VI. Blood

1. The vehicle that the cardiovascular system uses to

 transport materials throughout the body:

* Gases
* Nutrients
* Wastes
* Heat
1. Physical characteristics:
2. Scarlet (O2-rich/arteries) to dull red (O2-poor/veins)
3. Heavier and 5x thicker than water
4. Narrow pH range: 7.35-7.45
5. 100.4°F (warmer than body)
6. 5-6 liters (8% of total body weight)
7. Considered to be connective tissue.

 living cells surrounded by nonliving extracellular matrix

1.  Plasma (the nonliving extracellular matrix)
2. 90% water
3. 100’s of things dissolved in it
4. Plasma proteins:
* Albumin – keeps correct amount of water in

 the blood

* Antibodies – protection from pathogens
* Clotting proteins – control blood loss
1.  Formed Elements (the living cells in the plasma)
2. Erythrocytes (RBS’s)
* the most abundant F.E.
* last about 120 days
* no nucleus
* carry O2 on hemoglobin (a protein with iron)



1. Leucocytes (WBC’s)
* Fight disease
* Respond to chemicals given off by infected tissue
* Leukocytosis – elevated WBC count which

 indicates disease or infection.

1. Platelets
* Irregular-shaped cell

fragments.

* Hemostasis (blood clotting):
	+ Cling to ruptured tunica intima of vessel (usually very smooth but rough when injured)
	+ Plug causes vessel to spasm and constrict
	+ Protein “fibrin” forms which traps RBC’s to make clot
	+ [Usually takes 3-6 minutes](http://www.youtube.com/watch?v=8YjmE5UMYvY)