

Summary Description

This is the third in a series of 8 lessons that introduces the student to human anatomy.

Learning Objectives

To have the student learn a few key facts about the circulatory system.

Approximate Time for Lesson

40 minutes

Suggested Maturity Level for Instruction

Student should be able to read simple words and perform simple addition and subtraction. Also, student should be able to sit still and engage in one-on-one conversation.

References:

Cardiovascular System, Discovery Kids - <http://yucky.discovery.com/noflash/body/pg000131.html>

Circulatory System, Yahoo Education -

<http://education.yahoo.com/reference/encyclopedia/entry/circulat>

Materials Needed

1. Internet Access - Pull up the following:
 - a. Picture of the circulatory system (go to <http://www.ferra65.com.mx/circulatorio.jpg>)
 - b. Picture of a heart (go to http://www.cartage.org.lb/en/themes/Sciences/LifeScience/GeneralBiology/Physiology/CirculatorySystem/CirculatorySystem/TheHeart/circsyscomp_2.gif)
 - c. Video of a Path of a Red Blood Cell (go to <http://www.youtube.com/watch?v=XYxDSWBOE58>)

Preparation

Make sure you have materials open, printed and/or available prior to beginning the lesson.

Script

Introduction (5 minutes)

1. **Teacher:** Ok. So last lesson we learned about the respiratory system, which is a fancy word for all the parts in your body that help you breathe.
2. **Teacher:** Good. Now, remember when we learned last lesson that it's the blood that carries the air we breathe to all of our cells? Well, today, we're going to learn all about blood and the organs that help blood travel throughout our bodies. By the way, an "organ" is a part of your body that does some important things - a good example is the brain, which is the organ that makes you think and sense the environment around you.

3. Teacher: Anyway, the collection of blood and organs that help blood travel throughout the body is called the circulatory system. Can you say "circulatory system"? [\[Have the Student repeat the word "circulatory system" several times\]](#)
4. Teacher: Great, so are you ready to learn about the circulatory system? [\[Get positive response from Student and begin lesson\]](#)

Lesson (30 minutes)

1. Teacher: Great. Now, can you guess as to why we need blood? [\[Engage the Student in conversation\]](#)
2. Teacher: Those are some good answers. The reason why blood is so important is because blood is what carries all the air we breathe to all parts of our body. If we did not have any blood, then it wouldn't matter how much we breathe because that air could not be used. So blood is what carries that air and puts it into places that we need throughout our bodies.
3. Teacher: Blood also helps clean out things we don't need in our bodies. Also, cells in our blood help fight sickness and keep us healthy. And finally, other cells in our blood help fix cuts and scrapes on our skin when we get hurt.
4. Teacher: Now, we learned from our last lesson that our bones actually make blood, which is great. But what do you think makes the blood actually go from say, your foot to your head? I mean, what makes blood travel everywhere in your body? [\[Engage the Student in conversation\]](#)
5. Teacher: If you said the heart, that's the right answer! The heart is like a pump and each time you feel your heart beat is when blood is being pumped throughout your body. Here is a picture of the heart and your entire circulatory system. [\[Show the Student the picture of the circulatory system - click the picture to zoom in\]](#)
6. Teacher: [\[Point to the heart in the picture\]](#) Now, see that red and blue thing right in the upper center of the body? Well, that's the heart. Your own heart is about the size of your fist. And as you can see, must always be pumping blood throughout your body so that your body can get the air it needs. In fact, your heart beats about 30 million times each year and keeps beating even when you're sleeping! Here's a closer picture of a heart [\[Show the Student the picture of a heart\]](#)
7. Teacher: Now, don't worry about all the names next to the heart. Just look at the picture. Do you notice that one side is red while the other side is blue? Well, that is because the red side represents the blood that has air ready to give to the body while the blue side represents blood that does not have air since that blood has already given the air to the body.
8. Teacher: And actually, it's really the red blood cells (that is created by our bones) inside our blood that carry and give air to parts of our bodies. Let me explain how some red

blood cells can have air in it while others don't have air. First, let's look at the circulatory system again. [\[Show the Student the picture of the circulatory system\]](#)

