

First Lego League Curriculum - Ontario

Activity Sheet	
Gr 5 - Lesson #2	Curved Move – Circulatory Track
Date:	Name(s):

Check That I'm Done

Commented on my code
 Modify it task
 Coding Challenge

Learn

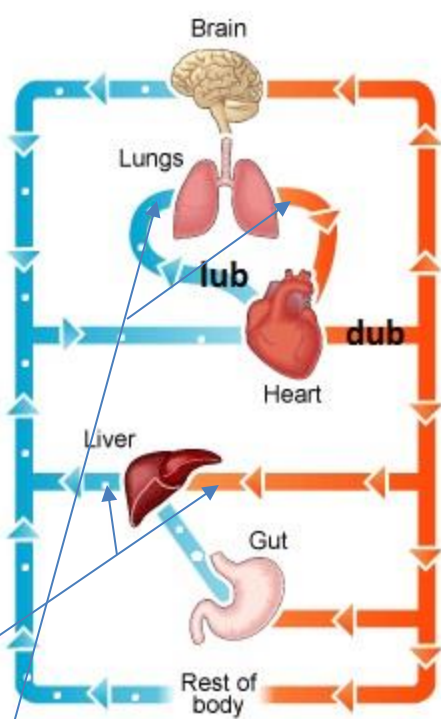
The heart is a pump that pushes blood throughout the body, providing oxygen and nutrients to all of the body's tissues.

To understand how this works, we can study a simplified path that the blood takes throughout the body.

The red path is meant to represent oxygen rich blood, while the blue path represents blood that has been used by the tissues, and is in need of more oxygen.

You can see in the diagram that oxygen rich blood enters organs, and oxygen poor blood leaves them.

You will also notice that the lungs are the only organ that can turn de-oxygenated blood, into oxygenated (oxygen rich) blood.



The diagram illustrates the circulatory system. At the center is the heart, with two ventricles labeled 'lub' (left) and 'dub' (right). A red path (oxygen-rich blood) starts from the 'dub' ventricle, goes to the 'Rest of body', then to the 'Gut' and 'Liver', and finally to the 'Brain'. A blue path (oxygen-poor blood) starts from the 'Brain', goes to the 'Lungs', then to the 'lub' ventricle. From the 'lub' ventricle, the red path goes to the 'Lungs', then to the 'Rest of body', then to the 'Gut' and 'Liver', and finally to the 'Brain'. Arrows indicate the direction of blood flow.

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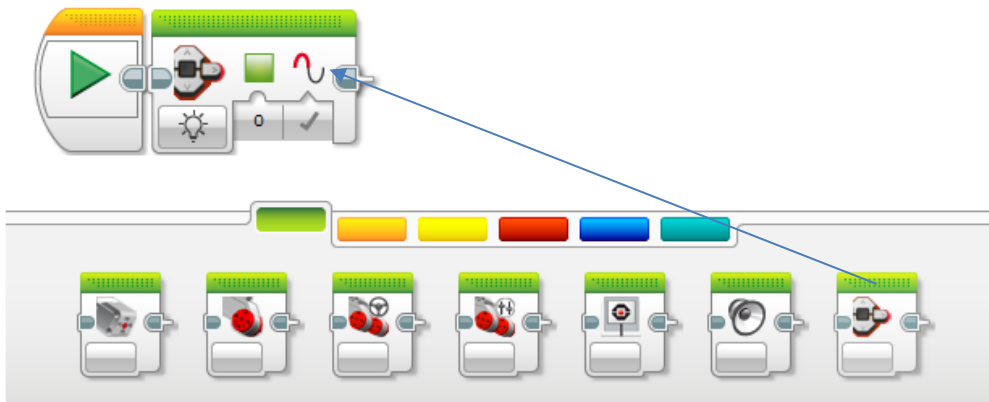
If you listen to your heart you will hear it make a “lub-dub” sound. These are the two distinct pulses your heart makes with each beat. The lub is the smaller push to the lungs, and the dub is the larger push to the rest of the body.

Predict and Plan

Remembering that the heart is a pump, where do you think the blood is travelling the fastest? Put a “*” on the previous diagram above to mark your guess.

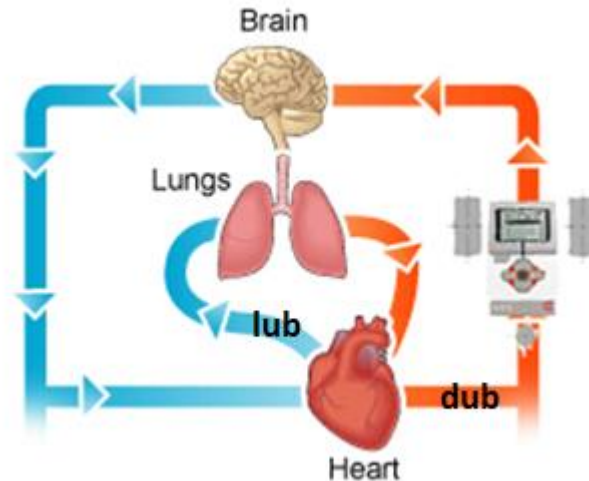
Demonstrate/Design/Discover

- ✓ In the coding part of this lesson, you learned how to accurately control the path of your robot. For this lesson, you’ll also need to use the light status block, which simply changes the brick’s LED to red, yellow, or green.



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- ✓ Your robot is going to 'turn into' a red blood cell, and demonstrate the process of carrying oxygen to the brain.



- ✓ Your robot must:
 - Start off with the status light red
 - Shoot out away from the heart (dub) and loop up towards the brain
 - Slow down as it exists the brain, and change from red to green (there is no blue, so here we will use green)
 - Enter the heart, pause, and speed towards the lungs (lub)
 - Change from green to red as it travels through the lungs smoothly
 - End back at the heart waiting to start again
 - Use a loop so it repeats!
 - *Do your best to star on track*

Tips: There are lots of ways to achieve the results above, taking it one step at a time.



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Record

How many blocks did you need to use to complete your program? _____
Compare to another group and see what they did differently:
