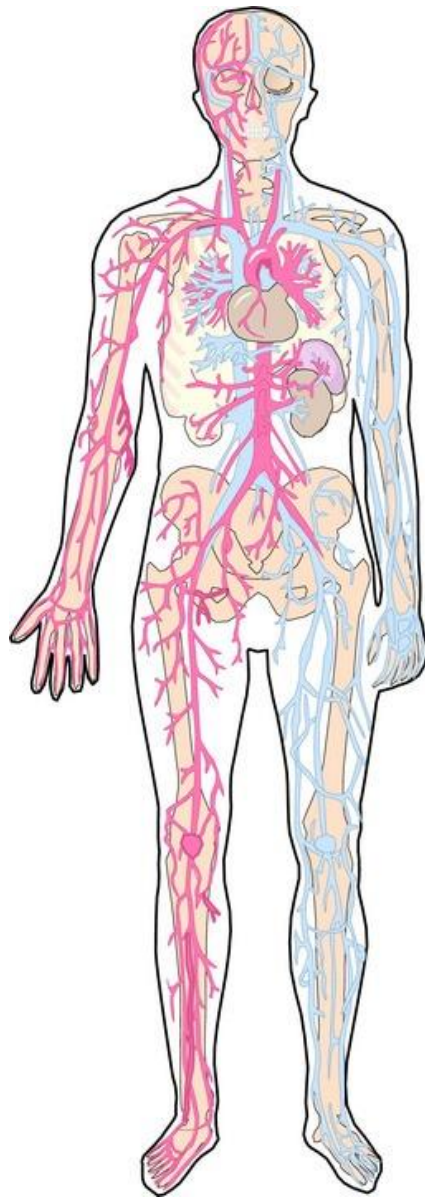


# Circulatory System Lapbook



Written & Designed  
by  
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Circulatory System Lapbook  
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ISBN #

Ebook: 978-1-61625-534-3

CD: 978-1-61625-532-9

Printed: 978-1-61625-533-6

Assembled: 978-1-61625-535-0



Publisher: Knowledge Box Central  
<http://www.knowledgeboxcentral.com>

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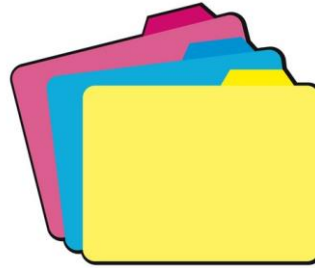
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Special thanks to Carrie Martin-Vegue. She is the author of the Study Guide that is included in this product. The Study Guide is being used with her permission and is now owned by Knowledge Box Central.

# How do I get started?

First, you will want to gather your supplies.



## \*\*\* Assembly:

**\*Folders:** We use colored file folders, which can be found at Walmart, Sam's, Office Depot, Costco, etc. You will need between 1 and 4 file folders, depending on which product you have purchased. You may use manila folders if you prefer, but we have found that children respond better with the brightly colored folders. Don't worry about the tabs...they aren't important. Within this product, you will be given easy, step-by-step instructions for how to fold and assemble these folders. *If you prefer, you can purchase the assembled lapbook bases from our website.*

**\*Glue:** For the folder assembly, we use hot glue. For booklet assembly, we use glue sticks and sometimes hot glue, depending on the specific booklet. We have found that bottle glue stays wet for too long, so it's not a great choice for lapbooking. For gluing the folders together, we suggest using hot glue, but **ONLY** with adult supervision. These things get **SUPER** hot, and can cause **SEVERE** burns within seconds.



**\*Other Supplies:** Of course, you will need scissors. Many booklets require additional supplies. Some of these include metal brad fasteners, paper clips, ribbon, yarn, staples, hole puncher, etc.



You may want to add decorations of your own, including stickers, buttons, coloring pages, cut-out clipart, etc. Sometimes, we even use scrapbooking supplies. The most important thing is to use your imagination! Make it your own!!



## **Ok. I've gathered the supplies. Now how do I use this product?**

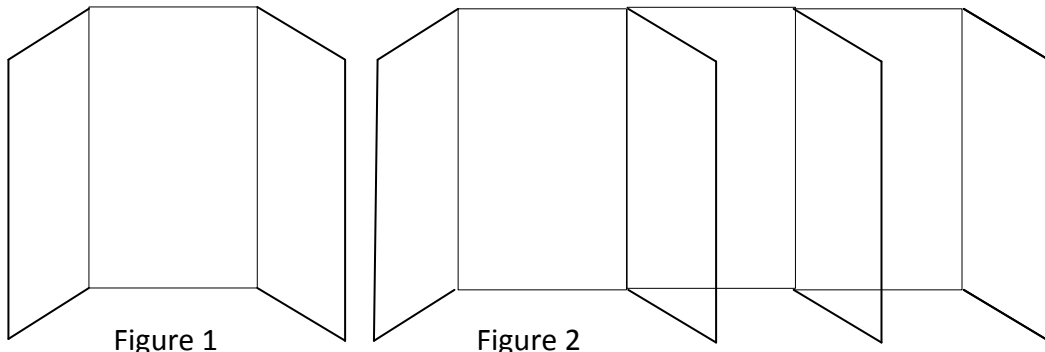
Inside, you will find several sections. They are as follows:

- 1. Layout and Pictures:** This section gives instructions and diagrams that will tell the student exactly how to assemble the lapbook base and where to glue each booklet into the base. Depending on the student's age, he or she may need assistance with this process, especially if you choose to allow the student to use hot glue.
- 2. Student Instruction Guide:** This section is written directly to the student, in language that he or she can understand. However, depending on the age of the child, there may be some parent/teacher assistance needed. This section will also tell the student exactly what should be written inside each booklet as he or she comes to it during the study, as well as telling the student which folder each booklet will be glued into.
- 3. Booklet Templates:** This section includes ALL of the templates for the booklets. These have been printed on colors that will help to improve retention of the information presented, according to scientific research on color psychology.
- 4. Teacher's/Study Guide:** This section includes a Study Guide that can be used to teach this subject. It includes all information for completing the booklets in this lapbook.