9. Teacher: Now, as you know, we get air into our body from breathing. Well, organs called the lungs [\[Point to the lungs in the picture of the circulatory system\]](#) collect the air and hold it, waiting for the red blood cells in the blood to travel to them and pick up all the air. The heart [\[Point to the heart in the picture of the circulatory system\]](#) pumps the red blood cells that do not have air (the "blue" blood) to the lungs.
10. Teacher: Now, notice all the blue lines in the picture? [\[Point to the veins in the picture of the circulatory system - these are the blue lines\]](#) Those are called veins and blood that has no air travels through veins. Look at your arms and you will probably see some veins of your own. They're blue right (or light green)? All that blood in your veins is on their way to your heart so that they can get pumped into the lungs to get more air.
11. Teacher: By the way, just in case you're wondering, all blood is red. It's a darker red when the blood does not have air in it and a brighter red when it has air in it. The reason why we see blue veins is because the veins look blue when we see them through our skin - our skin acts like eyeglasses that make our veins seem to look blue/light green. Does that make sense? [\[Get a positive response from the Student and move on\]](#)
12. Teacher: Good. Now, you see all those red lines in the picture? [\[Point to the arteries in the picture of the circulatory system - these are the red lines\]](#) These are called arteries and they carry red blood cells that have air in them. It's these arteries that act as a highway for the red blood cells to carry and give air to all parts of our bodies. After the red blood cells give air to our bodies, they travel through our veins to go back to the heart so that the heart can pump those blood cells to the lungs to get more air. And the cycle repeats over and over again. Now that I've explained how your blood collects, moves and gives air to all parts of your body, let's watch a quick video on what I just explained. [\[Show the Student the video on the path of a red blood cell\]](#)
13. Teacher: By the way, both veins and arteries, which are the tubes through which your blood travels, are called blood vessels. It's kind of amazing but if you were to lay out all the blood vessels in a grown up in the shape of one line, it would stretch 60,000 miles. That's long enough to go around the entire world two and a half times!
14. Teacher: Now that I explained the most important thing that blood does. Let's go over 3 more things that blood does for us. First, as the red blood cells deliver their air to the body and travel through the veins, these cells also collect stuff that we don't need and get then ready to it throw away (there's another lesson on how the body throws stuff away that it doesn't need so we won't go over it here).
15. Teacher: Second, white blood cells are created in our bones and live in our blood. These white blood cells help fight sickness and disease. Each time you catch a cold, you can bet that your white blood cells are fighting a war inside your body against the microbes

(remember our lesson on microbes?) that made you sick. If you didn't have white blood cells, even a small cold could really send you to the hospital.

16. Teacher: And finally, cells called platelets are also created in your bones and live in your blood. These platelets help heal your cuts and scrapes when you fall down and get hurt. Platelets help fix your cuts and scrapes by stopping blood from coming out of your damaged skin. Do you remember the last time you were bleeding? Well, you can thank your platelets for stopping that bleeding for you. If you don't have any platelets, even a small pin prick will be dangerous since you would continue to bleed - eventually you would have to go to the hospital to stop the bleeding.
17. Teacher: OK - time for review. Go stand up and get in front of the class (consider inviting other members of the family also to set the stage). [\[Ask Student the following:](#)
- a. Why is blood important? Any one of the following: 1) to collect and give air to all parts of our body, 2) to clean up things we don't need in our bodies, 3) to help fight off sickness, and 4) to help heal our cuts and scrapes when we get hurt.
 - b. Where is blood made? In our bones
 - c. What is the name of the organ that pumps blood to the parts of our body? The heart
 - d. What is a vein? A blood vessel that carries blood to the heart and lungs. The blood in veins does not have air in them.
 - e. What is an artery? A blood vessel that carries blood to all parts of our body. The blood in arteries has air in them so that it can be delivered to all parts of our body.

Teacher reviews any questions that the Student missed].

Wrap Up (5 minutes)

Teacher: [\[Clapping\]](#) You did GREAT! Wonderful job! Are there any questions that you have regarding our circulatory system? [\[Engage in conversation with the Student and follow up with questions you cannot answer by researching the Internet\]](#)