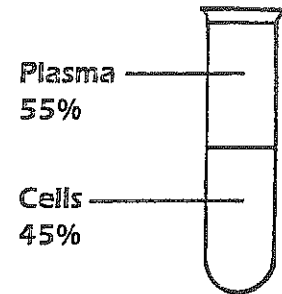
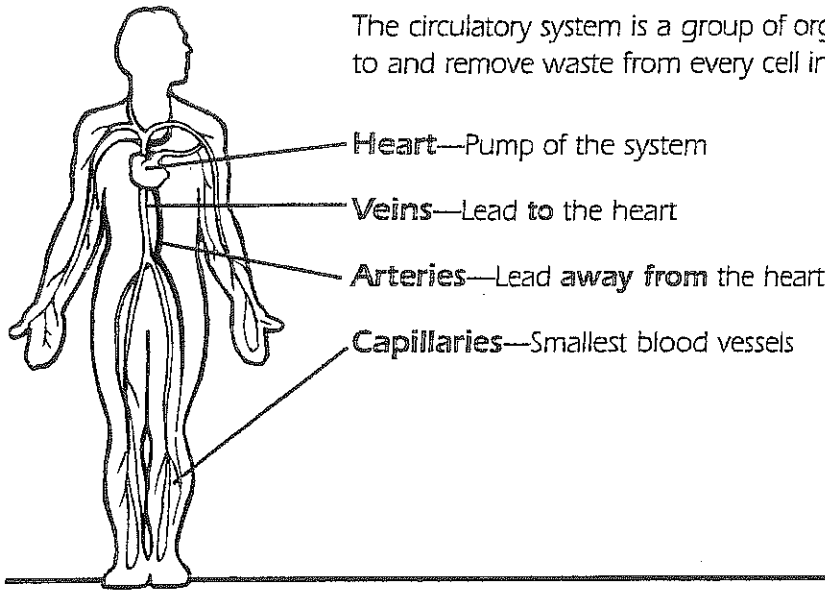


BODY SYSTEMS

CIRCULATORY SYSTEM AND BLOOD

The circulatory system is a group of organs which carry food and oxygen to and remove waste from every cell in the body.



Composition of blood

THE BLOOD—FLUID OF THE CIRCULATORY SYSTEM

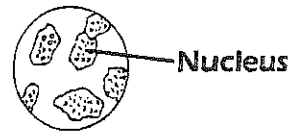
Red Blood Cells

- Carry oxygen and carbon dioxide to and from the lungs
- Produced in the bone marrow
- Living cells without a nucleus
- About 5,000,000 per cubic millimeter
- Live only about 100–120 days



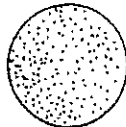
White Blood Cells

- Destroy bacteria which invade the body
- Are produced in the spleen and lymph nodes
- Are living cells with nuclei
- About 6,000 per cubic millimeter



Blood Platelets

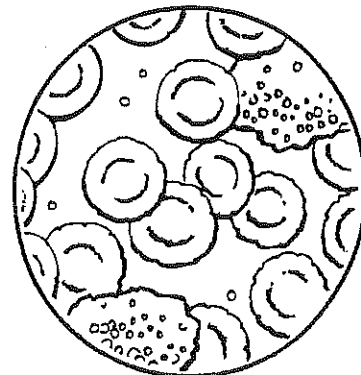
- Aid blood clotting
- Are formed from bone cells in bone marrow
- Are nonliving cells
- Help stop bleeding by forming clots
- About 300,000 per cubic millimeter



Plasma

- Liquid part of blood
- About 90% water
- Contains salts and chemicals
- Moves through veins and arteries

Composition of Blood



Human Blood Magnified

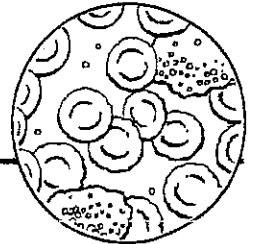
BODY SYSTEMS

CIRCULATORY SYSTEM

WORD SEARCH

A H B B C D E V F S H J S X C
 C E D L E Y F E Z A L B L S W
 M A R R O W H I T A S K L A D
 A R O B Y O G N G M E C E L L
 O T Z M X N D S M S I N C T O
 S X L Y K R M U I A R T D S E
 P K G W V J I U L L E P E V J
 R E N U C L E U S P T O R P R
 N P L A T E L E T S R N O S F
 Q C H E M I C A L S A T G I H

- OXYGEN
- VEINS
- BLOOD
- RED CELLS
- PLATELETS
- CHEMICALS
- CELL
- ARTERIES
- HEART
- MARROW
- PLASMA
- SALTS
- NUCLEUS



Complete the sentences below by adding the correct vowels.

