

Circulatory System Packet

Circulatory System

Completion of the worksheet of the
arterial flow. Every part of the body needs
and
Blood also carries oxygen to the _____ and
_____.

The Heart

The heart is the only muscle that never rest and to rest. It is an
muscle that works day and night. During normal activity, it beats about
per minute. During exercise, it beats much faster.

Blood Vessels

Each body cell needs blood oxygen and all the body cells. As blood flows
through blood vessels, it carries oxygen to the cells of the body. Blood
carries away carbon dioxide and wastes from the body. The network of blood vessels that
carries blood to and from the body is called the circulatory system. There are two types of blood vessels in the
circulatory system: arteries and veins.

Blood Flow in Human Circulatory System

The heart pumps blood through the body. Blood flows through the body in two
directions: from the heart to the body and from the body back to the heart.

Circulatory System Project:

On a separate sheet of paper, draw a diagram of the human circulatory system. Label
the heart, lungs, and major blood vessels. Use colored markers to show the flow of
oxygenated and deoxygenated blood.

Circulatory System Arteries and Veins

Arteries carry oxygenated blood away from the heart. Veins carry deoxygenated
blood back to the heart.

Circulatory System Tissues Matching

1. White blood cells
2. Veins
3. Capillaries
4. Arteries
5. Red blood cells
6. Heart
7. Lungs
8. Aorta

Getting Rid of Waste

Kidney Artery

Kidney Vein

Diseases of the Circulatory System

Cholesterol

Blood Typing Kit

What's Your Blood Type? Survey Results

Age Group	Male	Female	Total
13-17	10	12	22
18-24	15	18	33
25-34	20	25	45
35-44	25	30	55
45-54	30	35	65
55-64	35	40	75
65-74	40	45	85
75+	45	50	95

What's Your Blood Type?

1. A
2. B
3. AB
4. O

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Circulatory System Packet

Name _____

Circulatory System

Circulation is the movement of _____ around the entire body. Every part of the body needs _____ and _____ to stay alive.

Blood also carries wastes to the _____ and _____.

Blood also spreads _____ evenly around the body. What part of your body gets most easily? _____

The heart and blood vessels work together to move blood. Blood vessels called _____ and _____ are pictured in _____.

_____ is pictured to _____ blood to the smallest parts of the body.

If you were to get off _____ around planet Earth _____

Name _____

The Heart

The heart is the only muscle that does not need to rest. It is an _____ muscle that works day and night. During normal activity, a heart beats _____ to _____ per minute. During exercise, it beats much faster.

The heart has four parts or _____ chambers. _____ Blood flows through the chambers. _____ Then blood enters the lower chambers.

The left ventricle pumps fresh blood to the rest of the body. The right ventricle pumps _____ returning blood from the veins.

The pathway of blood flow through the heart _____

From Body _____ To Body _____

Left side of the heart _____ Right side of the heart _____

Normal Blood Flow _____

The heart functions as two separate pumps. The right side of the heart pumps blood _____ to the _____ This is known as _____ circulation.

In the lungs, _____ blood _____ and oxygen is absorbed. The blood then flows into the left heart and is pumped to the rest of the body. This is known as _____

Name _____

Your Pulse

Blood flows between chambers through flaps called _____ valves.

Your heartbeat is the result of these _____ closing.

Your heart beats _____ times a day!!

Take Your Pulse!

Let's graph your heart rate. First, your pulse by placing your fingers gently on the side of your neck at an artery. First, take your pulse when resting. Take your pulse for 15 seconds and multiply by 4. Fill in the graph below under resting.

- Next, walk slowly around the room for 1 minute. Stop and take your pulse. Fill in the chart below.
- Then, run around the room for 1 minute. Stop and take your pulse. Fill in the chart below.
- Finally, skip around the room for 1 minute. Stop and take your pulse. Fill in the chart below.
- Is the rate higher, lower or the same? Do it for one minute, then skip and take your pulse.

