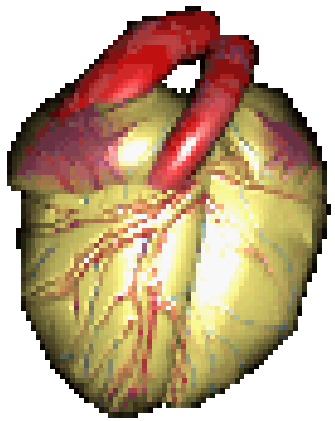
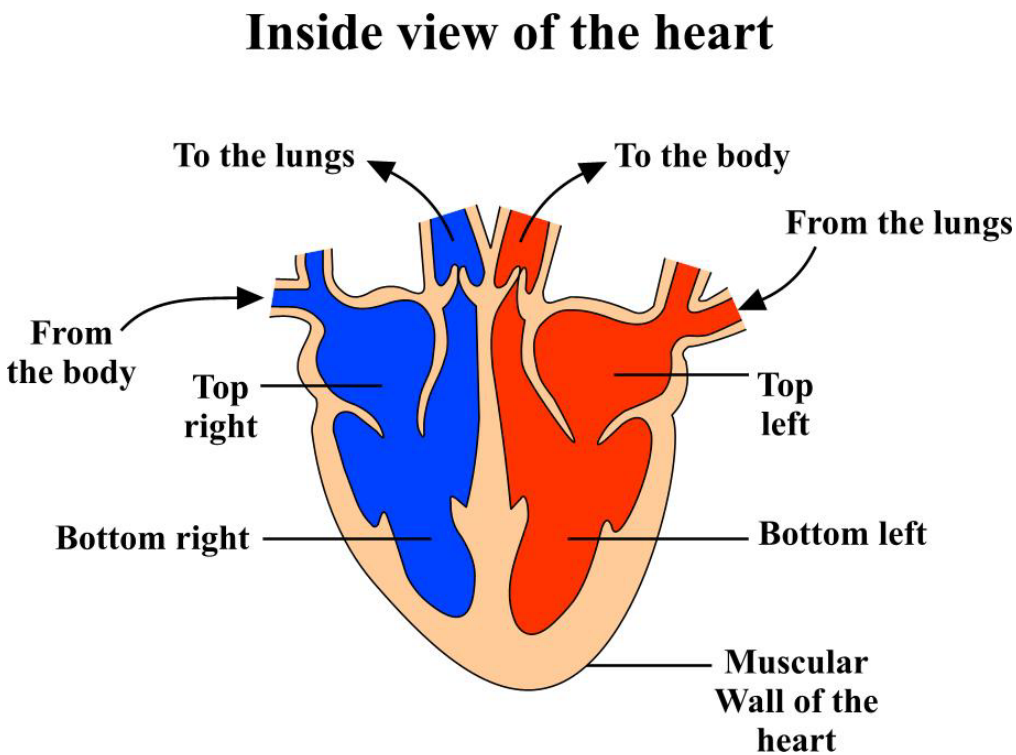
*Heart Dissection**



Images and text from: http://heartlab.robarts.ca/dissect/dissection.html & http://sps.k12.ar.us/massengale/heart_dissection.htm

Mammals have four-chambered hearts and double circulation: To the lungs & to the body.

It has two **atria** and two completely separated **ventricles**. The left side of the heart handles only oxygenated blood, and the right side receives and pumps only deoxygenated blood.



Let's put a name to its parts!