1. R ___ d bl ___ d c ___ lls c ___ rr ___ x ___ g ___ n ___ nd
 c ___ rb ___ n d ___ x ___ d ___.
2. Wh ___ t ___ bl ___ d c ___ lls d ___ str ___ b ___ ct ___ r ___.
3. Bl ___ d pl ___ t ___ l ___ ts ___ d bl ___ d cl ___ tt ___ ng.
4. Th ___ h ___ rt ___ s th ___ p ___ mp ___ f th ___ c ___ rc ___ l ___ t ___ r ___
 s ___ st ___ m.
5. Th ___ fl ___ d ___ f th ___ c ___ rc ___ l ___ t ___ r ___ s ___ st ___ m
 ___ s bl ___ d.


Complete the sentences below by adding the correct consonants.


6. ___ a ___ i ___ a ___ ie ___ a ___ e ___ e ___ a ___ e ___
 ___ oo ___ e ___ e ___.
7. A ___ e ___ ie ___ ea ___ a ___ ay ___ o ___ e ___ ea ___.
8. ___ ei ___ ea ___ o ___ e ___ ea ___.
9. ___ e ___ i ___ u ___ a ___ o ___ y ___ y ___ e ___ i ___
 ___ oo ___ a ___ o ___ y ___ e ___ o ___ e ___.
10. ___ a ___ a ___ i ___ e ___ i ___ ui ___ a ___ o
 ___ oo ___.

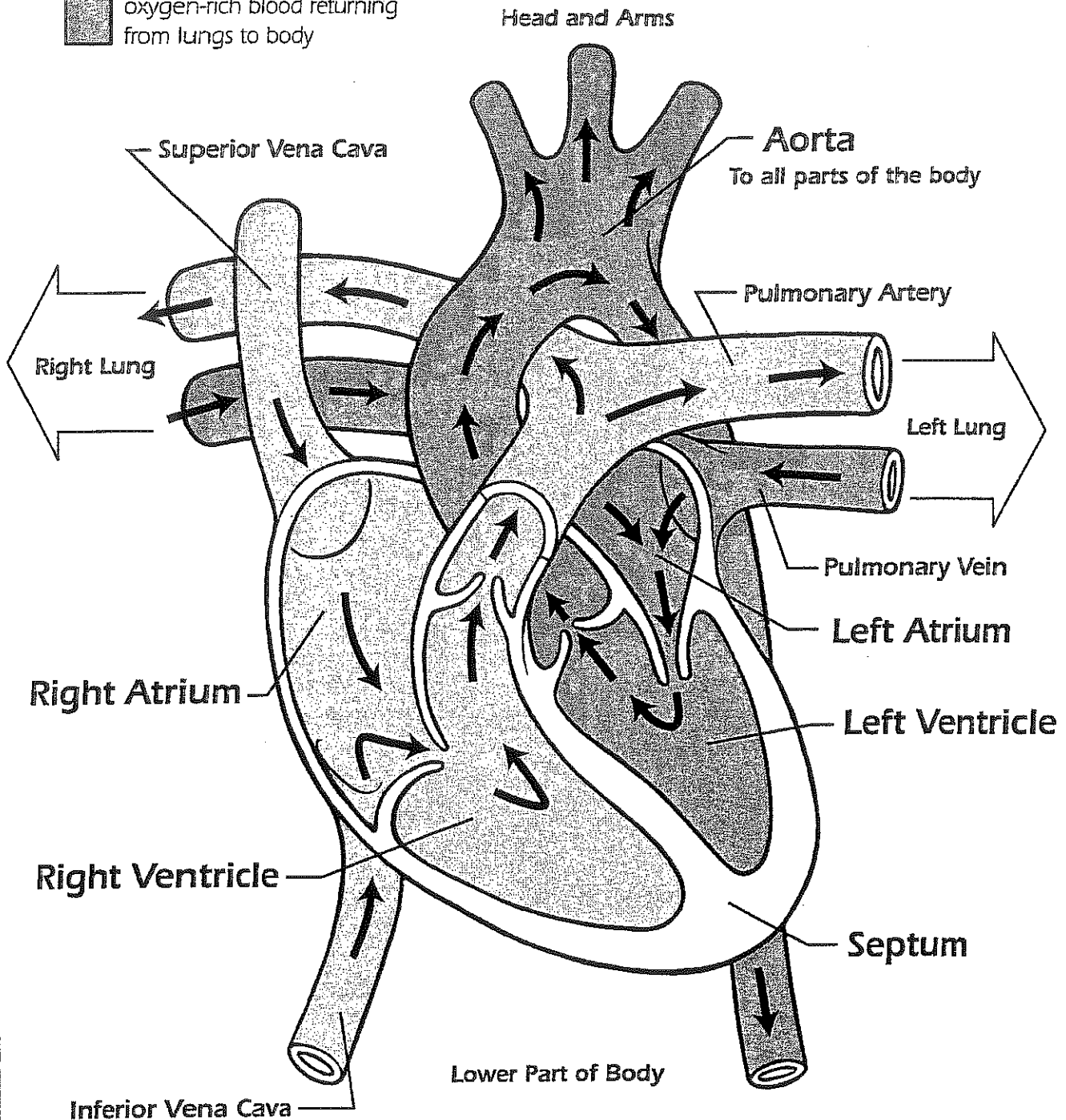
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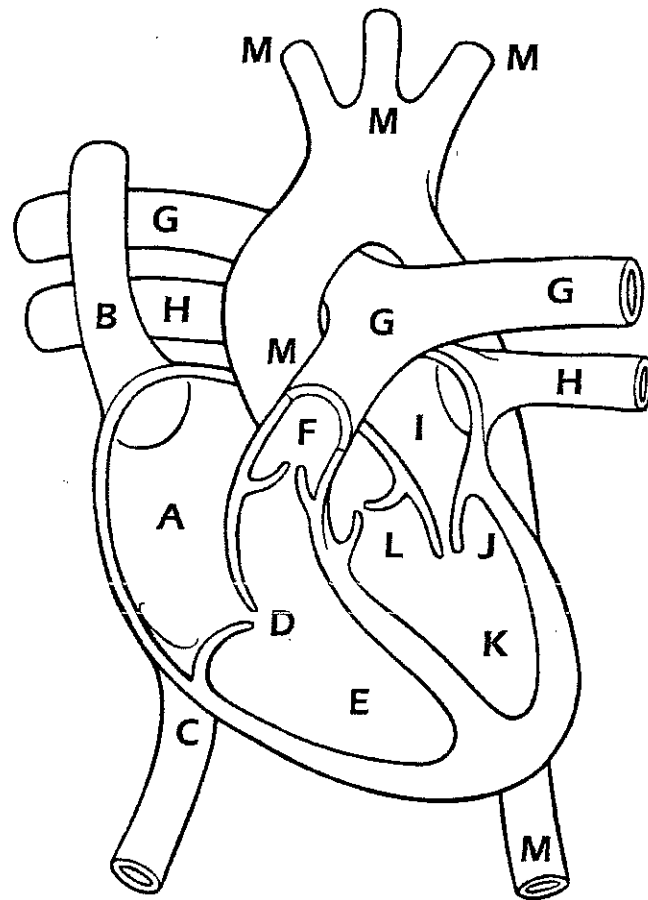
BODY SYSTEMS