What activity made your heart rate faster?

200	
190	
180	
170	
160	
150	
140	
130	
120	
110	
100	
90	
80	
70	
60	
50	
40	
30	
20	
10	
0	

Circulatory System Diagrams

Labels include: Artery, Vein, Capillary, Heart, Blood Vessel, and various diagrams showing blood flow patterns.

Name _____

Cholesterol

_____ is a type of _____ found in your blood _____ helps lubricate _____ You also get _____ from the food you eat. _____

What causes foods that have cholesterol?

Why do we have cholesterol?

Why are cholesterol levels bad?

Name _____

Blood

_____ is the liquid component of blood. It carries nutrients, _____, and proteins throughout the body.

_____ is 40-50% of the total blood volume. _____ They transport _____ from the _____ living tissues and carry _____ to all _____

Formed Elements of Blood

Cell Type	Function
Red Blood Cell	Carry oxygen from the lungs to the rest of the body and return carbon dioxide to the lungs.
White Blood Cell	Protect the body against infection and foreign substances.
Platelet	Help blood clot to stop bleeding.

White blood cells make up a small part of the blood's volume. These help fight _____, _____, and _____ in the blood.

Name _____

Diseases of the Circulatory System

Cardiovascular diseases, especially heart disease and stroke are among the leading causes of death and disability.

High blood pressure _____

Atherosclerosis _____

Has there a heart attack ever? _____

What are the symptoms of a heart attack? _____

Skin	Vision
_____	_____

Stroke _____

Name _____

Blood Vessels

With each heartbeat, blood rushes out of the heart into the _____ blood vessels in a region _____

Arteries _____ Green oxygen-rich blood flows into the arteries. The rest of the _____

Each artery and vein has a valve. These valves change the _____ direction of blood flow.

The largest artery in the _____ is the _____

The largest vein in the _____ is the _____

The arteries branch out into capillaries which are the smallest blood vessels in the body and give _____

The capillaries in the _____ carry oxygen-rich blood to the _____

The _____ carries oxygen-rich blood to the _____

The capillaries in the _____ carry blood to the _____

The _____ carries blood from the _____ to the heart.

Most arteries carry oxygenated blood, and most veins carry deoxygenated blood. The _____ carries blood from the _____ and veins are the exceptions in the rule.

Name _____

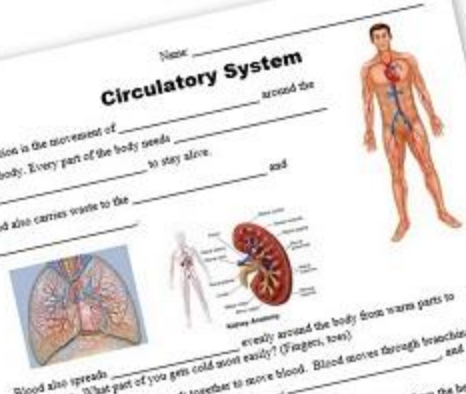
Circulatory System Terms Matching

Term	Definition
1. White Blood Cells	a. Blood vessels that return blood to the heart.
2. Veins	b. The layer of tissue vessels contain risk-increasing plaque.
3. Platelets	c. This carries blood from the heart to the rest of the body.
4. Jugular vein	d. These are the "highways" of the circulatory system, guarding against infection, fighting poisons and attacking bacteria. They change shape from a day to over a year.
5. Red Blood Cells	e. The smallest of the blood vessels. They hold an only one cell thick. It is so narrow that only one red blood cell can pass through them at a time. These vessels bring nutrients and oxygen to the tissues and absorb carbon dioxide and other waste products.
6. Capillaries	f. These cells transport oxygen. They are the most numerous cells in the blood. They get their color from hemoglobin.
7. Carotid artery	g. The first of a series of blood vessels that carry oxygen-rich blood from the left ventricle to the body.
8. Arteries	h. These are small, flexible blood vessels that help blood flow.
9. Aorta	

Name: _____

Circulatory System

Circulation is the movement of _____ around the entire body. Every part of the body needs _____ and _____ to stay alive. Blood also carries waste to the _____ and _____.



