

Circulatory System Packet

Circulatory System

Packet

40+ pages

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The packet includes the following components:

- Circulatory System Diagrams:** Detailed anatomical diagrams of the human circulatory system, showing the heart, blood vessels, lungs, kidneys, and brain.
- Heart Diagrams:** Various diagrams of the heart, including its chambers, valves, and major blood vessels.
- Blood Vessel Diagrams:** Diagrams of arteries, veins, and capillaries, showing how they transport oxygen and nutrients throughout the body.
- Blood Flow Diagrams:** Diagrams illustrating the flow of blood from the heart through the body and back to the heart.
- Blood Types:** Worksheets for blood type surveys and matching exercises.
- Cholesterol:** Information and diagrams related to cholesterol levels and heart health.
- Diseases of the Circulatory System:** Information and diagrams related to various diseases of the heart and blood vessels.
- Kidney Anatomy:** Diagrams and information about the kidneys and their role in the circulatory system.
- Respiratory System:** Diagrams and information related to the respiratory system's interaction with the circulatory system.
- Arteries and Veins:** Diagrams comparing the structures and functions of arteries and veins.
- Getting Rid of Waste:** Diagrams and information about how the circulatory system removes waste products from the body.
- Blood Vessel Diagrams:** Detailed diagrams of the venous and arterial systems.
- Blood Typing Kit:** A worksheet for a blood typing kit, showing blood samples and matching them to ABO and Rh factors.
- Charts and Graphs:** Charts showing blood type survey results and cholesterol levels.
- Activity Photos:** Photos of children working on projects like a life-size human heart and a blood vessel project.

Circulatory System

Packet

Circulatory System

Name _____

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

Blood also carries waste to the _____ and _____.

Blood also spreads _____.

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

They are pictures in _____.

Blood to the muscles goes to _____.

If you were to get sick, you would need _____.

The Heart

Name _____

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

The heart has four parts or _____, which evenly spread the chambers. Then blood enters the lower chambers, _____.

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

The pulse of blood through the heart is called _____.

Normal Blood Flow

The heart functions as two separate pumps. The right side of the heart pumps blood to the _____, then to the _____.

In the lungs, _____ 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 _____.

Diagrams of the heart and lungs.

Your Pulse

Name _____

Blood flows through the body at a rate called _____.

Your heartbeat is the sound of blood flowing.

Your heart beats _____ times a day!

Take Your Pulse!

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

- Rest, walk slowly around the room for 1 minute. Stop and take your pulse. Fill in the chart below.
- Run around the room for 1 minute. Stop and take your pulse. Fill in the chart below.
- Finally, sleep around the room for 1 minute. Stop and take your pulse. Fill in the chart below.

Which activity made your heart beat faster?

| | | | | | | | | | | | | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 100 | 105 | 110 | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 | |
| Minutes | 100 | 105 | 110 | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 |

With each heartbeat, blood moves out of the heart via the _____ and back into the _____.

When reading blood deep into the tissues, the amount of oxygen available to the body _____.

Arteries and veins have a name. These names change when they branch off or come together.

The largest artery in the body is the _____, which receives blood from the heart.

The largest vein in the body is the _____, which returns blood to the heart.

Arteries carry oxygenated blood to the body, while veins carry deoxygenated blood from the body.

Capillaries are tiny blood vessels that connect arteries and veins. They are the smallest blood vessels in the body.

Veins carry deoxygenated blood back to the heart.

The _____ carries blood from the heart to the brain.

The _____ carries blood from the brain to the heart.

Blood Vessels

Name _____

How many types of blood vessels are there? _____

How many types of blood vessels are there? _____

What are the symptoms of a heart attack?

| | |
|-------|----------|
| Signs | Symptoms |
| _____ | _____ |

Blood

Name _____

About _____ % of human body weight is from blood, and protein throughout the body.

Adults have about _____ g of blood.

White blood cells make up a small part of the blood's volume. These help fight off bacteria and viruses in the blood.

Red blood cells are an important chemical called hemoglobin, which gives blood its red color.

Platelets are small, irregular shapes that stick together to form a clot when a blood vessel is injured.

Clotting chemicals at the site of a cut allow a blood vessel to clot and stop bleeding.

When a blood vessel is cut, it can quickly clot. Clotting chemicals at the site of a cut allow a blood vessel to clot and stop bleeding.

Platelets release chemicals that stimulate them to stick together to form a clot when a blood vessel is injured.

