENCE FROM
EXPERIMENTATION;***

***YOUR OWN JUSTIFICATION OF THE
EVIDENCE (HOW DO YOU PERSONALLY KNOW
IT TO BE TRUE);***

***NOTES FROM ROUND-ROBIN ARGUMENTATION
SESSION WITH YOUR TEAM OF FOUR BEFORE
THE LAB;***

***NOTES FROM REFLECTIVE DISCUSSION
WITH YOUR TEAM AFTER THE LAB;***

***FINAL WRITTEN ARGUMENT JUSTIFYING OR REJECTING YOUR ORIGINAL CLAIM (HYPOTHESIS) ABOVE
(PARAGRAPH);***

Blood Exchange Post-Lab Questions (Homework)

Review of Ch. 5:

- a. There are two blood type proteins; “A” and “B”.
- b. There are 4 blood type phenotypes (proteins), A, B, AB, and O.
- c. There is one gene and two alleles, I and i, that code for these blood type proteins.
- d. I is dominant over i, which is recessive.
- e. There are six possible genotypes;
 - a. A person with Blood type “A” phenotype will be either $I^A I^A$ or $I^A i$ genotype
 - b. A person with Blood type “B” phenotype will be either $I^B I^B$ or $I^B i$ genotype
 - c. A person with Blood type “AB” will be $I^A I^B$ genotype
 - d. A person with Blood type “O” will be ii genotype

Blood Exchange Post-lab Questions

A; **Example;**

1. A student is blood type “O”. The student’s parents have blood types “A” and “B”. How could this be?
2. One parent is $I^A i$ or blood type “A” (heterozygous)
3. The other parent is $I^B i$ or blood type “B” (Heterozygous)
4. So... the cross would be $I^A i \times I^B i$
5. Do a Punnet square showing the possible blood types of the children;
 - a. $I^A I^B$ (“AB”) ii (“O”), $I^A i$ (“A”), $I^B i$ (“B”)

B; **Problems** (Complete in your lab notebook)

1. A Donor of type “A” is heterozygous. They are asked by a person who knows nothing about blood typing to donate to a homozygous type “A” person. Explain to them whether they can or can’t and why.
2. Which blood types can donate to who?

Donor blood types

A

B

AB

O

Who can receive?

3. Which blood type would you like to be and why?
4. What blood type is most common (from text)?
5. What blood type would a paramedic most likely carry?
6. What blood type would a transfusion recipient most likely want to be?
7. Which blood type can’t be homozygous?
8. Which three blood types can be/are heterozygous?
9. A man homozygous for type “A” marries and has kids with a woman heterozygous for type “B”. Show your Punnet square work determining the possible blood types of their kids.
10. What are some of the other ways we classify blood that we discussed in class?