Blood also spreads _____ evenly around the body from warm parts to cooler ones. What part of you gets cold most easily? (Fingers, toes)

The heart and blood vessels work together to move blood. Blood moves through branching blood vessels called _____ and _____.

They are pictured as _____ carry blood away from the heart, _____ to the left. _____ bring blood to the heart. They are pictured as _____ connect arteries and veins and carry _____ to all parts of the body.

There are _____ to get all the blood vessels you need. There are _____ than two trillion.

Name: _____

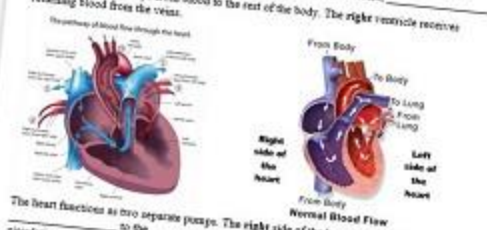
The Heart

The heart is the only muscle that does not need to rest. It is an muscle that works day and night. During normal activity, a heart beats _____ to _____ times per minute. During exercise, it beats much faster.

The heart has four parts or _____ chambers. _____ Blood flows through the top two chambers. _____ This blood enters the lower chambers.

The left ventricle pumps fresh blood to the rest of the body. The right ventricle receives returning blood from the veins.

The pathway of blood flow through the heart:



The heart functions as two separate pumps. The right side of the heart pumps blood from the circulation _____ to the _____ This is known as _____

In the lungs, _____ leaves the blood and oxygen is absorbed. The oxygen-rich blood then flows into the left side of the heart and is pumped to the rest of the body. This is known as _____

Circulatory System - Notebook Pages

Hands-on Activity about your Pulse

Name: _____

Your Pulse

Blood flows between chambers through flaps called _____ valves.

Your heartbeat is the sound of these _____ closing.

Your heart beats _____ times a day!!

Take Your Pulse!

Let's graph your heart rate. Find your pulse by placing your fingers gently on the side of your neck or on your wrist. First, take your pulse while resting. Take your pulse for 15 seconds and multiply by 4. Fill in the graph below under sitting.

• Next, walk slowly around the room for 1 minute. Stop and take your pulse. Fill in the chart below.

• Finally, skip around the room for 1 minute. Stop and take your pulse. Fill in the chart below.

• In the last column, choose your own activity. Do it for one minute, then stop and take your pulse.

Which activity made your heart work hardest?

200				
190				
180				
170				
160				
150				
140				
130				
120				
110				
100				
90				
80				
70				
60				
	Sitting	Walking	Running	Skipping

Have you had your blood pressure taken? This is a measure of the pressure that exerts against the inner blood vessel walls.

the top number - systolic pressure - is the pressure during peak (contraction)

the bottom number - diastolic pressure - is the pressure during the relaxation (in between beats)




Name: _____

Circulatory System Arteries and Veins

Draw in the following arteries and veins on the person below:

- Subclavian vein
- Brachial artery
- Ulnar vein
- Aortic arch
- Renal vein
- Femoral artery
- (Posterior) tibial artery
- (Anterior) jugular vein
- Abdominal vena cava
- Carotid artery
- Pubic artery



Name: _____

Blood Vessels

With each heartbeat, blood surges out of the heart into the main arteries. As these divide, each branch leads to a major _____, such as the _____ or _____. Artery branches then divide many more times sending blood deep into the tissues. The smallest of all blood vessels are the _____.

Each artery and vein has a name. These names change when they branch into smaller arteries or into larger veins.

The largest artery is the _____, which is about 1 1/4 inches (3 cm) across at its largest point!

The largest vein is the inferior _____.

