What Does Circulation Work?

Name: _____ Date: _____

Circulation

- The busy transportation system inside your body is moving _____ liters (2,000 gallons) of materials each day to keep you alive!
- The group of organs that transports materials from one place in your body to another is the _____ _____.
- The circulatory system consists of _____, the heart, and a network of blood vessels.

Circulation: Blood

- Blood consists of _____ and _____ parts.
- It includes…
  - Plasma
  - _____ Blood Cells
  - _____ Blood Cells
  - Platelets
- The liquid part of blood is _____.
- It consists of about 90% _____ and 10% nutrients and other materials.
- The _____ part of blood includes red blood cells, white blood cells, and platelets.
- _____ **blood cells**, or *erythrocytes* are large microscopic cells without nuclei that carry oxygen from the lungs to body cells and carry carbon dioxide from body cells to the lungs.
- _____ blood cells, also called *leukocytes*, help protect you from infections and disease.
- They are _____ than red blood cells, but _____ in number.
- They also found in your _____, liver, and lymph glands.
- Some white cells, called *lymphocytes* are your immune systems first _____.
- They seek out _____, viruses, and fungi in your body
- _____ are small colorless bodies that release chemicals to form clots to stop the flow of blood.
- Blood transports _____ and oxygen to your body's cells.
- It carries carbon dioxide and other waste products _____ from the body's cells.

- Blood helps maintain a proper _____ for your body and fights disease.
- Why is the color of red blood cells significant?
- Red blood cells contain an iron-rich molecule called _____.
- This gas transporting molecule gives blood its color and makes up _____ of a red cell.
- It attaches to _____ molecules.
- The amount of red blood cells, white blood cells, platelets, and plasma in your blood are always _____.
- The white blood cells will increase in number because their function is to _____ your body from infection and disease.

Circulation: William Harvey

- In 1628, English physician William Harvey showed that blood flows through blood vessels and is pumped by the _____.
- Before the discover, people believed the blood oozed _____ inside the body.
- Their explanation was simply that _____ keep the blood flowing in the body.
- There was a tendency for people to say "god did it" whenever they _____ understand how something worked.
- As they figured out how things worked, they no longer attributed everything to _____.

The Heart

- God designed the heart to pump _____ to all parts of the body.
- It is made up of cardiac muscle, _____ _____, and connective tissue.
- When you place your hand over your heart you can feel it _____.
- Your heart is located between your _____ and is protected by the sternum.
- Make a fist.
- That is about the size of your _____.
- Your heart beats about _____ times a day!
- It can pump approximately _____ of blood every minute.
- As you grow, your body needs more _____.
- At 12 years of age, your heart beats between 70 and 100 times per _____.

- The heart not only pumps blood through the body, but also pumps blood _____ to the lungs, where it can be replenished with oxygen.
- Recall that your heart is divided into two _____ separated by a wall of muscle called the septum.
- The heart contains _____ chambers.
- Each upper chamber is an _____.
- Each lower chamber is a _____.
- Why does your heart make the distinct lub-dub sound?
- The sound relates to the _____ of the heart valves.
- As the heart contracts, it pushes blood from one chamber to the _____.
- A one-way value _____ behind each chamber.
- The pumping action of the heart creates your blood _____.
- Blood pressure is measured in _____ ways: systolic and diastolic.
- _____ is the pressure in your arteries from when your heart muscle contracts in a heart beat.
- _____ is the pressure in your arteries between heartbeats when the heart muscle rests between beats and refills with blood.
- Both systolic and diastolic pressure are measured to monitor heart and blood _____.
- A reading _____ than 120 mm Hg systolic pressure and _____ than 80 mm Hg is considered healthy.