

## 4-Components of Blood

**Description:** *Students will explore what our blood is made of in this lab. Students will get to see a demo of what the components of our blood look like (or they can make their own 'blood' jar, materials will be listed if you would like that option.) We will also look at how blood flows in and out of the heart.*

### Standards:

- **4-LS1-1** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- **4-LS1-2** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

### Materials supplied by classroom teacher:

**\*\***These materials are optional! I will be making a 'blood' jar to demonstrate what blood is made of. IF you would like to make one as a class or have the students make one with a partner, here are the materials you will need.

- Small bowl or jar (cups will work, just easier to see in glass jar or bowl), one for however many blood jars you are going to make
- Corn syrup- enough to fill up each jar halfway
- Candy red hots (or any small red object like red beads)- enough to fill up each jar a little under halfway
- Mini marshmallows (or white jelly beans, any small white object)- just a few per jar
- Candy sprinkles- just a few per jar

### Advanced Preparation:

- If you are making the blood demo in class, please have the materials ready.
- Please have printed out the two worksheets at the end of the packet for each student. (You can print them front and back if you would like, they don't need to be separate sheets.)
- **\*\***Students will need a red and blue colored pencil or crayon to fill out one of the worksheets.

# Program Connection Information

***Please use an external microphone (conference style) rather than the integrated one in the computer for the audio for your class and locate it centrally in the room. It can be difficult for the Greenbush teacher to hear the students using the computer microphone and therefore it reduces the interactive nature of the lesson. It is fine to use the computer webcam for your video source though.***

All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter <https://greenbush.zoom.us/j/6913388482> in the URL space. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.

If using a Polycom video conferencing unit (or any legacy type video conferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet: 162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 6913388482 (for Kenzie at Science Center).

It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational and no firewalls that might prevent you from connecting to Zoom.

Once you connect, you will enter a Zoom waiting room. Your Greenbush teacher will admit you into the final meeting room.

Classes take place at the following times:

9:00-9:45

10:00-10:45

12:15-1:00

1:15-2:00

2:15-3:00

If you log in during one of those times, you may connect during another class' lesson. If you do, please check your connection to make sure things are working properly and then leave the meeting until your scheduled time by selecting "End Meeting" in the lower right corner of your Zoom screen and click on "End Meeting". You will need to rejoin the meeting at your scheduled time. This prevents your site from interfering with the lesson currently in progress. After your lesson is finished, please leave the meeting.

If you have questions, please call Kenzie Heatherly at Greenbush (620-724-6281).

**Prior to the IDL lesson, please review these cooperative learning strategies. Due to social distancing, we will only practice partner communication to follow distancing guidelines.**

### **Round Robin**

Each member of the team takes a turn sharing orally with the team.

### **Rally Robin**

With a partner, students take turns sharing brief oral responses.

### **Timed Pair Share**

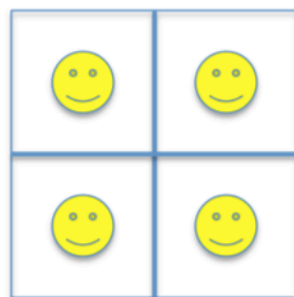
In pairs, students share with a partner for a predetermined time while the partner listens. Then partners switch roles.

### **Stand Up, Hand Up, Pair Up**

Students move around with hands in the air and quickly find a partner with whom to share or discuss. Once students find a partner, they give each other a “high five” and stand together, ready for the next instructions.

### **More terms to know –**

Shoulder Partner:  
The person sitting on  
the student's right or  
left.

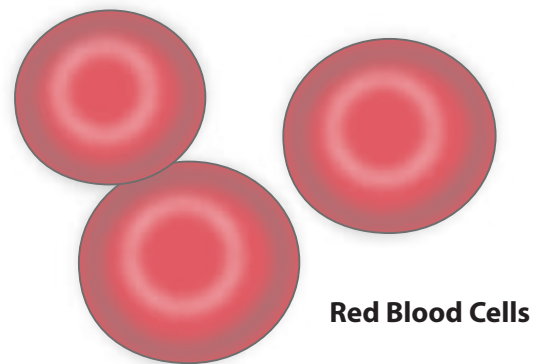


Face Partner:  
The person  
sitting facing the  
student.

