Super-Journal Week 1:3

Every night, you should be reading at least 30 minutes of whatever book you have checked out from your assigned reading list. Tape or glue (but do not staple) this sheet into your Super-Journal on the left-side page. Fill in the table below *every day* by recording the required data.

Day	Title	Start Pg.	End Pg.	Parent Sign.
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

On the right-side page of your Super-Journal, answer two of the questions below throughout the week. Be sure that the questions you choose to answer go with the appropriate type of book (Fiction or Nonfiction). The Super-Journal is due on the first day after the weekend (usually Monday). To earn credit for your journal entry, you *must* respond in at least five complete sentences per response and use **specific evidence from the text to support your claim** based on what you've read this week.

FICTION

1. What conflict or problem did you find in your reading?
2. Summarize what has happened so far in the story.
3. How did the characters solve the problem?

NONFICTION

4. What is the big idea the author has communicated in the text so far?
5. Write a summary of what you learned from the text this week.

RL.1.2/RI.1.2

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RL.1.2/RI.1.2

Gas Exchange

Cross-Curricular Focus: Life Science

Name: _____

Did you know that your body has its very own gas exchange program that runs 24 hours a day? It's called the **respiratory system**. It is one of your body's vital systems, which means you could not live without it. Every time you take a breath, oxygen enters your lungs and is carried around to all the body's cells by the circulatory system. Waste products, like carbon dioxide gas, are picked up by the circulatory system as well. Carbon dioxide is dropped off at the lungs so you can breathe it out.

The respiratory and circulatory systems need each other. The respiratory system brings in oxygen and pushes out carbon dioxide. The circulatory system transports these gases where they need to go. The two systems work together to make sure that your body gets what it needs to survive. That is why we say that the respiratory and circulatory systems are **interdependent**. They need each other.

The respiratory system is not just your lungs. It also includes your nose, mouth, and the air passageways that connect them to your lungs. After you inhale air through your nose and mouth, it enters a tube in your throat called the trachea. Right before the trachea gets to your lungs, it splits into two smaller tubes called the bronchi. The deeper you go into your lungs, the smaller and smaller the tubes become as they keep dividing in two. The very smallest tubes end with tiny sacs. These sacs look like grape clusters under the microscope. These are called alveoli. They diffuse oxygen into the blood and receive carbon dioxide being returned to the lungs from the blood. Carbon dioxide travels out of your body when you exhale.

Your body has a special way of making sure that you can get the oxygen that you need when you breathe. Your chest actually changes size when you inhale. You have muscles that are attached to your ribs. These muscles pull up when you inhale. Your diaphragm, a large muscle under your lungs, pulls down. This gives plenty of room so you can get the air you need.

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What is the purpose of the circulatory system?

_____

_____

2) Identify the parts of the respiratory system.

_____

_____

3) What is the function of the alveoli?

_____

_____

4) How does the body get rid of carbon dioxide?

_____

_____

5) How does your body make room for a deep breath? _____

_____

It Circulates

Cross-Curricular Focus: Life Science

The **circulatory** system is the transport system of the human body. Your body is like a map filled with passageways of different sizes that are filled with blood. **Arteries** and **veins** are the body's largest blood vessels. Arteries carry oxygen-rich blood from the lungs and through the heart so it can be delivered to all the cells of the body. Veins carry carbon dioxide waste back to the heart and into the lungs so the carbon dioxide can be exhaled. **Capillaries** are the tiniest blood vessels. They are especially helpful in the lungs, where the gas exchanges take place in air sacs called alveoli. Under a microscope, alveoli look like grape clusters.

At the very center of the circulatory system is the **heart**. Your heart is about the same size as your fist, but it is made of muscle. Its job is to pump your blood through all those blood vessels. It never stops working, even when you are sleeping. It is the strongest muscle in your body. Your heart has four chambers, or spaces, inside it. They are the left and right **ventricles**, and the left and right atriums. Each chamber is separated by a valve that allows blood flow in only one direction. The opening and closing of the valves is what you can hear through a stethoscope when you visit the doctor. The blood being pushed through the valves is what you feel as your pulse.

