Name: _____   **Date:** _____
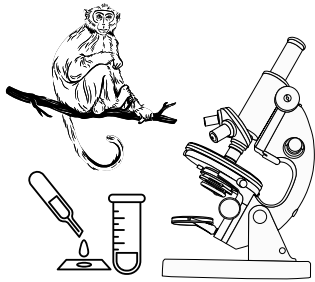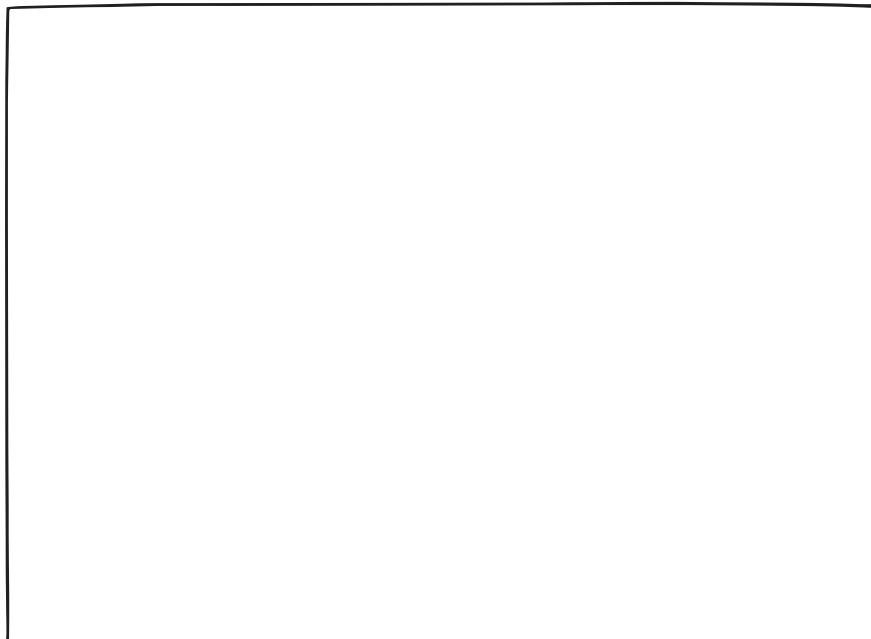
Blood Smear Model Worksheet

First, let's capture an image
of your blood smear

Label the different components of blood to create a key
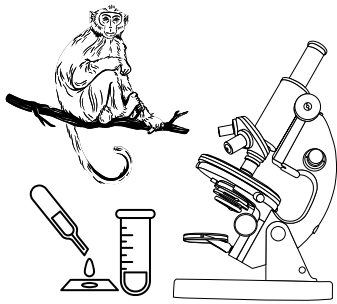for your blood smear model.

Symbol	Name
Example: ◯	*Monocyte*

Draw your blood smear model below using the key you
created in the box above.

Blood Smear Model Worksheet

Next, let's record data.

Directions: Use your blood smear image to complete the chart below and create your own blood count.

Blood is made up of four different components: Plasma, Erythrocytes (or red blood cells), Platelets, and Leukocytes (or white blood cells). There are are five different types of leukocytes: Neutrophils, Lymphocytes, Monocytes, Eosinophils, and Basophils.

A **blood count** is a test that counts the cells that make up your blood. There are different kinds of blood counts used for counting different cells, and they all give valuable insight to our health! They can reveal allergic reactions, parasites, disorders, and much more. Using your blood smear image, you are going to conduct your own blood count.

Blood Smear Model Cell Count

	Model	Percent	Low/High /Normal	Normal (Humans)
Erythrocytes		/total cells = ____%		42%
Platelets		/total cells = ____%		3%
Leukocytes		/total cells = ____%		1%
Total # Cells				
Neutrophil		/total WBC's = ____%		40-60%
Lymphocyte		/total WBC's = ____%		20-40%
Monocyte		/total WBC's = ____%		2-8%
Eosinophil		/total WBC's = ____%		1-4%
Basophil		/total WBC's = ____%		<1%
Total white blood cells (WBC's)				
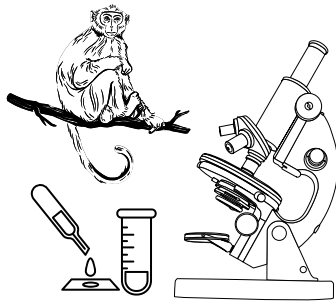
Blood Smear Model Worksheet

Now, let's analyze your blood smear.

Short Answer Questions:

Directions: Use your data to answer the following questions in 2-5 sentences
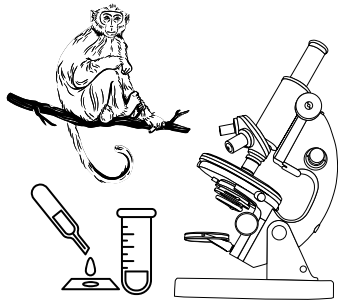
1. What can you infer about your percentages of platelets, erythrocytes, and leukocytes? *I.e. Did they fall within the normal range for humans? What do you think your data means?*

2. Compare and contrast your calculations for each white blood cell. What can you infer about your data? *I.e. Are any white blood cells above or below their corresponding normal range in humans? What does this mean?*

3. Do you think your monkey is healthy or sick? Why or or why not?

Use this chart to record your data from the Monkey Health Explorer blood smear images

	A	B	C	D	E	F	Total	Percent	Low/High/ Normal	Normal (Humans)
Neutrophil								/total WBC's = ___%		40-60%
Lymphocyte								/total WBC's = ___%		20-40%
Monocyte								/total WBC's = ___%		2-8%
Eosinophil								/total WBC's = ___%		1-4%
Basophil								/total WBC's = ___%		<1%
						Total WBC's				

Blood Smear Model Worksheet

Now, let's analyze your recordings

Short Answer Questions:

Directions: Use your data to answer the following questions in 2-5 sentences

1. If images A-D were taken from the same monkey, what can you hypothesize about the health of this monkey? Compare and contrast your percentage calculations for each white blood cell to answer this question. *Hint: Are any white blood cells above or below their corresponding normal range in humans? What do you think this reveals about the monkey's health?*

2. In additional to a blood count, is there additional data about the monkeys that would be interesting to record? *Hint: Some interesting data could include, but are not limited to, any environmental stressors, diet, age, etc..*