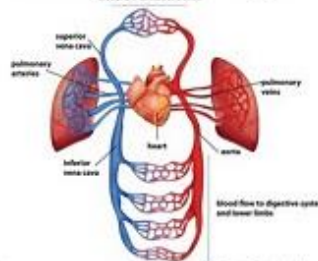
Blood Flow in Human Circulatory System

Blood flow to head and arms

which returns blood from the lower body and legs.

The _____ artery carries low-oxygen blood to the lungs.

Pulmonary _____ returns high-oxygen blood to the heart.




The _____ artery is the main vessel carrying blood to the brain.


The _____ vein carries blood from the head to the heart.

Most arteries carry oxygenated blood, and most veins carry deoxygenated blood; the _____ arteries and veins are the exceptions to this rule.

Arteries

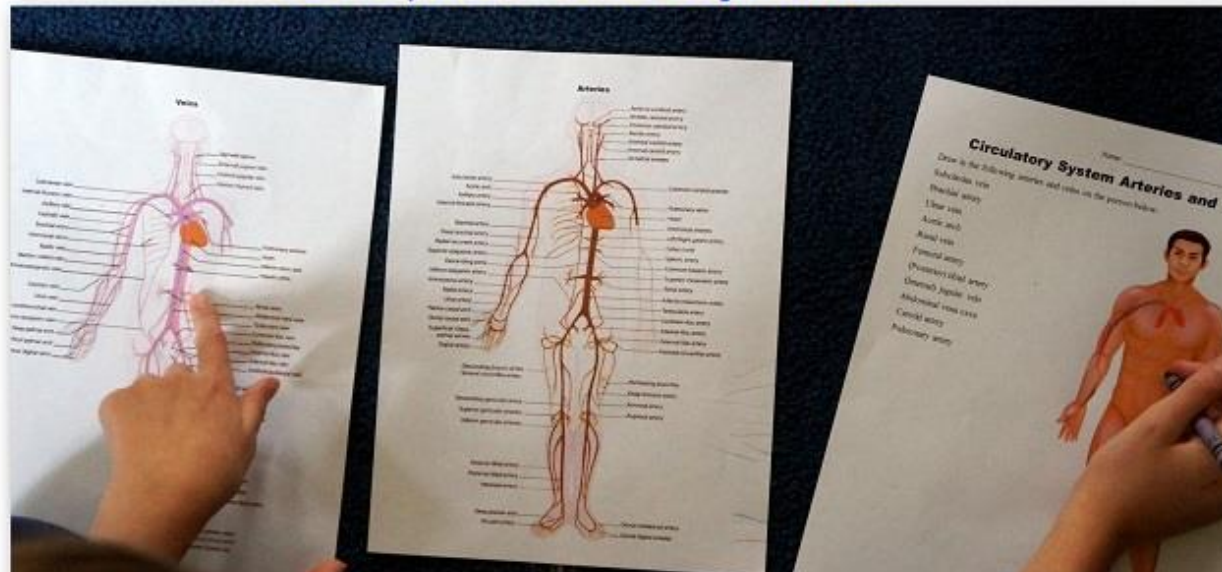


Veins



Circulatory System

Learning about the blood vessels arteries, veins and capillaries





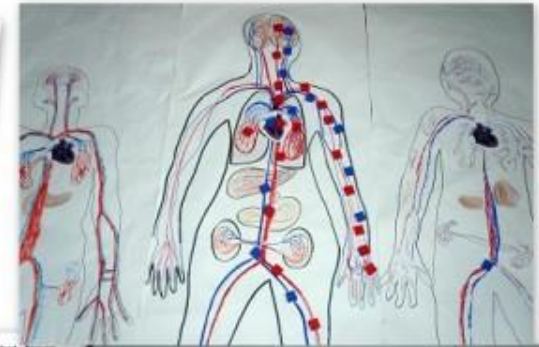
Circulatory System Project:
 Cut a large piece of butcher paper. Lie on top of the paper and have someone trace around your body.
 Using the diagrams on the previous page, create a life-size illustration of a person's circulatory system. Include the heart, lungs, brain, arteries, veins, and capillaries. Your heart should include the 4 chambers and show the basic pathway blood takes.
 Label the major arteries and veins.
 Show the way of capillaries between the arteries and veins.
 These illustrations might be helpful:
 Make sure your drawing is a closed system.