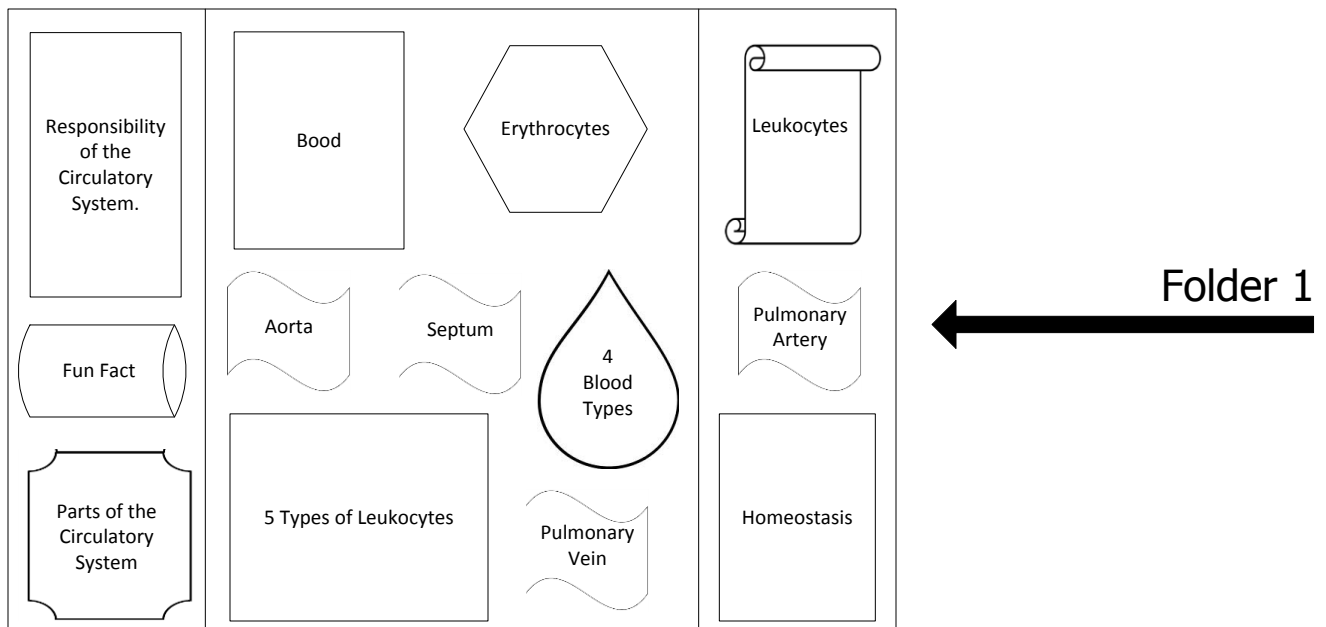
# Circulatory System Lapbook

## Layout & Pictures

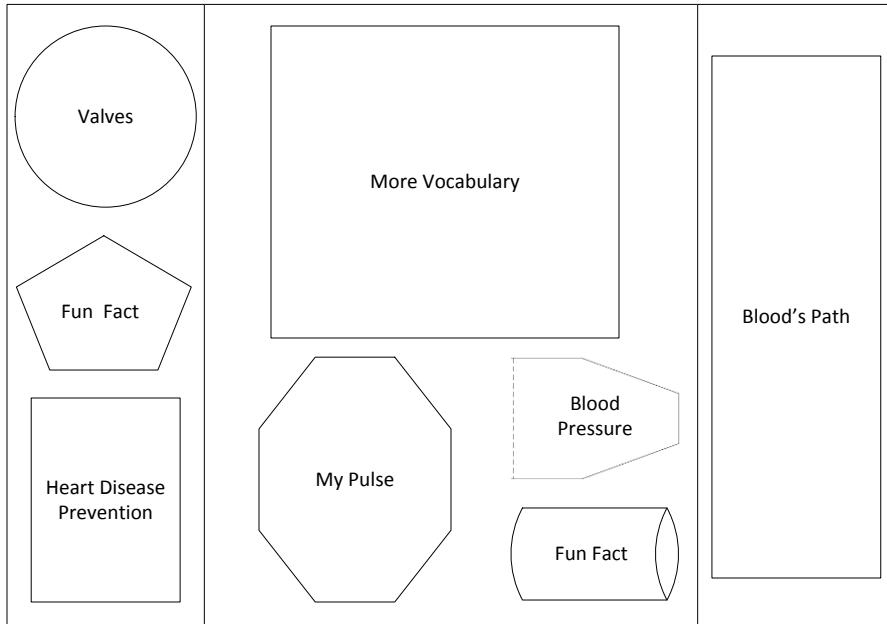
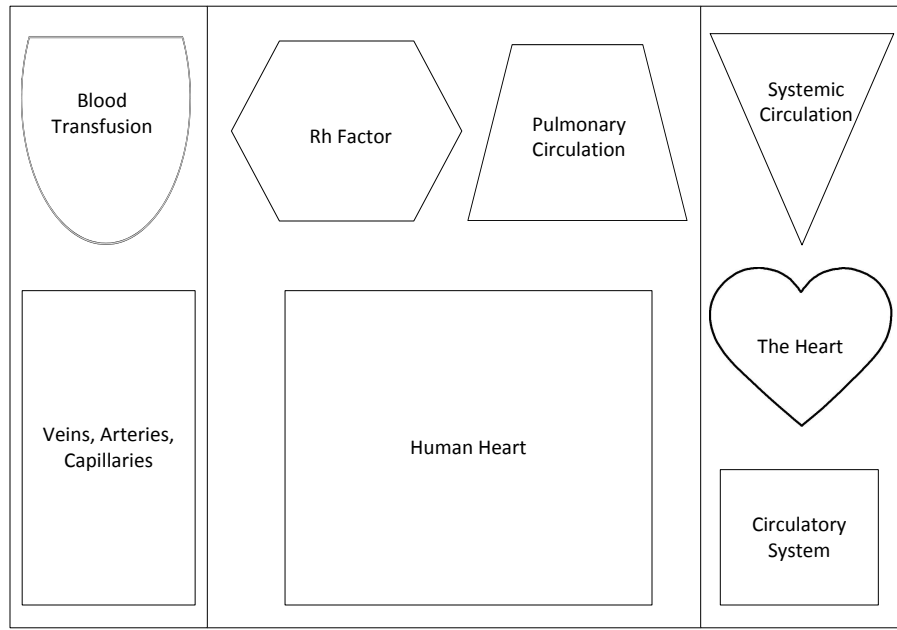
You will need 3 folders of any color. For each folder, you will fold both sides toward the original middle fold and make firm creases on these folds (Figure 1). Then glue the folders together along one flap (Figure 2).