White blood cells that return blood to the heart. Large blood vessels carrying blood away from the heart are called _____.

These large vessels carry blood to the head and body. They are the "arteries" of the circulatory system, providing oxygen and nutrients to the body.

When a blood vessel is cut, it can quickly clot. Clotting chemicals at the site of a cut allow a blood vessel to clot and stop bleeding.

These vessels carry nutrients and oxygen to the heart and brain, as well as carbon dioxide and other waste products.

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

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

These are a small, hollow tube that helps blood circulate.

Circulatory System Terms Matching

1. White Blood Cells
2. Veins
3. Platelets
4. Jugular vein
5. Red Blood Cells
6. Capillaries
7. Cervical artery
8. Arteries
9. Aorta

a. Blood vessels that return blood to the heart. Large blood vessels carrying blood away from the heart are called _____.

b. These vessels carry blood from the head to the body. They are the "arteries" of the circulatory system, providing oxygen and nutrients to the body.

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

d. The main vessel carrying blood to the head and body. It is the largest artery in the body.

e. These are the "tiny" of the circulatory system, providing oxygen and nutrients to the body.

f. These vessels carry oxygenated blood from the heart to the body.

g. These vessels carry deoxygenated blood from the body to the heart.

h. These vessels carry oxygenated blood from the heart to the body.

i. These vessels carry deoxygenated blood from the body to the heart.

j. These are a small, hollow tube that helps blood circulate.

Diseases of the Circulatory System

Name _____

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

high blood pressure

atherosclerosis

When does a heart attack occur?

Cholesterol

Name _____

Cholesterol is a type of _____ found in your blood. It is a waxy substance that can clog arteries. Why do we have cholesterol?

Why can cholesterol be bad?

Name _____

Circulatory System

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

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 _____.

They are pictured in _____ carrying blood away from the heart. They are pictured in _____ carrying blood to the heart. They are _____.

Arteries and veins connect arteries and veins and carry _____ to all parts of the body.

If you were to put all the blood vessels end-to-end, they would stretch Earth more than two times!

The Heart

The heart is the only muscle that does not need to rest. It is a _____ 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 _____. Blood flows through the top two chambers, _____. Then 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 heart functions as two separate pumps. The right side of the heart pumps blood from the _____ 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 beat _____ 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 after writing.

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

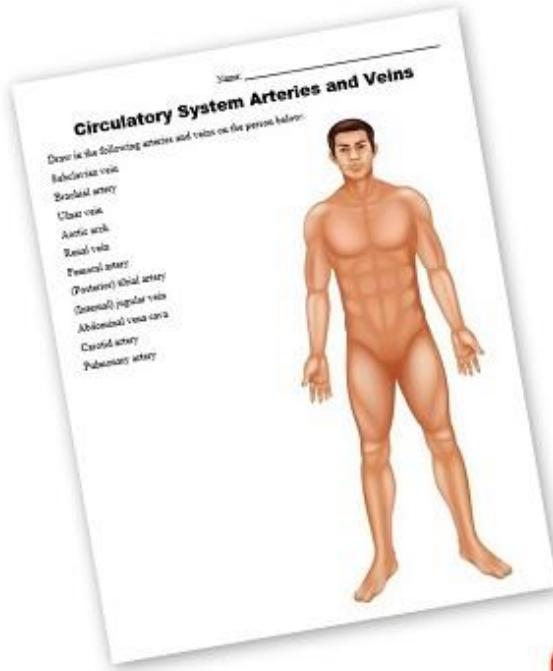
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| 190 | | | | |
| 180 | | | | |
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| 160 | | | | |
| 150 | | | | |
| 140 | | | | |
| 130 | | | | |
| 120 | | | | |
| 110 | | | | |
| 100 | | | | |
| 90 | | | | |
| 80 | | | | |
| 70 | | | | |
| 60 | | | | |
| | 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 (is between beats)





Name: _____

Blood Vessels

With each heartbeat, blood surges out of the heart into the main arteries. As these divide, each branch heads 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 ¼ inches (3 cm) across at its largest point!

The largest vein is the inferior _____ which returns blood from the lower body and legs.