How Blood Flow Through the Heart
 Label: Aorta, Right Atrium, Right Ventricle, Left Atrium, Left Ventricle, Superior Vena Cava, Inferior Vena Cava, Pulmonary Artery, Pulmonary Vein, Coronary Artery, Coronary Vein.

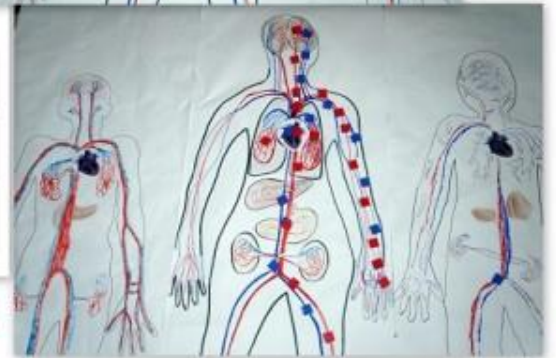
How Blood Flows Through the Heart - Summary
 The pathway of blood flow through the heart is as follows: Superior Vena Cava → Right Atrium → Right Ventricle → Pulmonary Artery → Lungs → Pulmonary Vein → Left Atrium → Left Ventricle → Aorta.

Blood Flow in Human Circulatory System
 The human circulatory system consists of the heart, lungs, and body. Blood flows from the heart to the lungs, then to the body, and back to the heart.

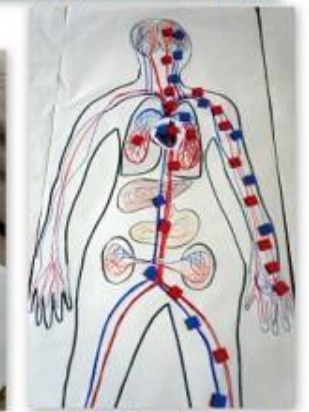
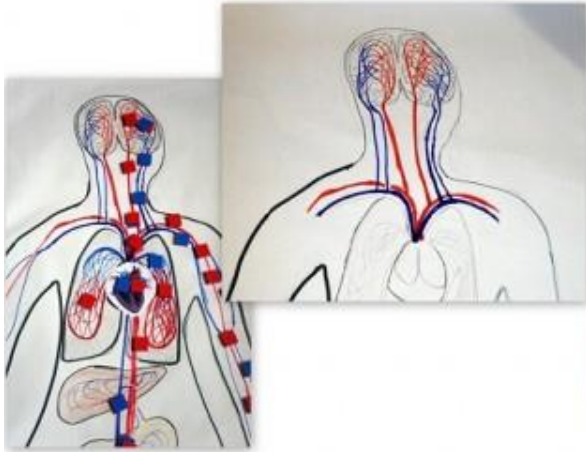
How Blood Flow Through the Heart
 Label: Aorta, Right Atrium, Right Ventricle, Left Atrium, Left Ventricle, Superior Vena Cava, Inferior Vena Cava, Pulmonary Artery, Pulmonary Vein, Coronary Artery, Coronary Vein.



How Blood Flows Through the Heart - Summary
 The pathway of blood flow through the heart is as follows: Superior Vena Cava → Right Atrium → Right Ventricle → Pulmonary Artery → Lungs → Pulmonary Vein → Left Atrium → Left Ventricle → Aorta.



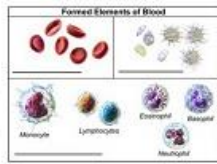
Circulatory System Project





Name: _____
Blood
 About _____ % of human body weight is from blood.
 Adults have about _____ to _____ quarts of blood.