This is the "Layout" for your lapbook. The shapes are not exact on the layout, but you will get the idea of where each booklet should go inside your lapbook.



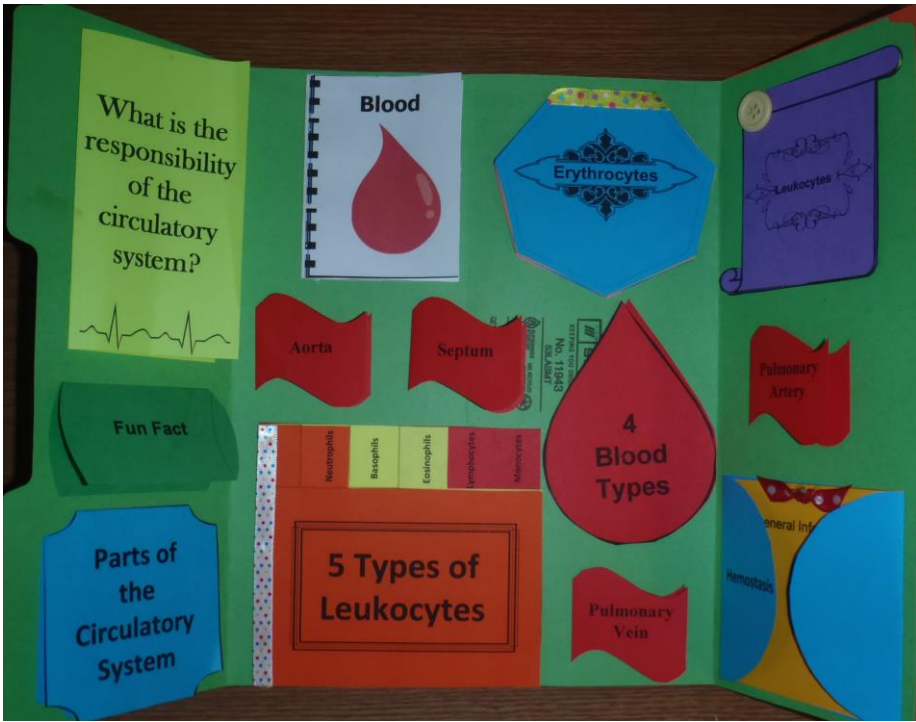
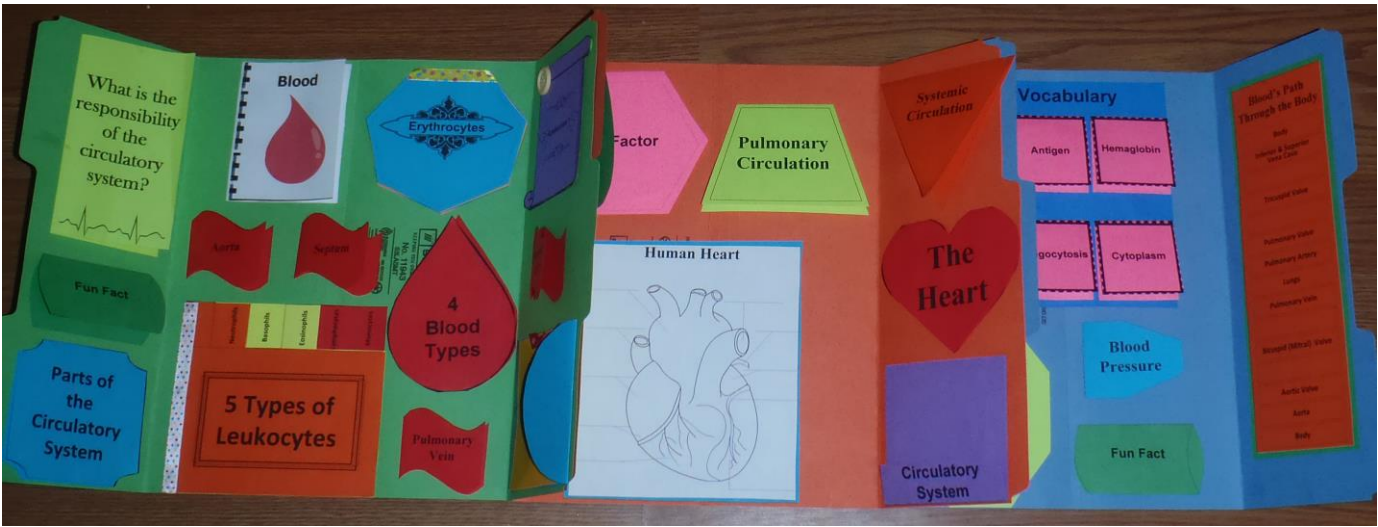
Folder 2



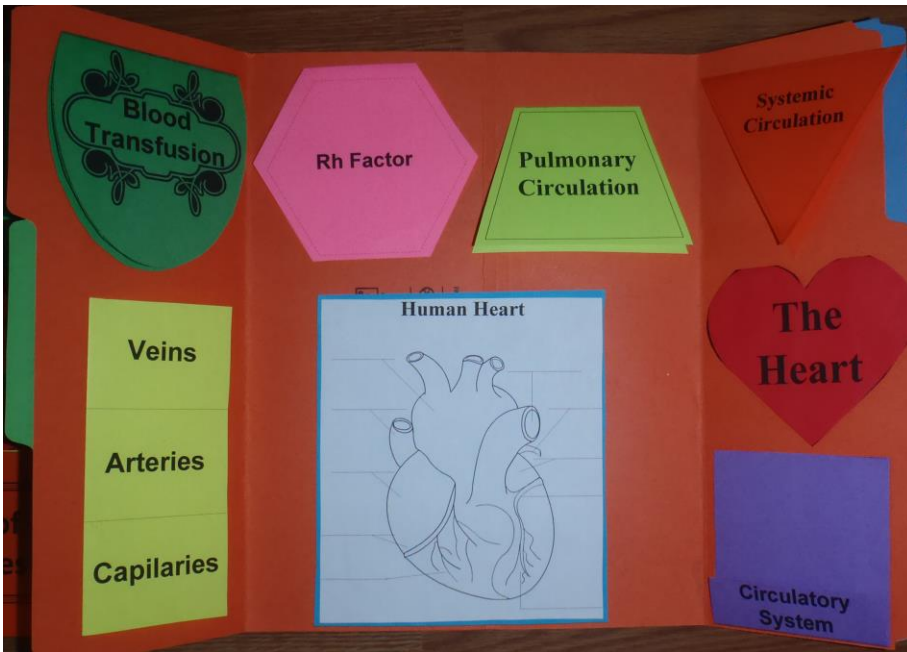
Folder 3



Below is a picture of a completed lapbook!!! This should help in figuring out how to assemble the booklets and then how to put them all together!