Blood looks like a simple red liquid when you have a cut or a scrape. That's only because your eyes cannot see what is going on inside the blood at the microscopic level. The reason blood looks red to us is because it contains an iron-rich substance called hemoglobin. Hemoglobin allows blood to hold on to oxygen and carry it around the body. Hemoglobin is found in disc-shaped cells called red blood cells. There are also white blood cells in our blood. They are larger than red blood cells and are important because they help us fight disease. Platelets, another kind of cell found in our blood, help us form scabs when we are injured so we don't lose too much blood. All of these cells float in a liquid called plasma. Plasma also carries sugar to cells and waste products away from cells.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What is the function of the white blood cells?

_____

_____

2) How are arteries and veins alike?

_____

_____

3) Based on other information in the passage, what gases are being exchanged in the alveoli?

_____

_____

4) What is the main idea of this passage?

_____

_____

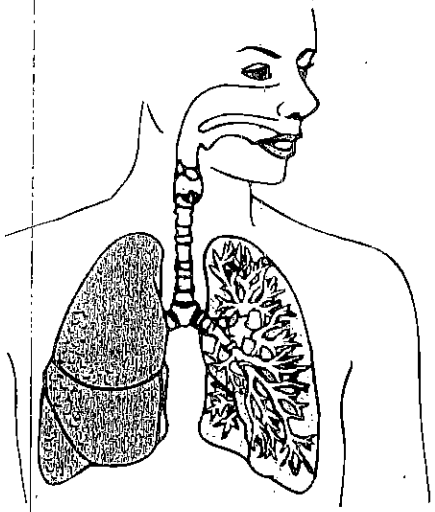
5) What does hemoglobin do?

_____

_____

A Breathtaking System

An adult's lungs can hold five quarts of air! How large a balloon do you think it would take to hold that much air?



When you breathe in air through your nose and mouth, you get oxygen. You need oxygen to live. The air goes down your *windpipe* and into your lungs. Your lungs absorb oxygen from the air. The oxygen travels in the blood to every part of the body.

Your body uses oxygen to burn food and to give you energy. You make carbon dioxide when you do this. The blood carries the carbon dioxide back to the lungs. Then it is breathed out. This whole process is called *respiration.*

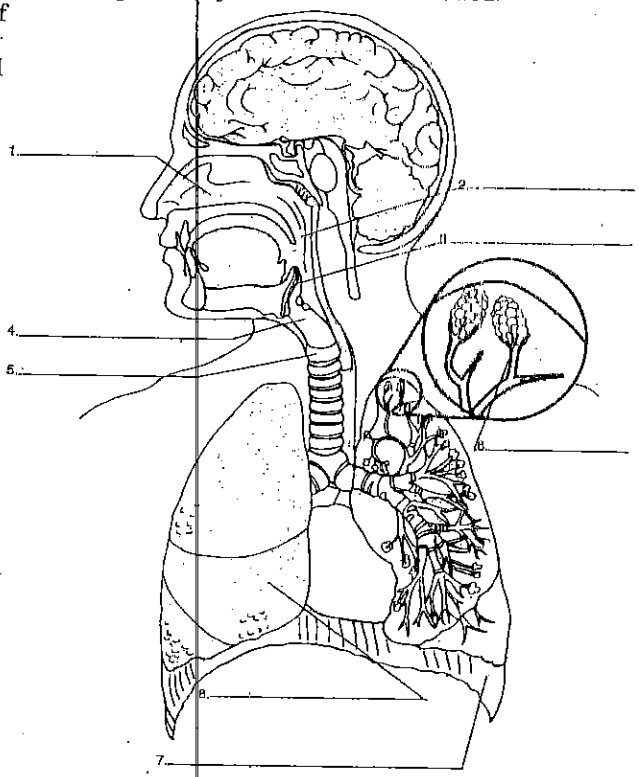
Directions: Use one word from the text to complete the statements.

