

STUDY GUIDE - CIRCULATORY SYSTEM

Be able to compare the structure of the heart of at least three of the following organisms and make sure to include at least one single loop example and one double loop example:

Earthworms - single closed loop, non-chambered heart, breathes through skin

Fish - single closed loop, two chambered heart, gills present

Frog - double closed loop, three chambered heart, no septum, lungs present

Reptile - double closed loop, three chambered heart, partial septum, lungs present

Bird/Mammal - double closed loop, four chambered heart, full septum, lungs present

Human Heart:

1. Be able to label structures on a diagram
2. Be able to define structures (from vocabulary handout you have)
3. Be able to describe the direction of blood flow through heart

Blood Vessels: Using the chart in your notebook that compares the 3 blood vessel types -
Be able to compare the structure and function of arteries, veins & capillaries

Pulse Rate:

1. Expanding and contracting of arteries each time the heart beats
2. Know how activity level affects pulse

Functions of the Circulatory System:

1. Distributes oxygen to body
2. Distributes nutrients to body
3. Collects carbon dioxide and other cellular wastes to get rid of them
4. Helps kill bacteria - White Blood Cells, antibodies
5. Regulates body temperature

Blood: Know the importance and function of each component - Refer to handout in notebook

1. Solid Components:
 - Red Blood Cells - carries oxygen/carbon dioxide on the hemoglobin
 - White Blood Cells - kills bacteria
 - Platelets - helps to clot blood when injured
2. Liquid Component:
 - Plasma - mostly water / contains antibodies giving us immunity (ability to fight disease)

Heart Disease: Be able to describe what they are, what causes them, & what organs are affected

1. Heart Attack or Cardiac Arrest
2. Stroke
3. High Blood Pressure or Hypertension

STUDY GUIDE - RESPIRATORY SYSTEM

VOCABULARY:

Breathing

1. Inhale/ Inspiration - Taking in oxygen into lungs
Diaphragm contracts, ribs move outward, chest cavity size increases
→ so chest cavity pressure decreases and air goes in
2. Exhale/Expiration - Releasing carbon dioxide & water vapor from the lungs
Diaphragm relaxes, ribs move inward, chest cavity size decreases
→ so chest cavity pressure increases and air goes out

Cellular Respiration

- process where cells use oxygen and glucose to release energy to cells, occurs in the mitochondria

Cellular Respiration: $\text{Oxygen} + \text{Glucose} \rightarrow \text{Energy} + \text{Water} + \text{Carbon dioxide}$

PARTS OF SYSTEM:

1. Oral cavity - mouth
2. Pharynx - where nasal cavity and oral cavity meet at the top of the throat
3. Larynx - voice box located in the trachea
4. Trachea - windpipe
5. Bronchus/Bronchi - where trachea divides to go to each lung
6. Bronchioles - tiny branches off of the bronchi, inside the lungs
7. Alveoli - air sacs surrounded by capillaries located at the end of each bronchiole where the gases (oxygen and carbon dioxide) are exchanged
8. Diaphragm - muscle at the bottom of the chest cavity which helps us breathe
relaxes (moves up) - when we breathe out
contracts (flattens, moves down) - when we breathe in
9. Cartilage - flexible bone
 - a. protective rings around the trachea
 - b. Adam's apple - protects the larynx

FUNCTION OF THE NASAL CAVITY:

1. warms the air
2. moistens the air
3. filters the air

Be able to label diagram of the respiratory system

CIRCULATORY / RESPIRATORY SYSTEM - STUDY GUIDE

Name _____

Date _____ Per _____

The chambers of the heart by which blood leaves the heart are called _____.

The word "pulmonary" refers to the _____.

Blood vessels that take blood back to the heart are called _____.

The largest artery is called the _____.

A stroke is caused by a blocked artery in a person's _____.

_____ Cells that fight disease are called

- A. White blood cells B. Red blood cells C. Platelets

_____ Valves can be found in

- A. Capillaries B. Veins C. Arteries

_____ When a person swallows food the _____ closes the trachea.

- A. Pharynx B. Epiglottis C. Uvula

_____ Birds have _____ chambers in their heart.

- A. two B. three C. four

_____ The iron-rich compound of the blood that carries oxygen is called the

- A. Plasma B. White Blood Cells C. Hemoglobin

CIRCULATORY / RESPIRATORY SYSTEM - STUDY GUIDE

Name _____

Date _____ Per _____

Describe the differences in structure between the artery and the vein.

ARTERY	VEIN

Describe what happens in the chest cavity that allows air to enter and exit. (bullet your answer)

	<u>Inhale</u>	<u>Exhale</u>
Ribs (moves in or out)	▪	▪
Diaphragm (contracts or relaxes)	▪	▪
Chest Cavity Size (increases or decreases)	▪	▪
Chest Cavity Pressure (high or low)	▪	▪

ORGANISM →	EARTHWORM	FISH	AMPHIBIAN	REPTILE	BIRD	MAMMAL
Number of Chambers	0	2	3	3	4	4
Single or Double Loop System	Single	Single	Double	Double	Double	Double
Septum: Yes, No or Partial	No	No	No	Partial	Yes	Yes