← Folder 1



Folder 2



Folder 3





# Circulatory System Lapbook

## Student Instruction Guide

### **Booklet 1: Responsibility of the Circulatory System**

**Assembly Instructions:** Cut out along the outer black line edges of the booklet. Fold along the center line so that the title is on the front.

**Completion Instructions:** In this booklet, explain the responsibility of the circulatory system. It is very important!

### **Booklet 2: Parts of the Circulatory System**

**Assembly Instructions:** Cut out along the outer black line edges of the booklet. Fold along the center line so that the title is on the front.

**Completion Instructions:** Can you name the parts of the circulatory system? Write them inside this booklet.

### **Booklet 3: Blood**

**Assembly Instructions:** Cut out along the outer black line edges of the booklet and the 3 additional pages. Fold the booklet along the center line so that the title is on the front. Place the 3 additional pages inside, and secure with staples along the left side.

**Completion Instructions:** Blood has many different components. Tell about them here.

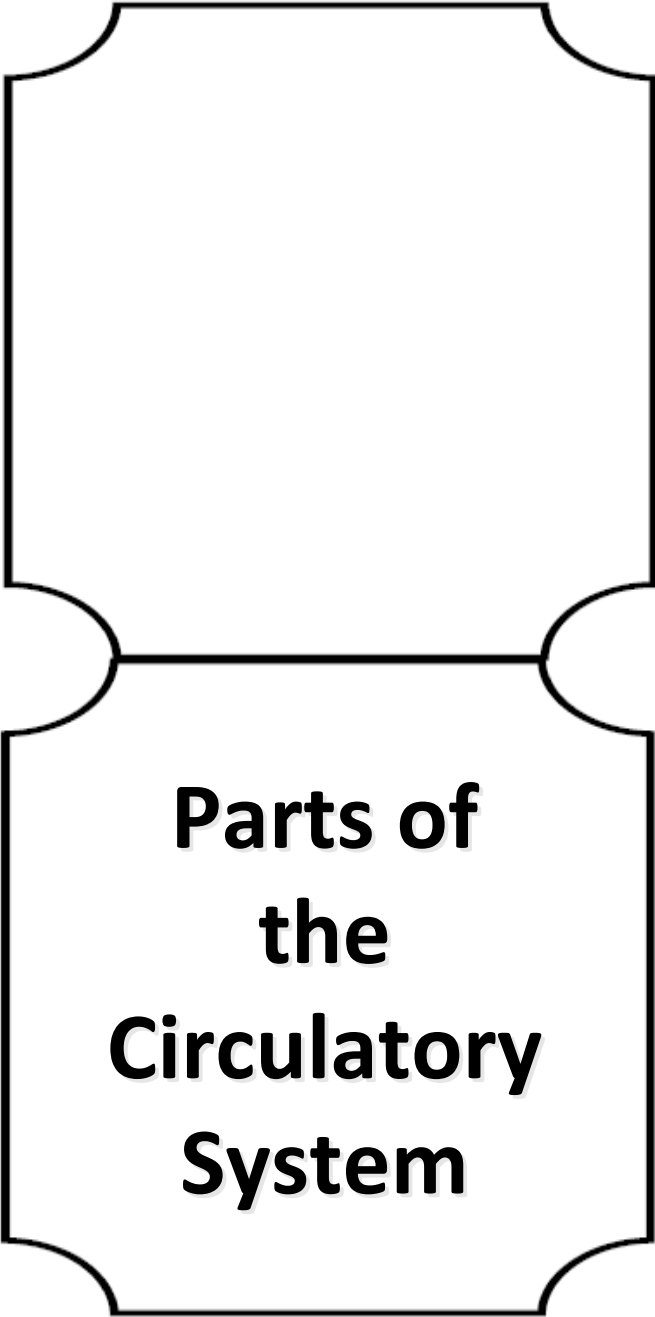
### **Booklet 4: Erythrocytes**

**Assembly Instructions:** Cut out along the outer black line edges of the booklet and the additional pages. Fold the booklet along the center line so that the title is on the front. Place the additional pages inside, and secure with staples along the top.

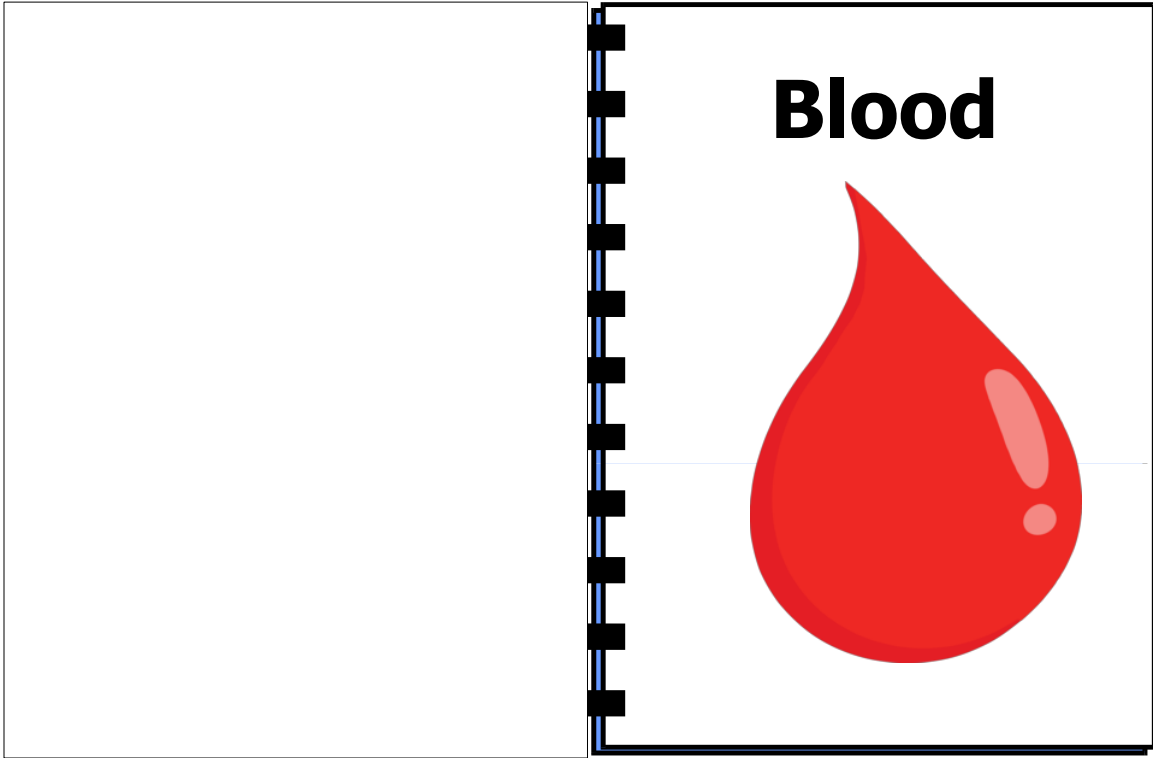
**Completion Instructions:** One of the types of cells found in the blood is erythrocytes. Tell about them here.