_____ is the liquid component of blood. It carries nutrients, hormones, and proteins throughout the body.



_____ make up 40-50% of the total blood volume. They transport _____ from the _____ to all _____ living tissue and carry away _____.

_____ They carry around an important chemical called _____ which gives blood its red color.

White blood cells make up a small part of the blood's volume. These help fight _____. Some cells called _____ are the first responders for our immune system, seeking out and binding to the protein in foreign bacteria, viruses and fungi. Other cells, monocytes, surround and destroy the alien cells.



What is Blood Made of?



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What's Your Blood Type: Survey Sheet

We are looking about the Occultation system to adjust and you being a survey about blood. We would like to have your participation. We are looking to survey _____ people. Once we get our results we will graph the results and compare them to the national averages.

There are 8 blood types: O+, O-, A+, A-, B+, B-, AB+, AB- (RH+ for including these results in the chart if you don't know to start with, please do RH- (RH- for including these results in the chart if you don't know to start with, please do RH-)

NO NAME NEEDED	Blood Type	Male or Female?	NO NAME NEEDED	Blood Type	Male or Female?	NO NAME NEEDED	Blood Type	Male or Female?
1			11			21		
2			12			22		
3			13			23		
4			14			24		
5			15			25		
6			16			26		
7			17			27		
8			18			28		
9			19			29		
10			20			30		
11			31			32		
12			33			34		
13			35			35		
14			36			36		
15			37			37		
16			38			38		
17			39			39		
18			40			40		
19			41			41		
20			42			42		
21			43			43		
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68			90			90		
69			91			91		
70			92			92		
71			93			93		
72			94			94		
73			95			95		
74			96			96		
75			97			97		
76			98			98		
77			99			99		
78			100			100		

Hands-on Activity Ideas:

Blood Typing Kit

If you are interested, you can purchase a blood-typing kit (affiliate link). Although I know the blood types of my older two, I couldn't remember the blood type of my youngest. She was eager to have do the blood typing kit even though it entailed pricking her finger!

The kit includes a companion chart once your blood has mixed in each of the water droplets. It was pretty straightforward to do!

Blood Type Survey:

We surveyed 10 people about their blood types. We made sure to ask only unrelated people (no parents and _____) to make the results as random as we could.

In the following pages, you can see the results of the survey. You can use the same order for each blood type.

How did your results compare with the national averages?

Here are our results:

What's Your Blood Type

Graph the results of your survey. Also, graph the number of males and females you surveyed.

Gender	O+	O-	A+	A-	B+	B-	AB+	AB-
Male								
Female								
Total								

Blood Type Activities

What's Your Blood Type

Graph the results of your survey on the survey provided. Also, graph the number of males and females you surveyed.

What's Your Blood Type: US Results

O-positive: 38 percent.
 O-negative: 7 percent.
 A-positive: 34 percent.
 A-negative: 6 percent.
 B-positive: 8 percent.
 B-negative: 2 percent.
 AB-positive: 3 percent.
 AB-negative: 1 percent.

Most common blood type in the US: O+
 Least common blood type in the US: AB-

What's Your Blood Type: Survey Results

In this survey we surveyed 10 people were surveyed. Graph the results and compare them to the national averages.

There are 8 blood types: O+, O-, A+, A-, B+, B-, AB+, AB- (RH+ for including these results in the chart if you don't know to start with, please do RH- (RH- for including these results in the chart if you don't know to start with, please do RH-)