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

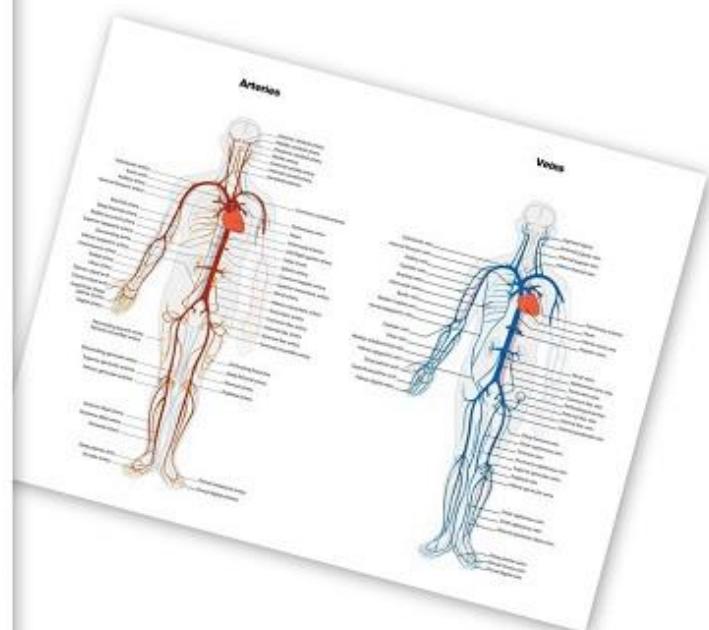
Pulmonary _____ returns high-oxygen blood to the heart.

Blood Flow in Human Circulatory System

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

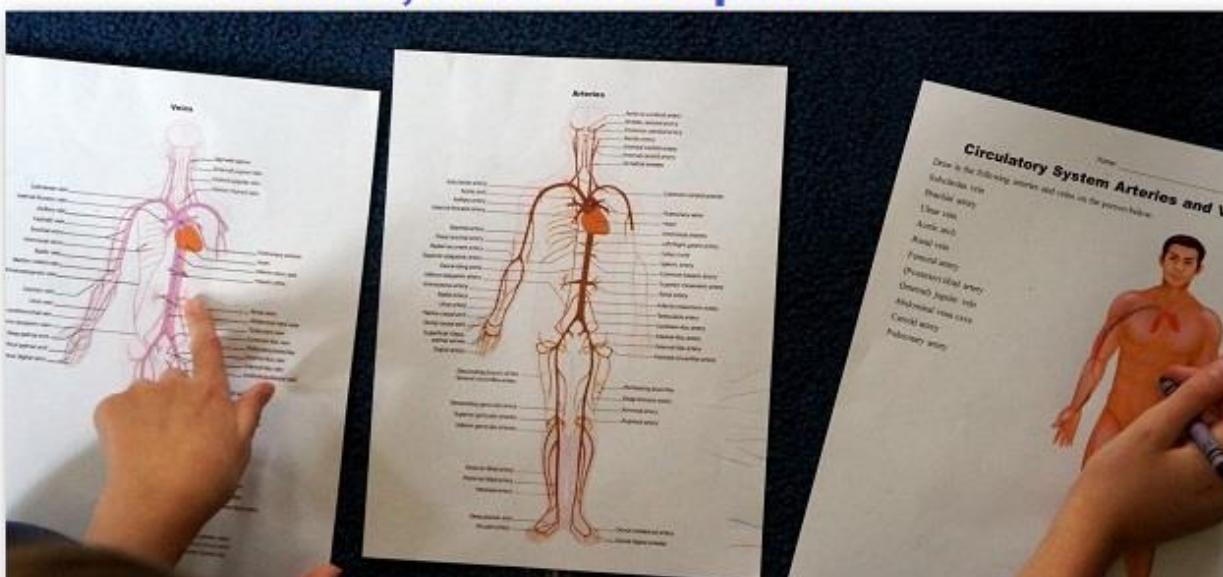
The _____ vein carries blood from the head to the heart.

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



Circulatory System

Learning about the blood vessels arteries, veins and capillaries





Circulatory System Project:

Get 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. The heart should include the 4 chambers and show the basic pathway blood takes.

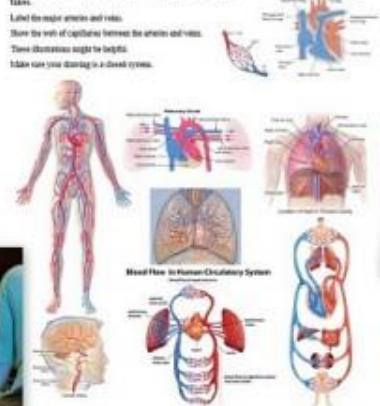
Labels:

Label the major arteries and veins.