What is the  
responsibility  
of the  
circulatory  
system?





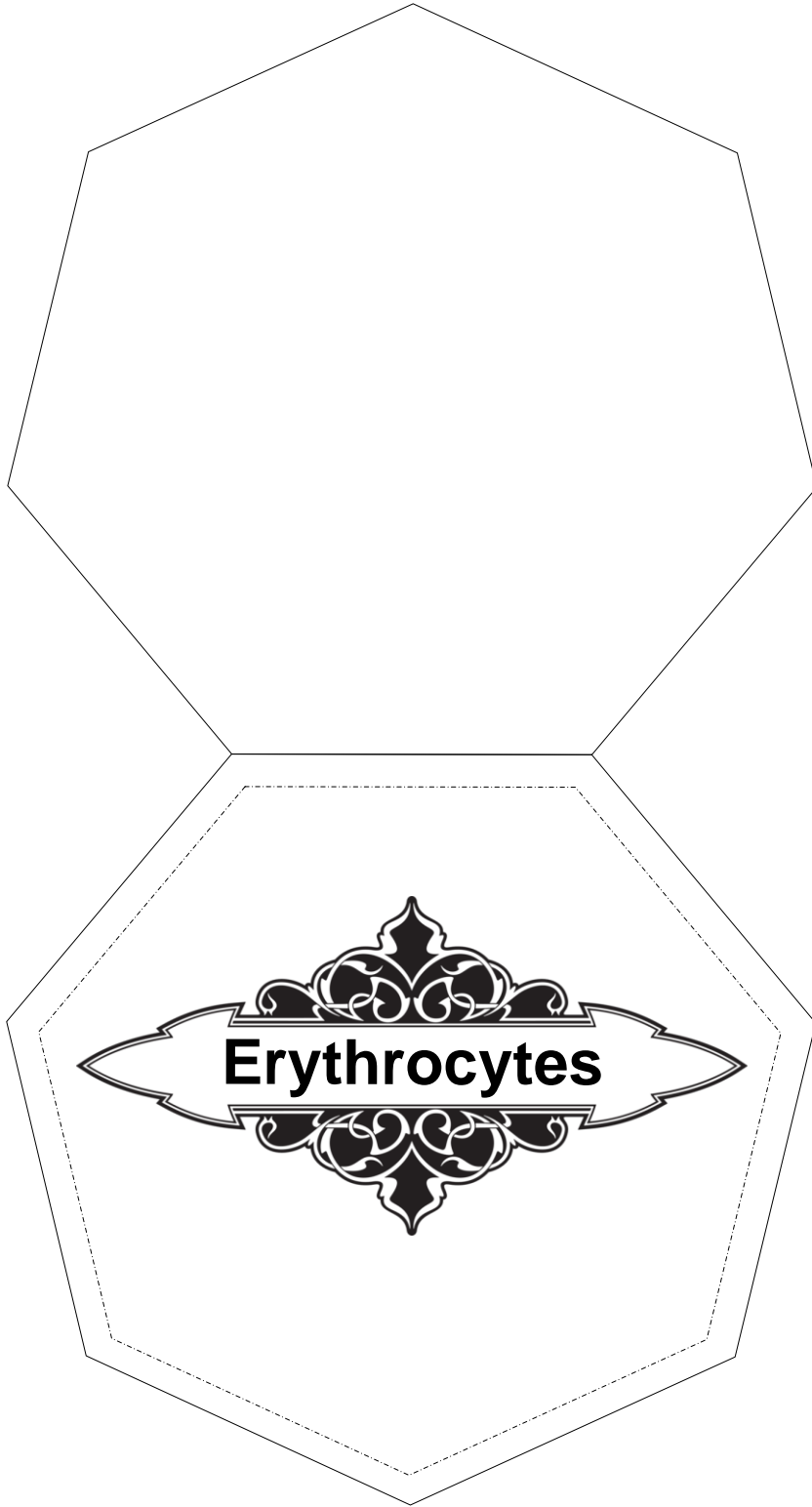
**Parts of  
the  
Circulatory  
System**

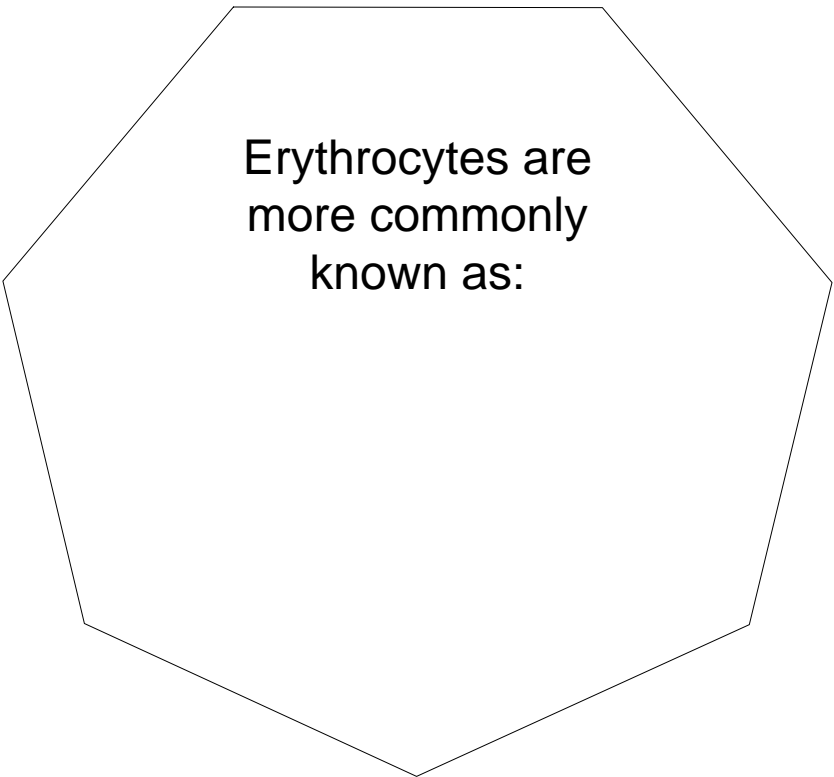


**Blood Plasma**

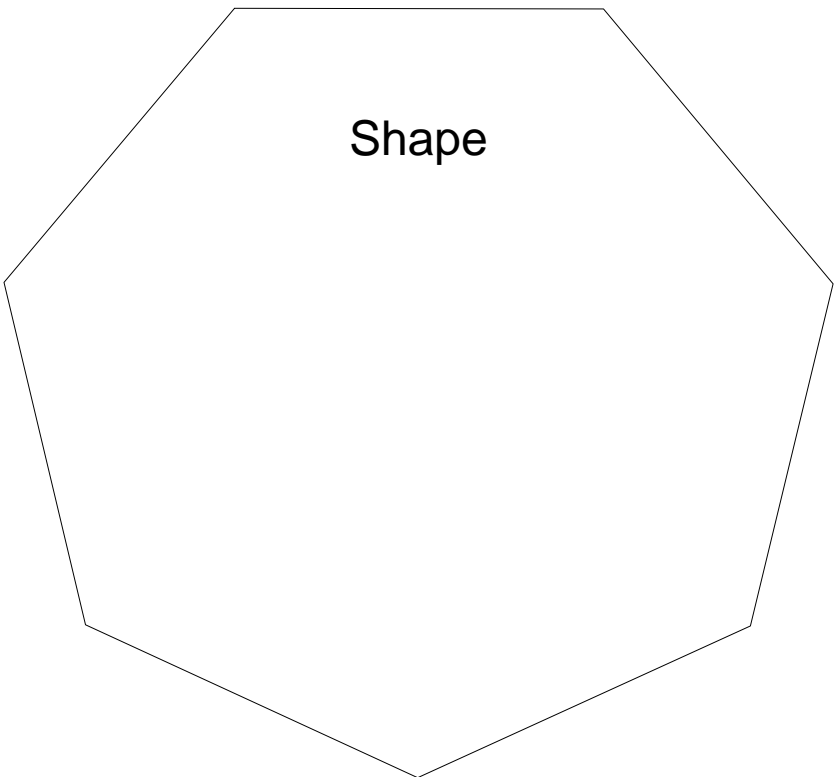
**Cells**

**Blood makes  
up about  
\_\_\_\_\_%  
of your  
body  
weight.**

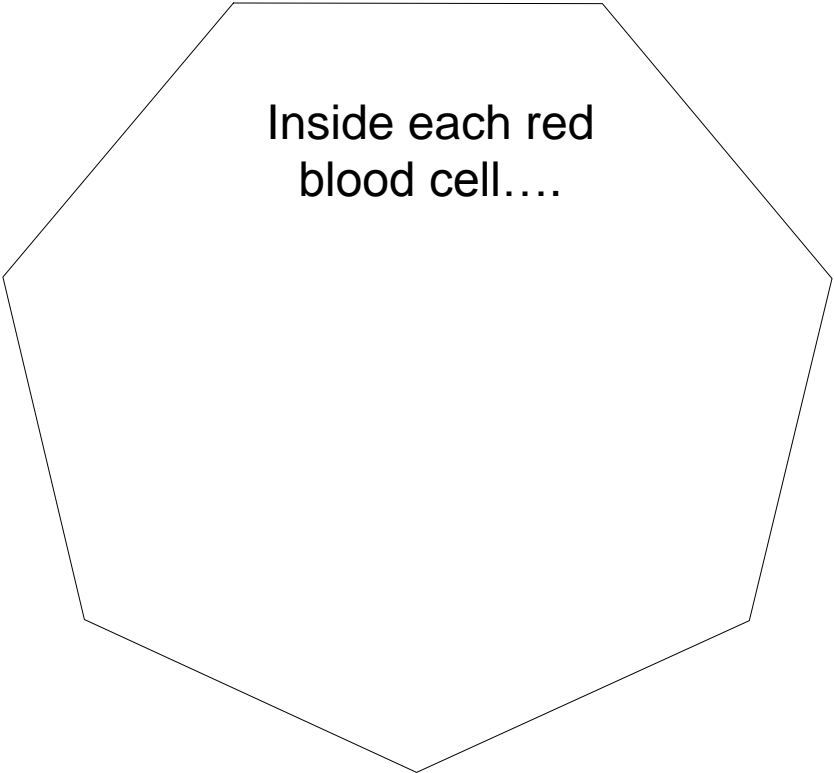