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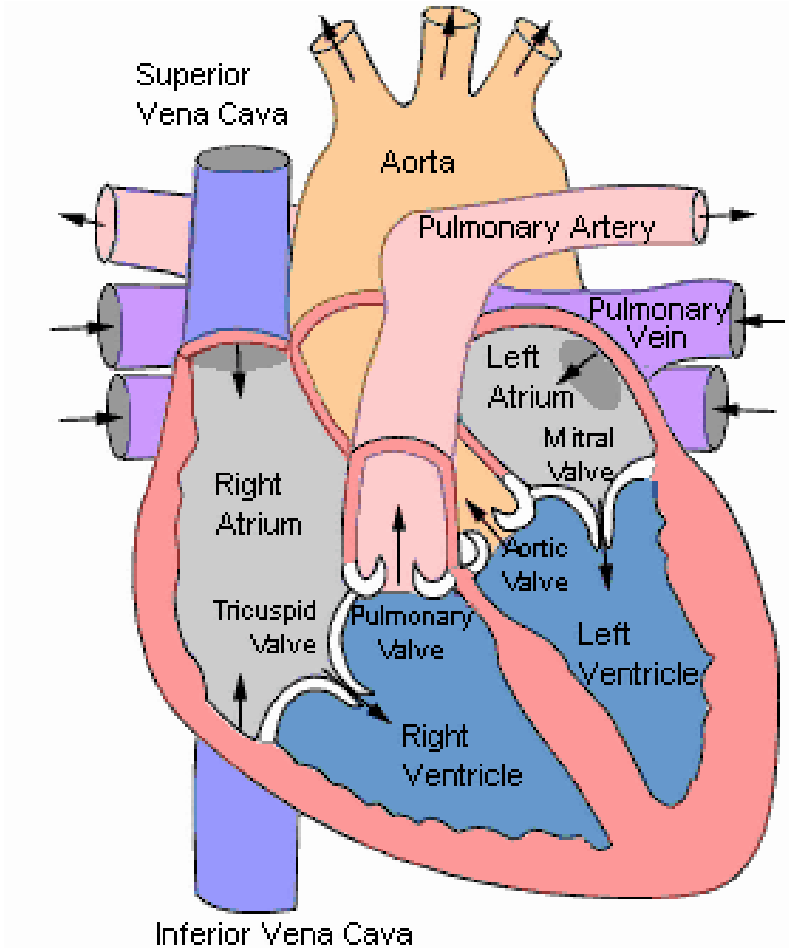
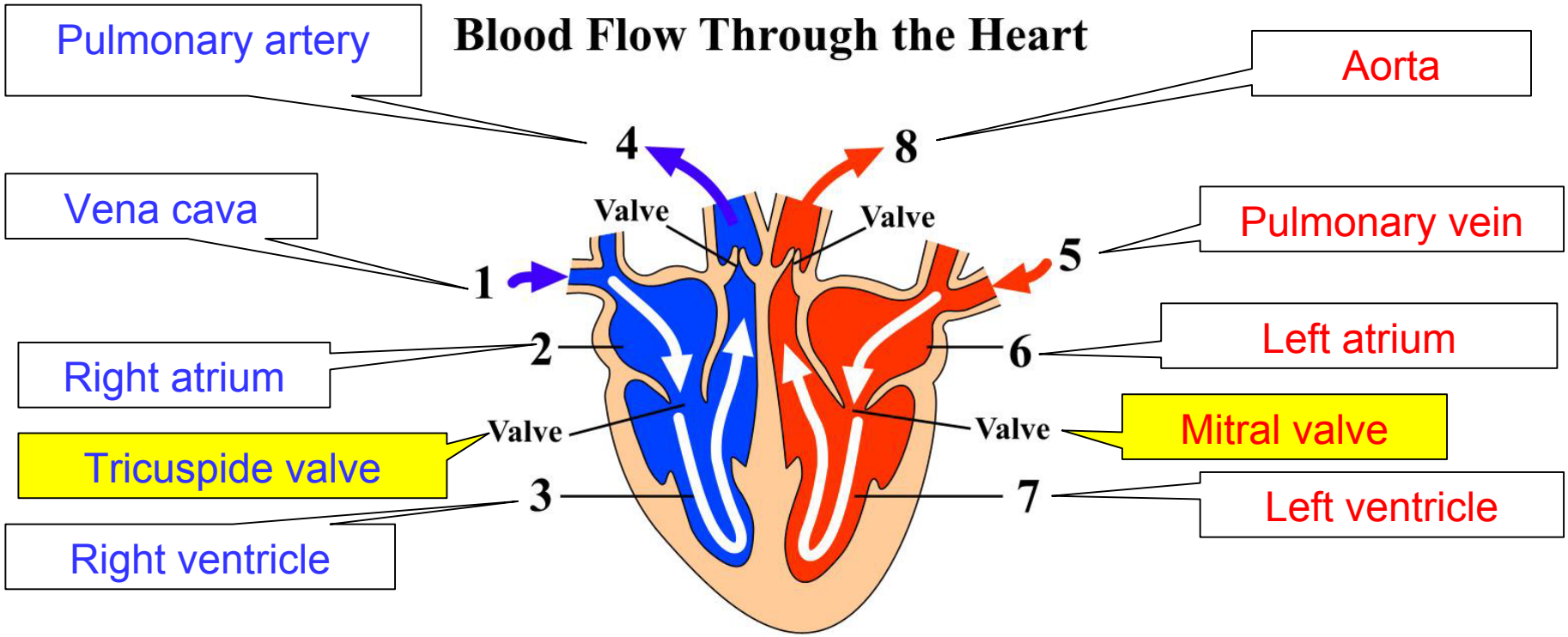