Show the web of capillaries between the arteries and veins.

Three substances might be helpful:

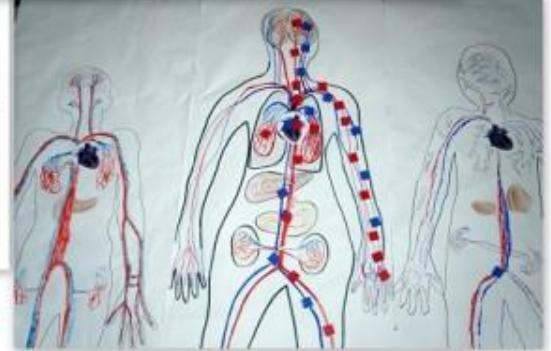
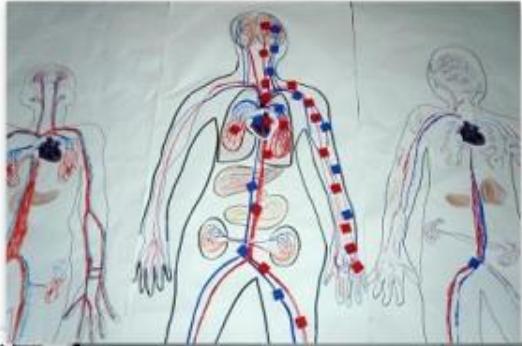
Take care your drawing is a closed system.



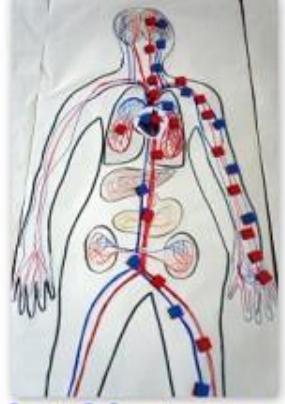
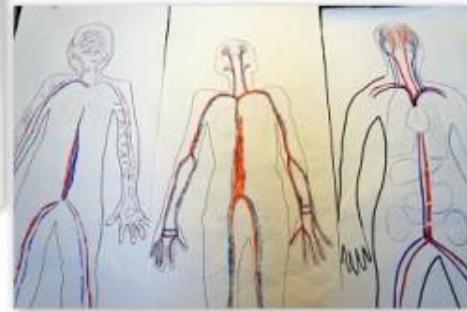
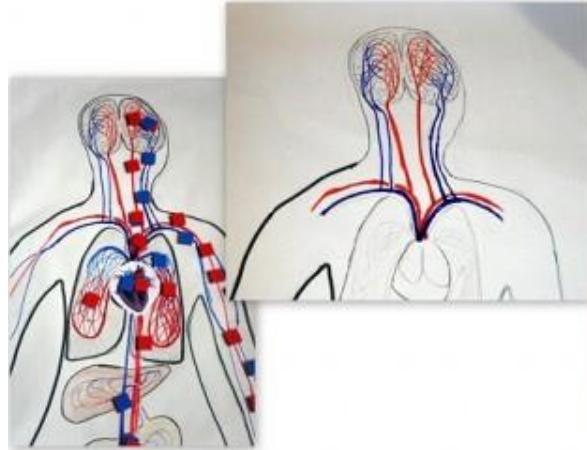
How Blood Flow Through the Heart



Date _____
Name _____
Lesson 2: Arteries & Veins; L. Arteries, L. Veins, 2. Arteries
Estimate Total 1 hr for the project!



Circulatory System Project



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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.

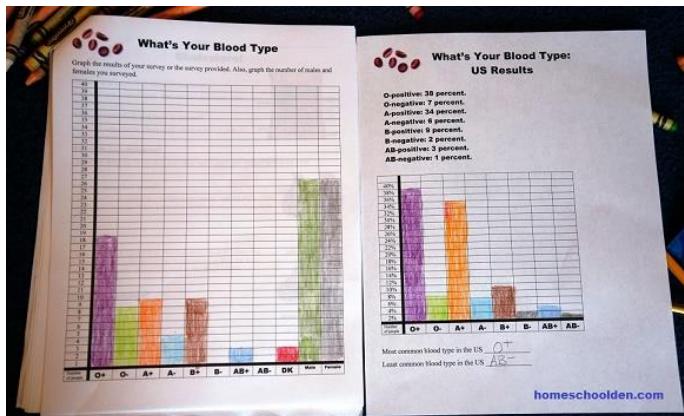
White blood cells make up a small part of the blood's volume. These help fight _____. Some cells called _____ are the first responders for our immune system, seeking out and binding to the proteins in foreign bacteria, viruses and fungi. Other cells, monocytes, surround and destroy the alien cells.