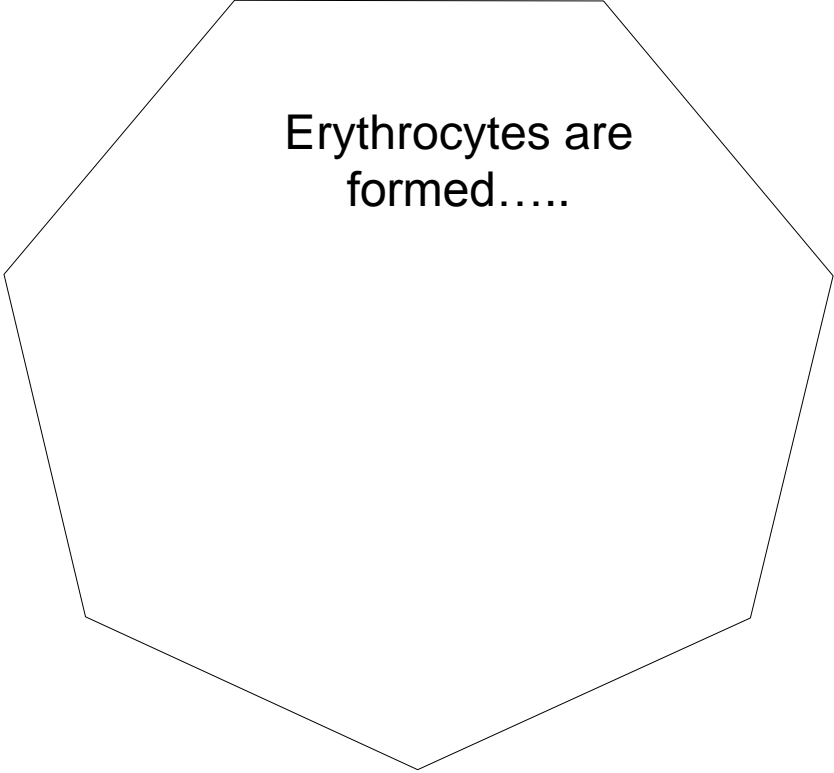
Erythrocytes are  
more commonly  
known as:



Shape

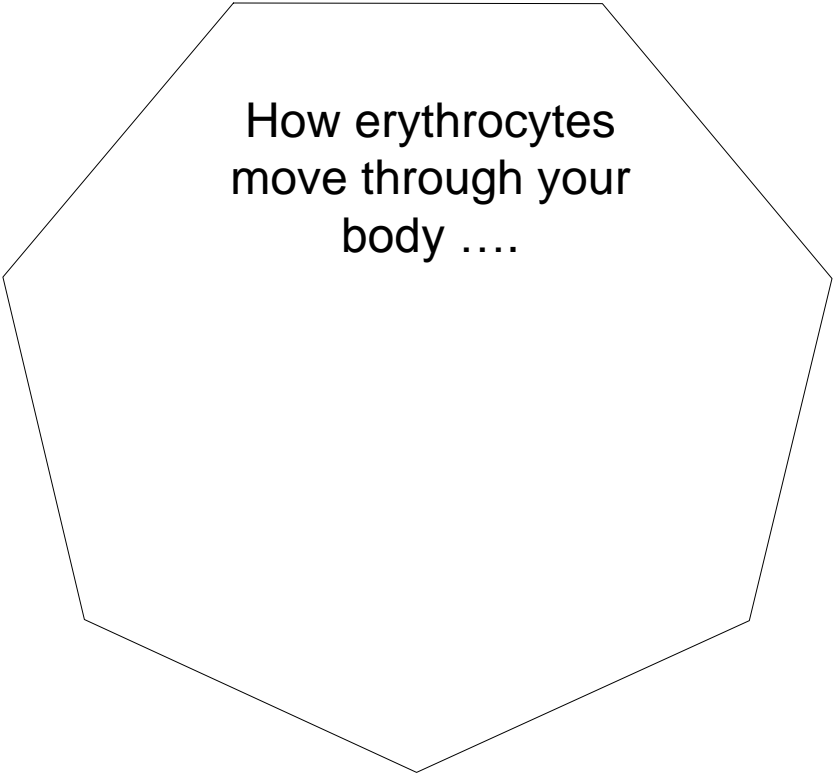


Inside each red  
blood cell....

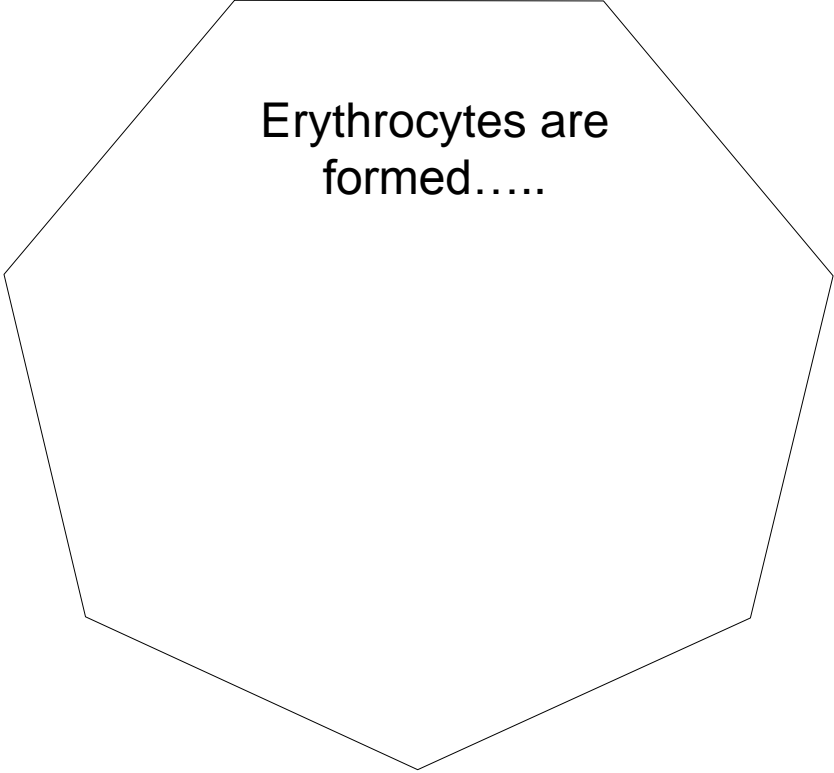


Erythrocytes are  
formed.....