THE HEART

 deoxygenated blood coming from body to lungs

 oxygen-rich blood returning from lungs to body



BODY SYSTEMS**THE PATH OF BLOOD**

The **RIGHT ATRIUM (A)**, which is the upper chamber of the right side of the heart, receives blood from the upper body through the **SUPERIOR VENA CAVA (B)**, and from the lower body through the **INFERIOR VENA CAVA (C)**. This blood is a darker color because it is returning from the body carrying carbon dioxide (waste from cells) that was released by body cells as the blood deposited oxygen. Blood then flows through the **TRICUSPID VALVE (D)** into the **RIGHT VENTRICLE (E)** which is the lower chamber on the right side of the heart. Through contraction of the right ventricle, the darker-colored blood is forced through the **PULMONARY VALVE (F)** into the **PULMONARY ARTERY (G)**. The **PULMONARY ARTERY (G)** branches to both the right and the

left lung to pick up oxygen and release carbon dioxide wastes. While in the lungs, the blood changes color to a bright red because it is now full of fresh oxygen needed by the body. It returns from both lungs through the **PULMONARY VEINS (H)**.

The red blood carrying oxygen for all body cells will now re-enter the left upper chamber of the heart, the **LEFT ATRIUM (I)**. It then flows through the **MITRAL VALVE (J)** and into the lower left chamber, the **LEFT VENTRICLE (K)**. Finally, the oxygenated blood passes through the **AORTIC VALVE (L)** into the **AORTA (M)**, the largest artery, where it is sent to all parts of the body.