NO NAME NEEDED	Blood Type	Male or Female?	NO NAME NEEDED	Blood Type	Male or Female?	NO NAME NEEDED	Blood Type	Male or Female?
1	O+	F	11	O+	M	21	O+	M
2	O-	F	12	O-	F	22	O-	F
3	A+	M	13	A+	M	23	A+	M
4	A-	F	14	A-	F	24	A-	F
5	B+	M	15	B+	M	25	B+	M
6	B-	F	16	B-	F	26	B-	F
7	AB+	M	17	AB+	M	27	AB+	M
8	AB-	F	18	AB-	F	28	AB-	F
9	O+	M	19	O+	M	29	O+	M
10	O-	F	20	O-	F	30	O-	F
11	A+	M	31	A+	M	31	A+	M
12	A-	F	32	A-	F	32	A-	F
13	B+	M	33	B+	M	33	B+	M
14	B-	F	34	B-	F	34	B-	F
15	AB+	M	35	AB+	M	35	AB+	M
16	AB-	F	36	AB-	F	36	AB-	F
17	O+	M	37	O+	M	37	O+	M
18	O-	F	38	O-	F	38	O-	F
19	A+	M	39	A+	M	39	A+	M
20	A-	F	40	A-	F	40	A-	F
21	B+	M	41	B+	M	41	B+	M
22	B-	F	42	B-	F	42	B-	F
23	AB+	M	43	AB+	M	43	AB+	M
24	AB-	F	44	AB-	F	44	AB-	F
25	O+	M	45	O+	M	45	O+	M
26	O-	F	46	O-	F	46	O-	F
27	A+	M	47	A+	M	47	A+	M
28	A-	F	48	A-	F	48	A-	F
29	B+	M	49	B+	M	49	B+	M
30	B-	F	50	B-	F	50	B-	F
31	AB+	M	51	AB+	M	51	AB+	M
32	AB-	F	52	AB-	F	52	AB-	F
33	O+	M	53	O+	M	53	O+	M
34	O-	F	54	O-	F	54	O-	F
35	A+	M	55	A+	M	55	A+	M
36	A-	F	56	A-	F	56	A-	F
37	B+	M	57	B+	M	57	B+	M
38	B-	F	58	B-	F	58	B-	F
39	AB+	M	59	AB+	M	59	AB+	M
40	AB-	F	60	AB-	F	60	AB-	F

What's Your Blood Type: US Results

O-positive: 38 percent.
 O-negative: 7 percent.
 A-positive: 34 percent.
 A-negative: 6 percent.
 B-positive: 8 percent.
 B-negative: 2 percent.
 AB-positive: 3 percent.
 AB-negative: 1 percent.

Most common blood type in the US: O+
 Least common blood type in the US: AB-

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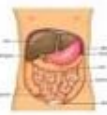
Blood Typing Kit

Cholesterol


Cholesterol is a type of _____ found in your blood.

You _____ makes cholesterol. You also get cholesterol from the foods you eat.


What are some foods that have cholesterol?




Why do we have cholesterol?



Why can cholesterol be bad?



What is LDL cholesterol?



What is HDL cholesterol?

What are Triglycerides?

Diseases of the Circulatory System

Cardiovascular diseases especially heart disease and stroke are among the leading causes of death and disability.

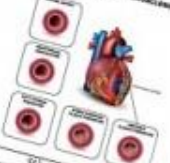

High blood pressure

atherosclerosis

restenosis of arteries/veins

What does a heart attack occur?

What are the symptoms of a heart attack?

Circulatory System Terms Matching

_____ 1. White Blood Cells

_____ 2. Veins

_____ 3. Platelets

_____ 4. Jugular vein

_____ 5. Red Blood Cells

_____ 6. Capillaries

_____ 7. Carotid artery

_____ 8. Arteries

_____ 9. Aorta

a. Blood vessels that return blood to the heart. The larger of these vessels contain valves to prevent blood from going the wrong way.

b. This carries blood from the head to the heart.

c. Large vessels that carry blood from the heart to the tissues of the body.

d. the main vessel carrying blood to the brain.

e. These are the "army" of the circulatory system, guarding against infections, fighting parasites and attacking bacteria. Their lifespan ranges from a day to over a year.

f. The smallest of the blood vessels. Their walls are only one cell thick. It is so narrow that most blood cells must pass through them in single file. These vessels bring nutrients and oxygen to the tissues and absorb carbon dioxide and other waste products.

g. These cells transport oxygen. They are the most numerous cells in the blood. They get their color from hemoglobin.



h. The first of a series of blood vessels that carry oxygen-rich blood from the left ventricle to the body.

i. These are a small, flat bodies in blood that helps blood clot.