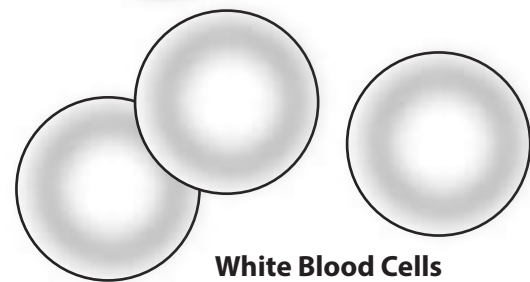
# Blood!

Ew, blood! Blood may be icky, sticky, and gross, but it's one of the most important things in your body. Blood carries nutrients and oxygen to all the parts of your body so you can grow. Adults have about 5 liters of blood inside of them!

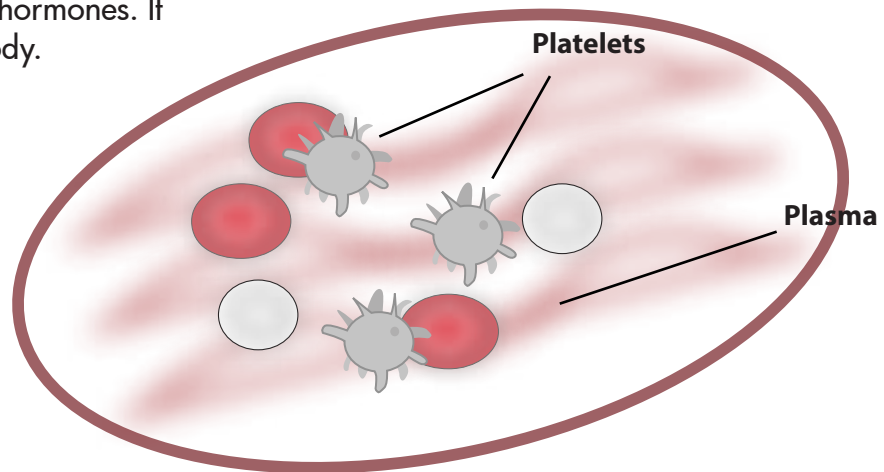
**Blood** is a mixture of four things: red blood cells, white blood cells, platelets, and plasma. **Red blood** cells carry oxygen from your lungs to the rest of your body to keep you healthy. They're what make your blood red. But what happens if you're not healthy? Blood has a built-in defense system. **White blood cells** help defend your blood against disease. When you get sick, your body makes more white blood cells to fight germs.



**Platelets** help you stop bleeding if you cut yourself. When you give yourself a paper cut or scrape your elbow, the blood around the wound quickly becomes sticky and hard. Without platelets, you would never stop bleeding!



**Plasma** is what red cells, white cells, and platelets float around in. Plasma is a liquid that carries mostly water, but it also carries some nutrients and hormones. It also carries waste away from your body.



Using the information in the paragraph above, complete the sentences below.

