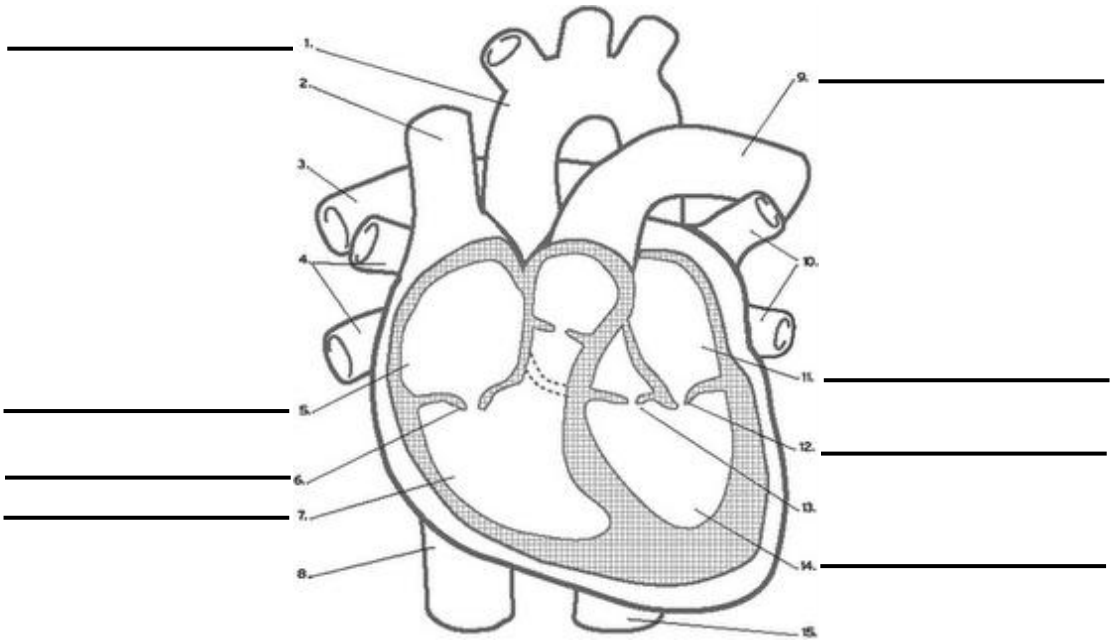
Circulatory System: Web Quest Activity

Part A: The Mammalian Heart

http://medtropolis.com/virtual-body/

1. a) **Click** on the **"Heart Parts"** button.
   b) **Label** the parts of the heart on the following diagram using the list below.

Right Ventricle	Right Atrium	Aorta	Tricuspid valve
Left Ventricle	Left Atrium	Pulmonary Artery	Bicuspid valve



c) **Click** on the **"Narrated Tour Button".** Using the **arrow buttons,** read through the narration.

d) **Using arrows** show where the blood is coming from when it enters the heart and where it is going when it leaves the heart <u>on the diagram above</u> (refer to Mammalian Heart diagram for help).

e) **Describe** the <u>function</u> of each of the parts listed below:

i.) right ventricle: _____

_____

ii.) left ventricle: _____

_____

iii.) right atrium: _____

_____

iv.) left atrium: _____

_____

v.) pulmonary artery: _____

_____

vi.) aorta: _____

_____

vii.) valves: _____

2. a) **How** does the "**Narrated Tour"** describe the heart?

b) **Why** does the heart need to be a muscular pump? (**Hint**: think of its function)

c) **What** causes the lub-dub sound you hear when listening to your heart?

Use the following website to answer the next questions.
http://science.nationalgeographic.com/science/health-and-human-body/human-body/heart-article/

3. **Summarize** how **"Oxygenated Blood Feeds the Body".**

4. a) **Define –** heart rate.

b) **How** many times does the heart beat in twenty-four hours?

5. **Describe** the effect of exercise on the heart rate.