Lapbook Notebook Pages - Use scissors to cut out the words and glue them into the notebook. Use a glue stick to glue the words into the notebook. Use a glue stick to glue the words into the notebook.




Circulatory System


Circulatory System






Getting Rid of Waste

Kidney Anatomy





Kidney Excretion



The Respiratory System

Lapbook/Interactive Notebook Pieces



Circulatory System

Consider the two systems of the circulatory system. Every part of the body needs oxygen and nutrients. Blood carries oxygen to the _____ and _____.

Blood also carries waste to the _____ and _____.

Blood also spreads _____ around the body. How does oxygen get to the _____? _____.

The heart and blood vessels work together to move blood. Blood carries oxygen and _____ to the _____.

They are pumped to _____.

_____ taking blood to the brain. They are _____.

_____ return oxygen and nutrients and carry _____ to the _____.

If you were to get all the blood vessels used to fill the world, they would wrap around _____.

The Heart

The heart is the only muscle that never rest and it is _____.

The heart has _____.

Blood flows through the top two chambers, _____.

The left ventricle pumps blood to the rest of the body. The right ventricle pumps blood to the _____.

The heart has four _____.

The right side of the heart pumps blood to the _____.

The left side of the heart pumps blood to the _____.

In the lungs, _____.

Blood flows through the top two chambers, _____.

The left ventricle pumps blood to the rest of the body. The right ventricle pumps blood to the _____.

Blood Vessels

Each body cell needs _____.

Blood carries _____.

The right side of the heart pumps blood to the _____.

The left side of the heart pumps blood to the _____.

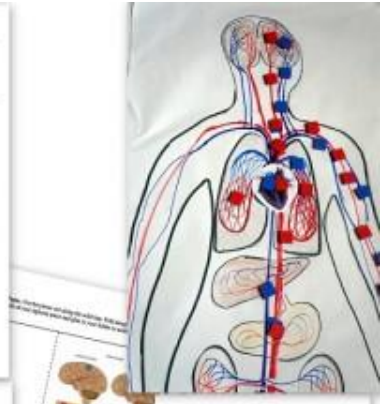
Blood flow in human circulatory system _____.

The right side of the heart pumps blood to the _____.

The left side of the heart pumps blood to the _____.

Circulatory System Project

On a separate sheet of paper, draw a picture of the circulatory system. Label the heart, lungs, and body. Use red and blue ink to show the flow of blood. Include the heart, lungs, and body. Use red and blue ink to show the flow of blood. Include the heart, lungs, and body.



Circulatory System

The right side of the heart pumps the blood to the _____.

The left side of the heart pumps the blood to the _____.

Blood flow in human circulatory system _____.

The right side of the heart pumps blood to the _____.

The left side of the heart pumps blood to the _____.

Blood

_____ % of human body weight is blood.

Adults have about _____ quarts of blood.

_____ is the liquid component of blood. It carries oxygen, nutrients, and proteins throughout the body.

up to 50% of the total blood volume.

They transport _____.

_____.

_____.

_____.

What's Your Blood Type? Surety Results

_____.

Antigen	Antibody	Group
A	B	A
B	A	B
A & B	A & B	AB
None	None	O

Getting Rid of Waste

_____.

_____.

_____.

_____.

Circulatory System Terms Matching

_____.

_____.

_____.

_____.

_____.

_____.

_____.

Circulatory System Arteries and Veins

_____.

_____.

_____.

_____.

_____.



Circulatory System Packet

40+ pages

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Cholesterol

_____.

_____.

_____.

_____.

Diseases of the Circulatory System

_____.

_____.

_____.

_____.

The Respiratory System

_____.

_____.

_____.

_____.

Blood Typing Kit

_____.

_____.

_____.

_____.