1. You need _____ to live.
2. You take in air through the nose or the _____.
3. The air you breathe in goes down your _____ and into your lungs.
4. The words in the text that mean "to inhale" are _____.
5. The oxygen you breathe in travels in the _____ to every part of your body.
6. When you breathe in, you take in _____.
7. When you breathe out, you get rid of _____.
8. Your body uses oxygen to burn _____.
9. The blood carries the carbon dioxide back to the lungs, and it is _____ out.
10. The process of breathing in and out is called _____.

A Breathtaking System

Directions: Use the number code to label and color the diagram of the respiratory system.

1. You take in air through your **nasal passage.** Color it green.
2. The **pharynx** connects your mouth and nasal passages. Color it yellow.
3. The **epiglottis** is the flap of cartilage behind your tongue. It helps close the opening to your windpipe when you swallow. Color it red.
4. The **larynx** is made of muscle and cartilage. It is where your **vocal cords** are located. Color it brown.
5. The **trachea** is a tube that serves as the main passageway for air to and from the lungs. Color it purple.
6. The **alveoli** are tiny air sacs at the ends of the **bronchioles.** Color them red.
7. The **diaphragm** is a wall of muscle and connecting tissue. Color it gray.
8. The **lungs** absorb oxygen from the air you breathe. Color the left lung blue.



Research: Your right and left lungs are not identical. Find out how they are different.

Bonus: Sit quietly and listen to your breathing. Count how many times you breathe in and out each minute. Stand up and do 25 jumping jacks. Then count your breaths again. How does exercise affect breathing? Write a true statement about this.

The Circulatory System

Use the words in the box to fill in the blanks.

veins	transport	circulatory	blood
arteries	oxygen	lungs	heart
nutrients	energy	carbon dioxide	pumped
capillaries	dark	bright	intestine
away	heat	to	atmosphere

All animals need to _____ materials around to the different parts of their body. This is the job of the _____ system. The circulatory system consists of a liquid called _____, a pump called the _____ and a series of vessels called _____ and _____.

One thing that must be transported around is a gas called _____. Oxygen enters the blood through the _____. It is then _____ through the heart and around the body where it is used along with food to make _____. The body produces another gas called _____, which is a waste product. This gas is carried back to the heart and then to the lungs where it is released back into the _____.

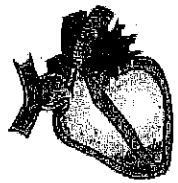
The vessels that transport blood _____ from the heart are called arteries. The blood in arteries is _____ red because it is rich in oxygen. The vessels that transport blood _____ the heart are called veins. The blood in veins is _____ red because it is low in oxygen. _____ are small vessels that join the arteries and veins.

_____ from food are also transported around the body by the circulatory system. They enter the blood from the small _____. The circulatory system also helps to regulate temperature by transporting _____ around the body.

The Circulatory System

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

Find the circulatory system words below in the grid to the left.