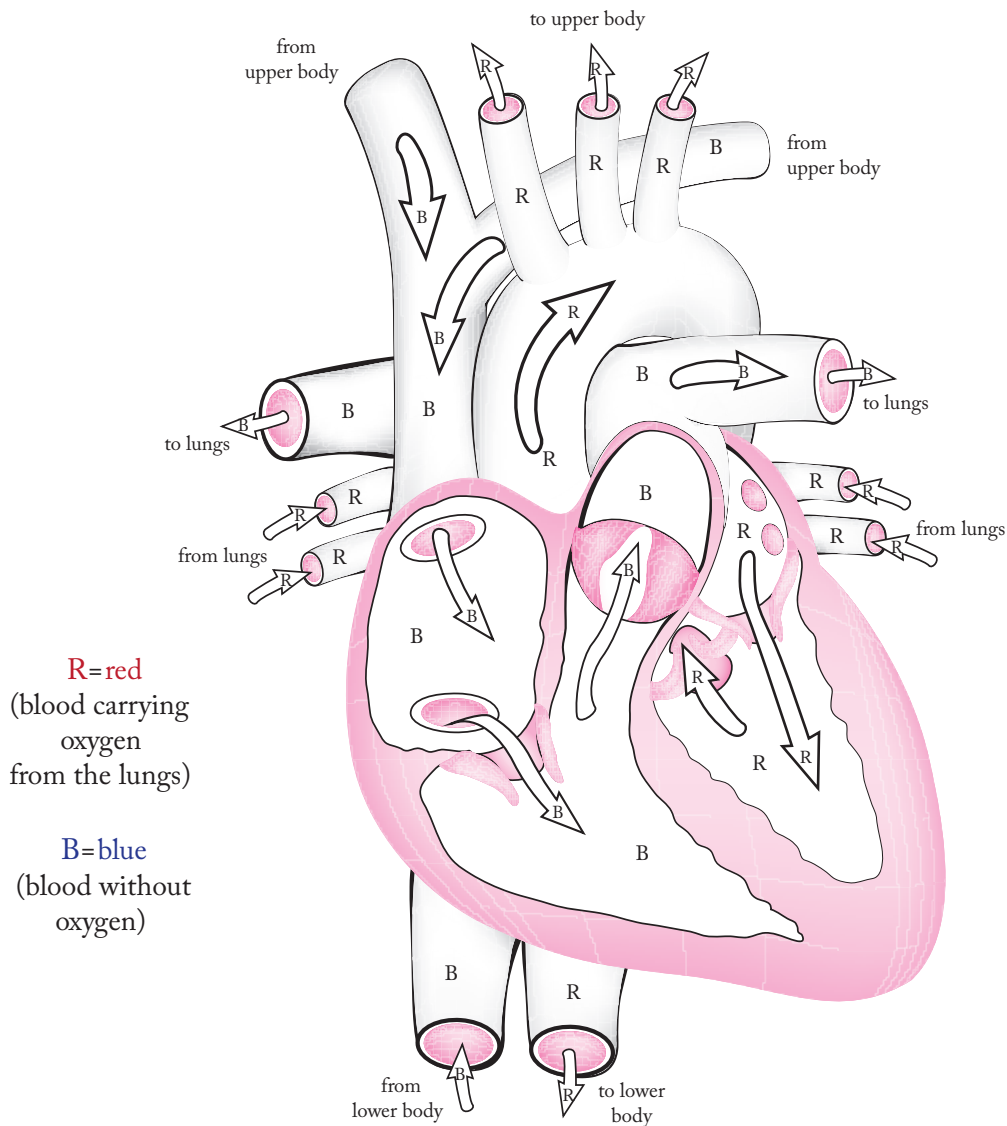
\_\_\_\_\_ blood cells take oxygen to your body. If you cut yourself, \_\_\_\_\_

help stop the bleeding and close up the wound. \_\_\_\_\_ is made up of mostly water.

\_\_\_\_\_ help fight germs. Most adults have about \_\_\_\_\_ liters of blood inside of them.

# How does blood flow through the heart?

**Directions:** Check out the diagram below that shows how blood circulates around the heart. Color in the veins and arteries the correct color to give yourself a better idea of what happens when your heart pumps blood.



**Extra Activity:** Put your pointer finger and middle finger on the vein on the right side of your neck, right under your jaw bone. Find your pulse. Set a stop watch for 1 minute, and count how many times your heart beats. Write that number down. \_\_\_\_\_

Now, run in place for one minute. When you are done, find your pulse, set the stop watch for 1 minute, and count how many times your heart beats now. Write that number down. \_\_\_\_\_

Was there a difference between the two times? \_\_\_\_\_

Why? \_\_\_\_\_