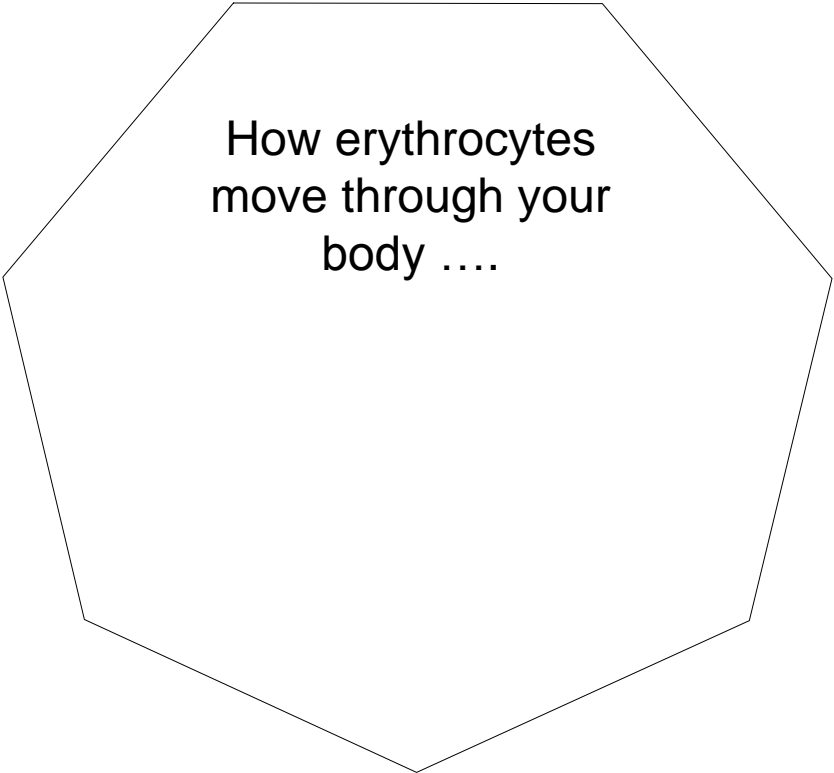




How erythrocytes  
move through your  
body ....



Erythrocytes are  
formed.....



How erythrocytes  
move through your  
body ....

# *The Circulatory System*

## *Lapbook*

### **Teacher's/Study Guide**

#### **Introduction**

The circulatory system is a fascinating topic of study. It's the system responsible for distributing nutrients throughout your body and collecting waste products so that they can be removed. Without the necessary oxygen and nutrients the cells in your body would die. And without the removal of waste products your cells would also die.

Your circulatory system is made up of many parts including your heart, lungs, blood, arteries and veins. Each one of these parts plays an important role in keeping you alive and well.

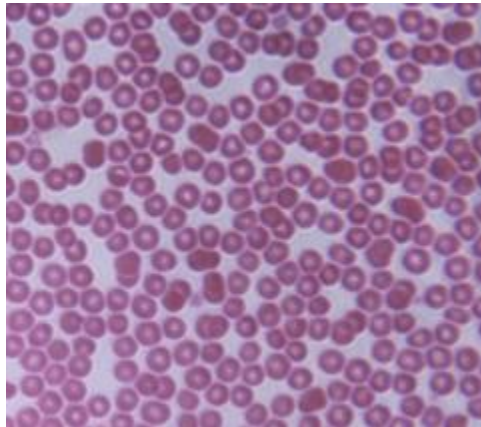
Let's step back and take a broad look at your circulatory system.

The journey begins at your heart. Blood flows into the right side of your heart and is routed through to your lungs where it becomes saturated with oxygen. Once it has picked up its load of oxygen it flows into the left side of your heart where it is then pumped out to travel to all of the organs, tissues and cells of your body via a network of blood vessels called arteries.

Once the blood has delivered its load of oxygen, it then travels back to the heart through a different set of blood vessels called veins. When it reaches your heart it flows back into the right side to begin the journey all over again.

When you look at the circulatory system so broadly however you miss so many of the fascinating details of this intricate system that God created. So let's take a deeper look.

## **Blood**



<http://www.cdc.gov/parasites/blood.html>

Blood has many different components. About 55% of your blood is composed of blood plasma, which is the liquid portion of your blood. It's what helps to carry the blood cells throughout your body. Most of that blood plasma is made up of water.

The other 45% of your blood is made up of cells. The majority of the cells found in your blood stream are red blood cells, or erythrocytes. The rest of the cells are leukocytes, or white blood cells, and platelets.

Blood makes up about 7% of your body weight.

### **Erythrocytes**

Erythrocytes are an oval shape with a small depression in the center. This depression gives them a larger surface area, which makes them more efficient at their job of transporting nutrients. Their unique shape also makes it easier for them to travel through the blood vessels.

Inside each red blood cell is a protein called hemoglobin, which is what gives your blood its red color. Inside the hemoglobin is an iron atom. This iron is what allows your erythrocytes to transport oxygen throughout your body. The oxygen sticks to the iron to hitch a ride in your blood stream.

Erythrocytes are formed in your bone marrow, which is found in the center of your bones. Millions of these red blood cells are produced every single second!

Erythrocytes cannot move throughout your body on their own. They are carried in your blood plasma through your blood vessels as your heart pumps.

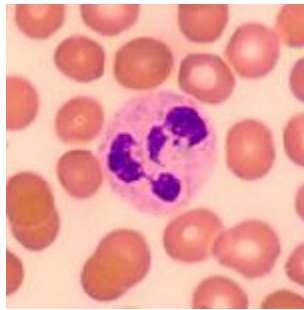
## **Leukocytes**

Leukocytes are more commonly known as white blood cells.

They move by a fascinating mode of locomotion by sending out pseudopods. Basically the white blood cell pushes some of its cytoplasm (the watery liquid inside the cell) towards one part of its cell wall. As the cytoplasm is pushed towards this localized area a “leg” grows. As the leg grows the white blood cell continues to move its cytoplasm into that “leg” until all of the cytoplasm and cell contents have moved into the “leg”. And it repeats this process over and over to move to the body’s tissues.

The job of the leukocytes is to clean up any foreign materials in your body as well as to get rid of dead cells.

There are five types of leukocytes: neutrophils, basophils, eosinophils, lymphocytes and monocytes. (The cells are bright colors in the following pictures because they have been stained to make them easier to see.)



<http://www.unomaha.edu/hpa/blood.html>

Neutrophils help to clean out infections in your body. They get rid of the offending cells by a process called phagocytosis. Basically the neutrophil “eats” the cell to get it out of your body. The neutrophil finds the infection and surrounds one cell (similar to how the pseudopods work). Once the cell is completely surrounded, the neutrophil can break it down. Neutrophils can “eat” about ten bacteria before they die.