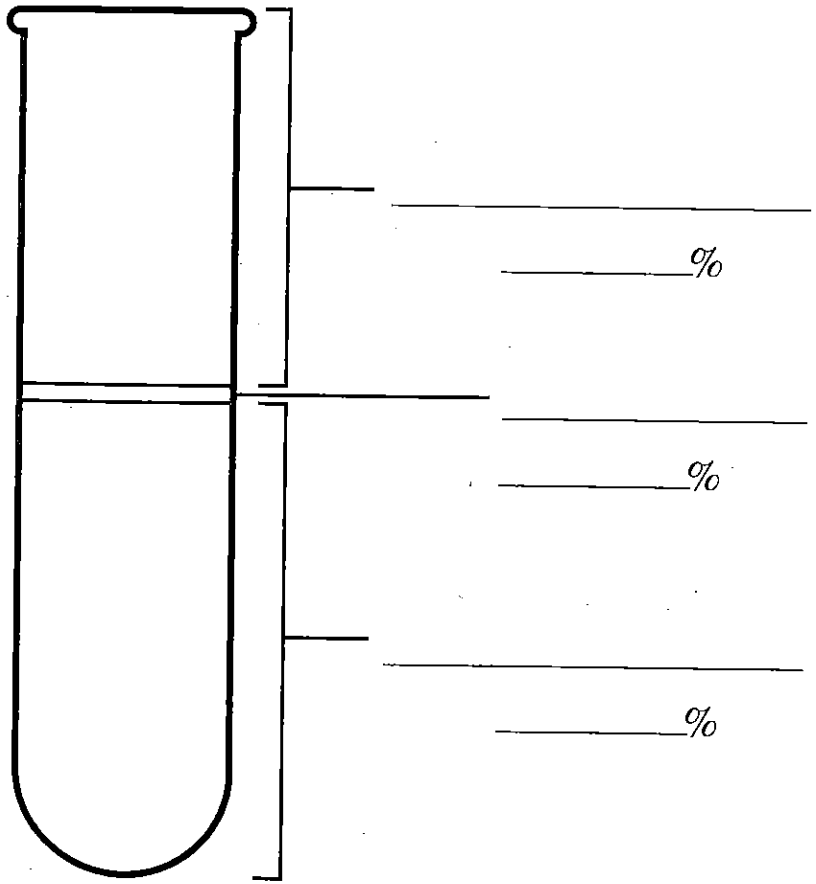


aorta	carbon dioxide	lungs	transport
artery	circulate	nutrients	valve
blood	dark red	oxygen	vein
bright red	four chambers	pump	water
capillary	heart	red blood cells	white blood cells

Oxygen And Nutrient Carrier

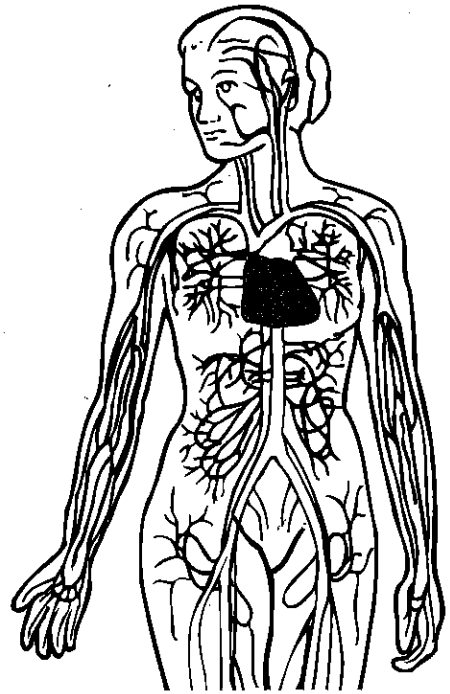
In a laboratory test tube, blood can be separated into its parts. The heaviest part of the blood, which is also the largest amount, is at the bottom. The next heaviest part is above that, and the lightest part is on the top.

Directions: Can you tell from the text which part is the red blood cells? Color the red blood cells red. Leave the part that shows the white blood cells white, and color the plasma yellow. Label each part.



A Busy Pump

There are approximately nine pints of blood circulating through your body.



If your heart stopped beating, you would die. Why? Because your heart pumps blood full of oxygen and food to your body's cells. You cannot live without oxygen and food.

Your heart is a hollow muscle. It's about the size of your fist. It weighs about nine ounces. The heart consists of four chambers—two thin-walled *atria* (*auricles*) and two powerful, muscled *ventricles*.

The heart works like two pumps with alternating rhythms. The right side of the heart consists of the right atrium and ventricle. The right side receives blood from the great veins known as the *inferior* and *superior venae cavae* and pumps blood to the lungs. As the blood passes through the lungs, it takes on oxygen and gives up carbon dioxide. The left side of the heart receives blood full of oxygen from the lungs and pumps it through the *aorta* into the arteries.

Directions: Use words from the text to complete the statements.