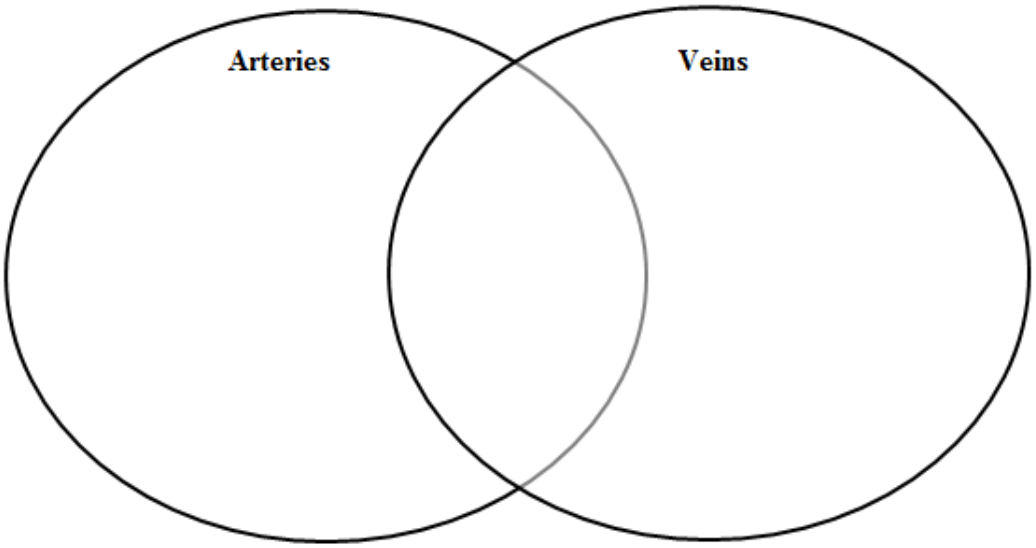
Part B: The Blood Vessels
Use the following website to answer the questions below. On the left hand side click on "Vessels."
http://library.thinkquest.org/25896/

1. Name the three general types of blood vessels?

2. a) **What** is the function of <u>all</u> arteries?

b) **What** is the function of all veins?

c) **How** are arteries and veins similar and different? (**Complete** the VENN diagram)



3. a) **What** is the function of capillaries?

b) **Why** is it necessary that the walls of capillaries be one cell thick (i.e. thin-walled)?

The Blood: ***On the left hand side click on "Blood."***

4. **What** kind of tissue is blood (you should know this from class)?

5. **Complete** the following chart.

Blood parts	**Function**
Plasma	
RBC	
WBC	
Platelets	

6. a) Of the 3 types of blood cells, which is the most plentiful?

b) Why would it be important for this cell to be the most plentiful?

Part C: Summary of The Mammalian Circulatory System

1. What are the **3 main parts** of the circulatory system?

2. **List** 3 functions of the circulatory system?

3. a) **Why** is it important that the circulatory system interact with the respiratory system (i.e. lungs)?

b) **Why** is it important that the circulatory system interact with the digestive system (i.e. small intestine)?

Part D: Comparing Humans and Other Animals

The Circulatory system of a frog, just like humans, consists of the heart, blood vessels, and blood. Frogs have a closed circulatory system that means the frog's blood is contained within blood vessels and the heart. The double loop system means that the blood goes back to the heart two times before the blood goes through the whole system of the frog's body. There are three chambers consisting of one ventricle and two atria. The ventricle pumps blood through a single artery that distributes blood throughout the body. Oxygenated blood coming back to the heart from lungs enters the heart into a different atrium than the de-oxygenated blood does coming from the body capillaries. The oxygenated blood leaves through the aorta and travels to the body capillaries and the deoxygenated blood (CO_2) leaves through the pulmonary artery and goes to the lungs. Oxygenated blood and de-oxygenated blood mix because frogs lack a septum (wall) that would keep them separate. The frog's circulatory system works well for them because frogs do not need as much oxygen-rich blood. Their body has two sources of oxygen - their lungs and diffusion through their thin skin. Both oxygen and carbon dioxide are able to diffuse through the skin of frogs. Another reason why their three chambered heart works is because frogs are ectoderm's which means they maintain their body temperature externally and this requires a lot less oxygen.

Another Website for your reference:
http://www.zeitzer.com/biologysite/
Use the diagram below to help you answer the following questions.

1. a) **How** many chambers are in a frog's heart?

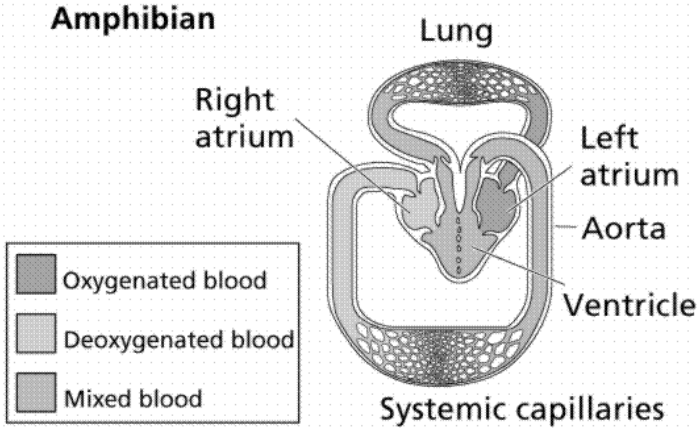
b) **How** is it similar to a human's heart?

c) **How** is it different?

2. a) **What** does it mean when it says that frogs are 'ectoderms'?

b) **How** do frogs manage to keep warm on a cool day in the spring?

c) **How** do frogs manage to keep cool on a hot summer's day?



Part E: Textbook Work

1. **Read** pages 942 -955
2. **Answer** questions in Section Assessment 1-5 page 950, 1-5 page 955.