Procedure 2 Performing a Differential White Blood Cell Count

One of the most common blood analyses performed by a laboratory is a *differential white blood cell count.* In this procedure, the number and types of leukocytes in a blood sample are counted to determine the relative frequency of each type. This can give important information about the cause of a patient's illness, because different conditions will cause an elevation of different types of leukocytes. Differential counts were previously performed manually by a laboratory technician, as you will do here. Now, however, they are generally done by a machine, but the technician will still manually examine the cells if any abnormalities are noted.

1. Obtain a blood smear slide, and scan it on low power to find an area where the cells appear to be evenly distributed.
2. Advance the microscope objective to a power high enough for you to distinguish between the different types of leukocytes. For some microscopes, medium power will suffice, and for others, high power or even oil immersion might be necessary.
3. Scan the slide for leukocytes, and create a running tally of the number of each type you find below. Do this until you have counted 100 total leukocytes.

Neutrophils	*Eosinophils*	*Basophils*	*Lymphocytes*	*Monocytes*

4. Total the number of each leukocyte you counted, and record these data in Table 20.2. Refer to Table 20.1 in the Pre-Lab Exercises (p. 532) or Exercise 20-1 for the predicted percentage of each type of leukocyte in the blood. How do the totals you found compare with the predicted percentages?

TABLE **20.2** Differential White Blood Cell Totals

Leukocyte	Number Counted	Percentage (of 100)	Predicted Percentage
Neutrophils			
Eosinophils			
Basophils			
Lymphocytes			
Monocytes			