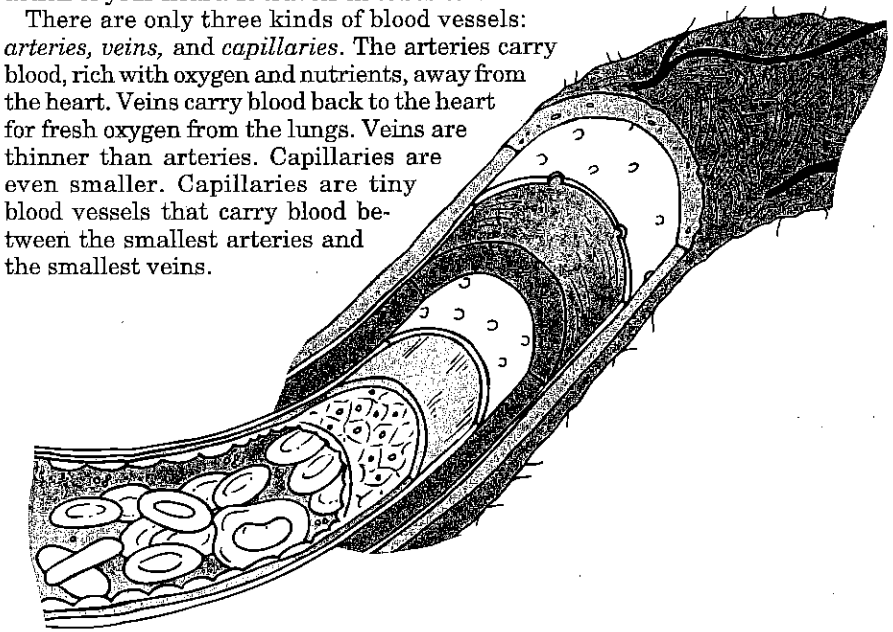
1. Your heart is a _____ muscle.
2. Your heart is about the size of your _____.
3. Your heart weighs about _____.
4. You have about _____ pints of blood circulating in your body.
5. Your heart pumps blood full of oxygen and _____ to the body's cells.

Tubes For Carrying Blood

If your blood vessels were laid end to end, they would stretch around the equator 2 1/2 times!

Blood is pushed through the circulatory system by the pumping action of your heart. It travels in tubes called *blood vessels*.

There are only three kinds of blood vessels: *arteries, veins,* and *capillaries*. The arteries carry blood, rich with oxygen and nutrients, away from the heart. Veins carry blood back to the heart for fresh oxygen from the lungs. Veins are thinner than arteries. Capillaries are even smaller. Capillaries are tiny blood vessels that carry blood between the smallest arteries and the smallest veins.



Directions: Write T for true or F for false before each statement.

_____1. Blood is propelled through the body by the pumping action of the heart.

_____2. There are three kinds of blood vessels: arteries, veins, and capillaries.

_____3. Arteries carry blood that is rich with carbon dioxide away from the heart.

_____4. Capillaries are the largest blood vessels.

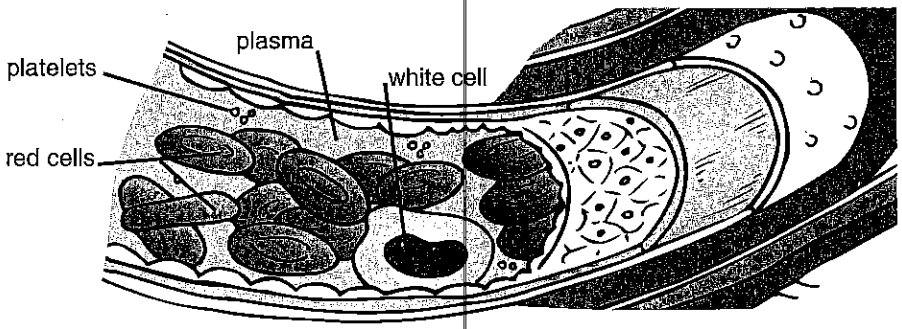
_____5. Veins are wider than arteries.