Blood Flow Through the Heart



NOTE!! The heart valves stop blood flowing backwards.

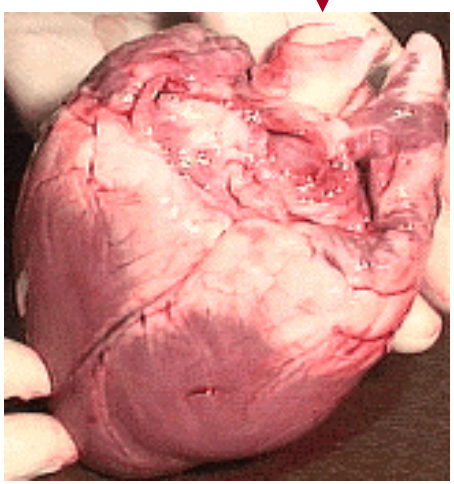
Things to do:

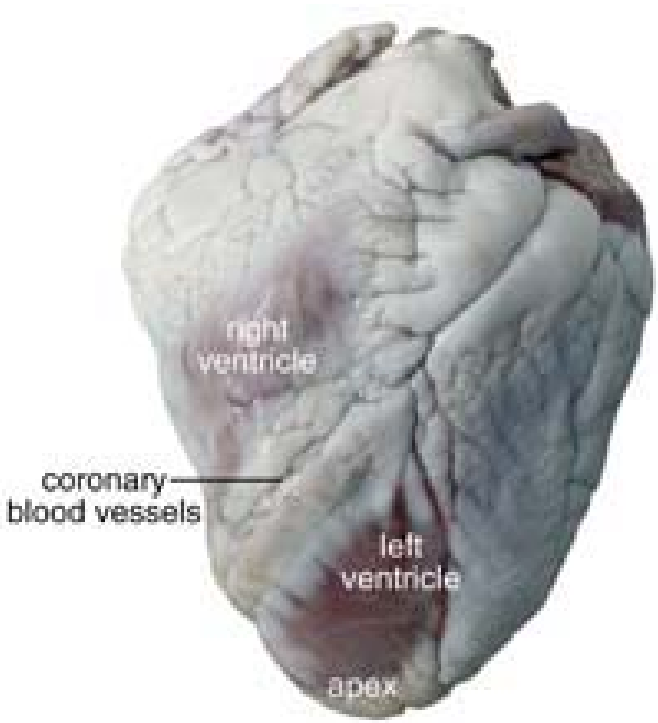
1. Open your lab jotter
2. Copy this picture
3. What are the name of the 8 parts numbered?