BODY SYSTEMS**THE HEART**

Use the information on page 12 to complete these activities:

1. Label these parts of the heart:

right atrium

left atrium

right ventricle

left ventricle

pulmonary artery

pulmonary vein

superior vena cava

inferior vena cava

valves—tricuspid

pulmonary

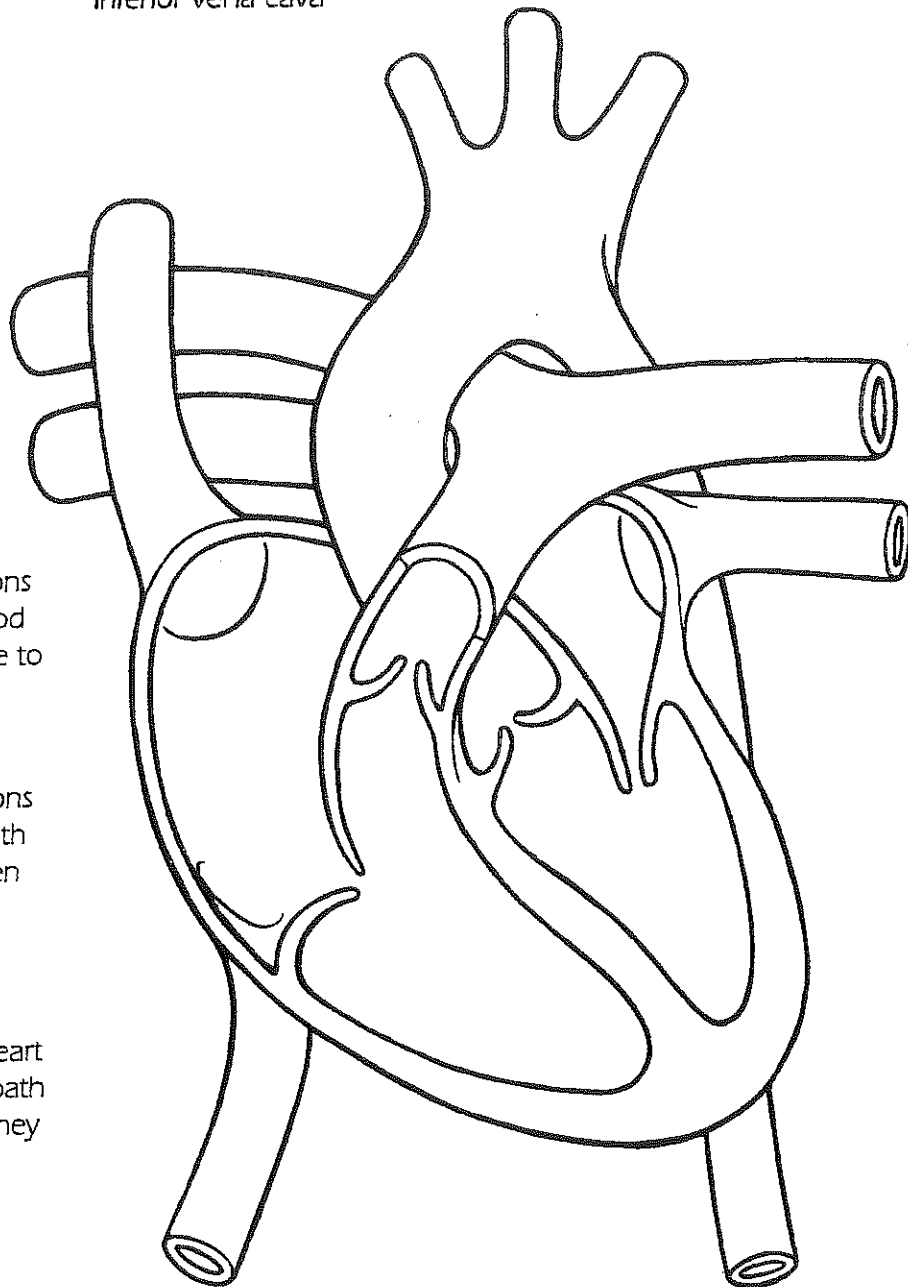
mitral

aortic

2. Lightly shade the sections blue that transport blood carrying carbon dioxide to the lungs.

3. Lightly shade the sections red that carry blood with a fresh supply of oxygen from the lungs to the body.

4. Draw arrows on the heart diagram to show the path blood takes on its journey through the heart.



BODY SYSTEMS

REVIEW

1. Explain the function of the heart in the circulatory system. _____

2. _____ carry blood to the heart.
3. _____ carry blood away from the heart.
4. The largest artery in the body that goes from the heart is called the _____.
5. Arrange the following words to show the correct flow of blood through the heart: superior vena cava, right ventricle, left ventricle, right atrium, left atrium, pulmonary vein, pulmonary artery, aorta.
 A. _____ E. _____
 B. _____ F. _____
 C. _____ G. _____
 D. _____ H. _____
6. Blood contains _____ that carry oxygen to the cells and wastes away from the cells.
7. The _____ fight bacteria that enter the body.
8. Blood contains _____ that are necessary for blood clotting.
9. _____ is the liquid part of the blood.
10. Describe the function of the lungs in the circulatory system. _____

11. Blood going to the heart is _____ in color, while blood going away from the heart is _____ in color.
12. Why do you think it would be very dangerous to lose a quart of blood in an accident?