Oxygen And Nutrient Carrier

Your blood cells rush around the body faster than race cars at the Indianapolis 500! The heart pumps blood so fast that it takes only a minute for each blood cell to travel all the way around your body.

Blood consists of *red cells, white cells, platelets,* and *plasma*. Each part of your blood has a specialized job. Your *red blood cells* are disc-shaped and carry oxygen to all parts of your body. The *white blood cells* fight disease. Some white blood cells are able to destroy bacteria and other foreign particles in your body. Tiny fragments called *platelets* are important in blood clotting. Platelets rupture and release enzymes that promote blood clotting.

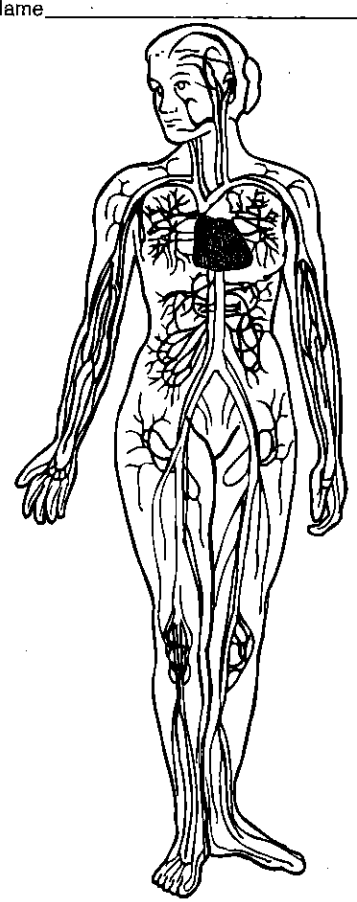
Blood is made up of about 55% plasma, 43% red blood cells, and 2% white blood cells. *Plasma* is the fluid part of blood. It is yellowish and about 90% water. You have about nine pints of blood in your body.



Directions: Use a number from the text to answer each question, or research to find the answer for each question.

1. What percentage of your blood is plasma?_____
2. What percentage of your blood is white blood cells?_____
3. What percentage of blood plasma is water?_____
4. What percentage of your blood works to carry oxygen throughout your body?

   _____
5. What percentage of plasma is not water?_____



An Efficient System

When you reach adulthood, your heart will beat more than 100,000 times each day!

The *circulatory system* has two important jobs. It moves blood and regulates the temperature of your body. The circulatory system—which is made up of your heart, blood vessels, and blood—carries nutrients, oxygen, antibodies, and hormones to the cells of your body. The heart is the pump that keeps your blood moving through the blood vessels. On its journey, blood picks up oxygen from the lungs and nutrients from the digestive system.

Because you are a warm-blooded animal, your body has a fairly steady body temperature. Your circulatory system helps maintain this constant temperature. Warmer blood from the center of your body is brought to the surface to be cooled. The circulatory system does all of this work with about four to five quarts of blood.

Directions: Use words or short phrases to answer the questions.

1. Name the system that carries blood throughout the body._____

2. List three things that make up the circulatory system._____

_____

3. Name two functions of the circulatory system._____

_____

An Efficient System

Directions: Use words or short phrases to answer the questions.

1. Name the body parts that carry blood._____

_____

2. The blood picks up oxygen from which body parts?_____

_____

3. What does the blood pick up from the digestive system?_____

_____

4. Where does the blood take oxygen and nutrients?_____

_____

5. How is warmer blood from the center of your body cooled?_____

_____

Research: Who is Barney Clark? What courageous thing did he do that advanced medical study of the heart?

Bonus: To find out how many times per minute your heart beats, take your pulse. (Place two fingertips of your right hand on the underside of your left wrist just below the base of your thumb.) Sit quietly for one minute and count the pulse beats. Using this number, figure out approximately how many times your heart will beat in one hour and in 24 hours.