**Blood Unit Study Guide**

1. Blood Composition [textbook pages 328-334]
   1. Know that blood is 55% plasma and 45% cells. (blood composition handout)
   2. Know the different types of cells in your blood: red blood cells, white blood cells, platelets.
   3. Know the different types of white blood cells in order of abundance: neutrophils, lymphocytes, monocytes, eosinophils, basophils.
   4. Know the main function of each type of cell in your blood. (blood cell highlights handout)
2. Blood types and transfusions [textbook pages 338-341]
   1. Know the 8 different blood types a person can have.
   2. Know the genetics of blood type. (A, B, O; R, r)
   3. Be able to do a Punnett Square for two different blood types to determine the possible blood types of their offspring.
   4. Know blood compatibilities – which types of blood can a person receive?
   5. Know how to determine a blood type in a lab using antibodies. (blood typing lab)
3. Blood cell formation in the bone marrow (Hematopoiesis) [textbook pages 334-335]
   1. New blood cells are produced in the bone marrow by hemocytoblast stem cells.
   2. Erythropoietin (EPO) stimulates red blood cell production due to low red blood cell levels or low blood oxygen levels.
   3. Colony stimulating factors (CSFs) stimulate white blood cell production due to infection.
   4. Thrombopoietin (THPO) stimulates platelet production due to low platelet levels.
4. Blood Clotting (Hemostasis) [textbook pages 335-337]
   1. Injury to a blood vessel initiates the formation of a blood clot. There are four steps to forming a blood clot:
      1. A platelet plug forms.
      2. The blood vessel constricts. (vasoconstriction)
      3. Formation of a fibrin net.
      4. Tissue healing and repair.
   2. Blood clotting is a highly controlled process, because you don’t want blood to clot when it shouldn’t. Your blood should flow smoothly as a liquid!