What is Blood Made of?



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What's Your Blood Type: Survey Sheet

We are learning about the circulatory system so I created this survey about blood. We would love to know your results! We compare the national averages. If you don't know your blood type, A+, B+, AB+, or O+, there are including directions at the bottom of the page.

| NAME | NAME NEEDED | BLOOD TYPE | MALE OR FEMALE | NO NAME NEEDED | BLOOD TYPE | MALE OR FEMALE |
|------|----------------|---------------|----------------------|----------------------|---------------|----------------------|
| L | | O+ | M | 1 | O+ | M |
| | | O- | F | 2 | O- | F |
| | | A+ | M | 3 | A+ | M |
| | | A- | F | 4 | A- | F |
| | | B+ | M | 5 | B+ | M |
| | | B- | F | 6 | B- | F |
| | | AB+ | M | 7 | AB+ | M |
| | | AB- | F | 8 | AB- | F |
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What's Your Blood Type: Survey Results

At this survey 50 people about their blood types. We made sure to ask only unrelated people so we could make the results as random as we could.

In the following pages are the results of the survey. You can use these to make your own bar graphs.

Once you have your results, add up the totals.

Then, have your students graph the results, using a different color for each column.

Give them the US results and have them graph those results as well, using the same color for each blood type.

How did your results compare with the national averages?

Here are our results:

| Blood Type | Count |
|------------|-------|
| O+ | 19 |
| O- | 3 |
| A+ | 16 |
| A- | 3 |
| B+ | 6 |
| B- | 1 |
| AB+ | 2 |
| AB- | 1 |
| DK | 1 |

Male Females

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 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:

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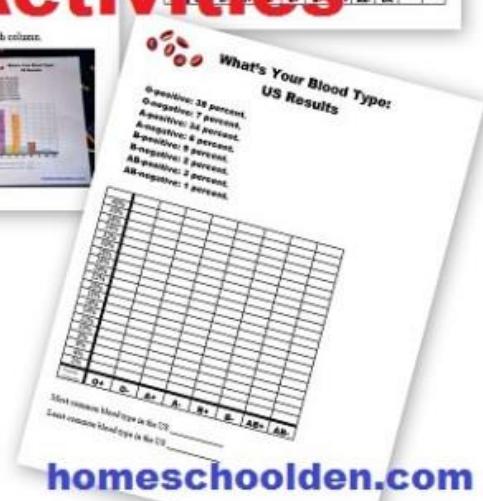
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How did your results compare with the national averages?

Here are our results:





Blood Typing Kit

Circulatory System

Cholesterol

Name _____

Cholesterol is a type of _____ found in your blood. You _____ makes cholesterol. You can 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

Name _____

Cardiovascular diseases especially heart disease and stroke are among the leading causes of death and disability. High blood pressure, atherosclerosis, and stroke are the three main types of cardiovascular diseases.

What are the symptoms of a heart attack?

What does a heart attack occur?

What are the symptoms of a stroke?

What are the symptoms of a heart attack?

Circulatory System Terms Matching

Name _____

| | |
|----------------------|--|
| 1. White Blood Cells | a. Blood vessels that return blood to the heart. The larger of these vessels contain valves to prevent blood from going the wrong way. |
| 2. Veins | b. This carries blood from the head to the heart. |
| 3. Platelets | c. Large vessels that carry blood away from the heart to the tissues of the body. |
| 4. Jugular vein | d. The main vessel carrying blood to the brain. |
| 5. Red Blood Cells | e. These are the "wires" of the circulatory system, guarding against infection, fighting parasites and attacking bacteria. Their lifespan ranges from a day to over a year. |
| 6. Capillaries | 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 tissue and absorb carbon dioxide and other waste products. |
| 7. Carotid artery | g. These cells transport oxygen. They are the most numerous cells in the blood. They get their color from hemoglobin. |
| 8. Arteries | h. The first of a series of blood vessels that carry oxygen-rich blood from the left ventricle to the body. |
| 9. Aorta | i. These are small, the bodies in blood that helps blood clot. |

Lapbook/Interactive Notebook Pieces

Lapbook/Interactive Notebook Pages - For students to use when working on their lapbook or interactive notebook. There are 10 pieces included in this pack.

Circulatory System Packet

40+ pages

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