Let's start the dissection
External structure

The heart is now in the pan in the position it would be in a body as you face the body.

aorta





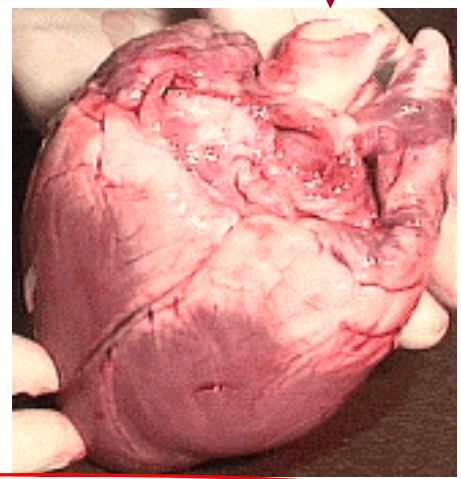
Right Left

Front or Ventral Side of the Heart

Let's start the dissection

External structure

aorta



The heart is now in the pan in the position it would be in a body as you face the body.

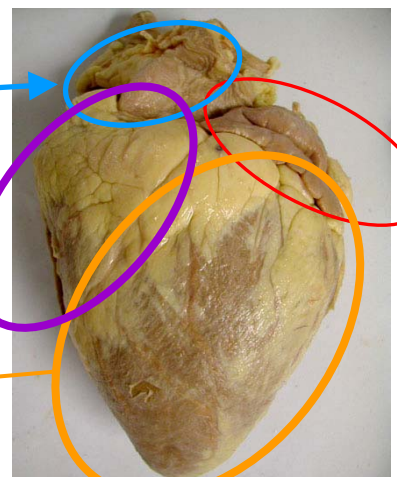
Locate the following **chambers** of the heart from this surface:

Left atria - upper chamber to your right

Left ventricle - lower chamber to your right

Right atria - upper chamber to your left

Right ventricle - lower chamber to your left



Right Left

Front or Ventral Side of the Heart

Let's start the dissection
External structure

Locate these blood vessels at the broad end of the heart:

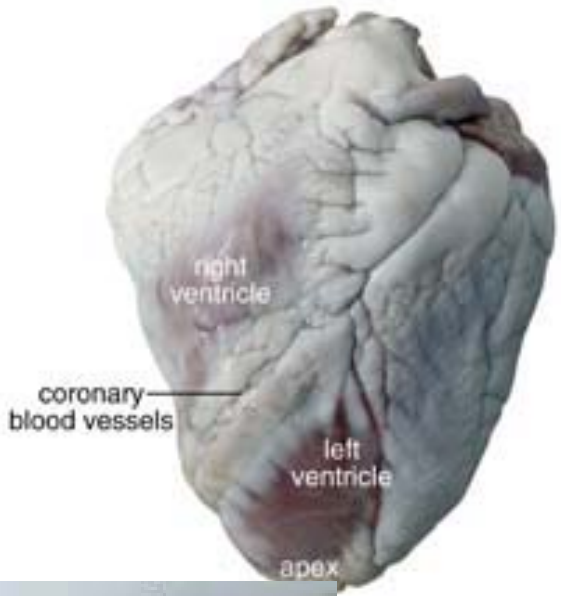
Coronary artery

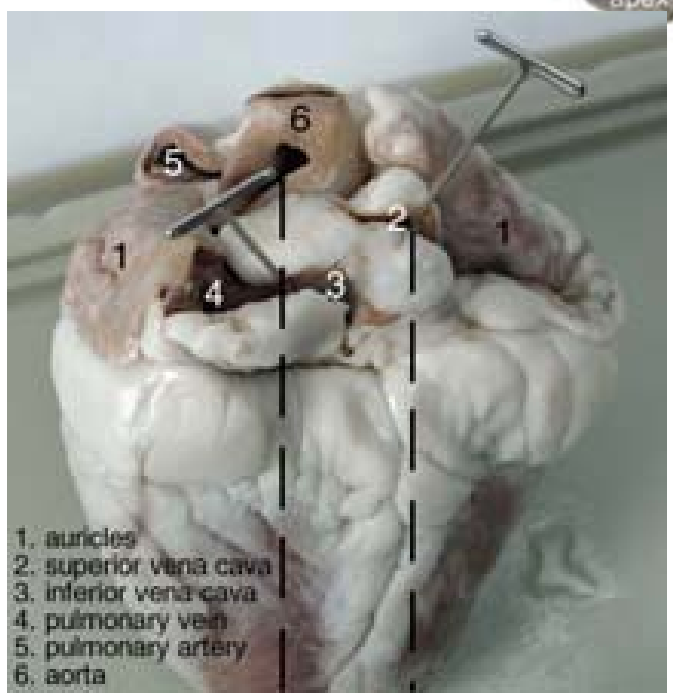
Pulmonary artery

Aorta

Pulmonary veins

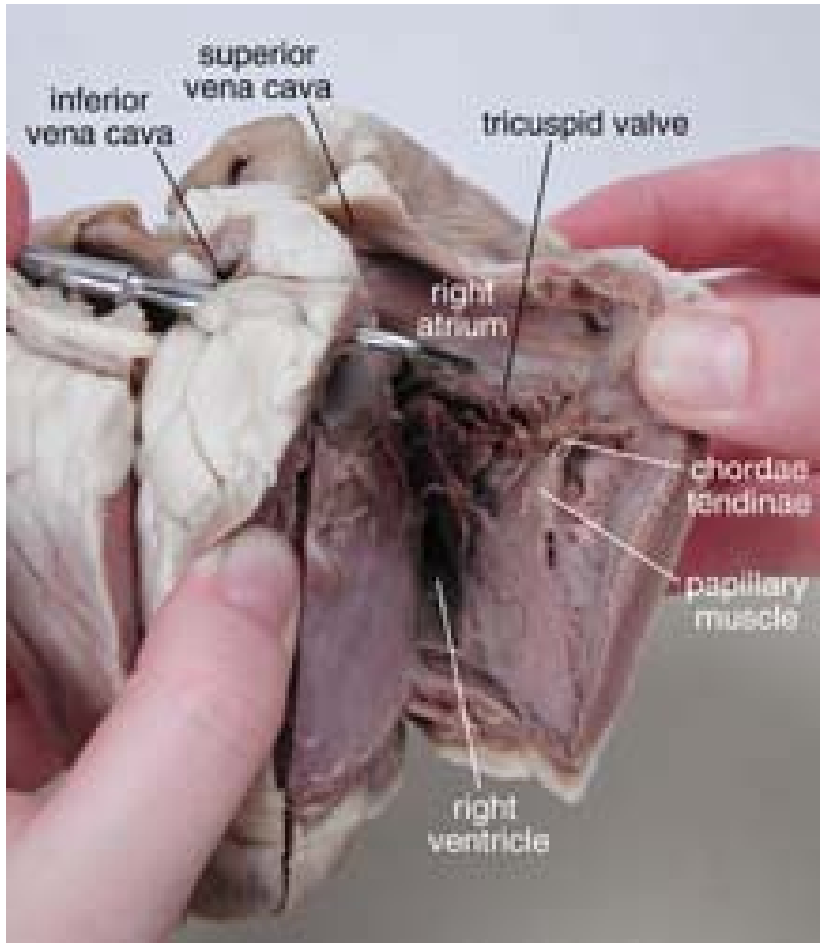
Inferior & Superior Vena Cava





Let's get dirty! Internal structure

1. Cut through the side of the pulmonary artery and continue cutting down into the wall of the right ventricle.
2. Examine the internal structure.
3. Locate the **right atrium**. Notice the thinner muscular wall.
4. Find where the **inferior & superior vena cava** enter this chamber.
5. Locate the valve between the right atrium and right ventricle.
6. Locate the **pulmonary artery** that carries blood away from this chamber

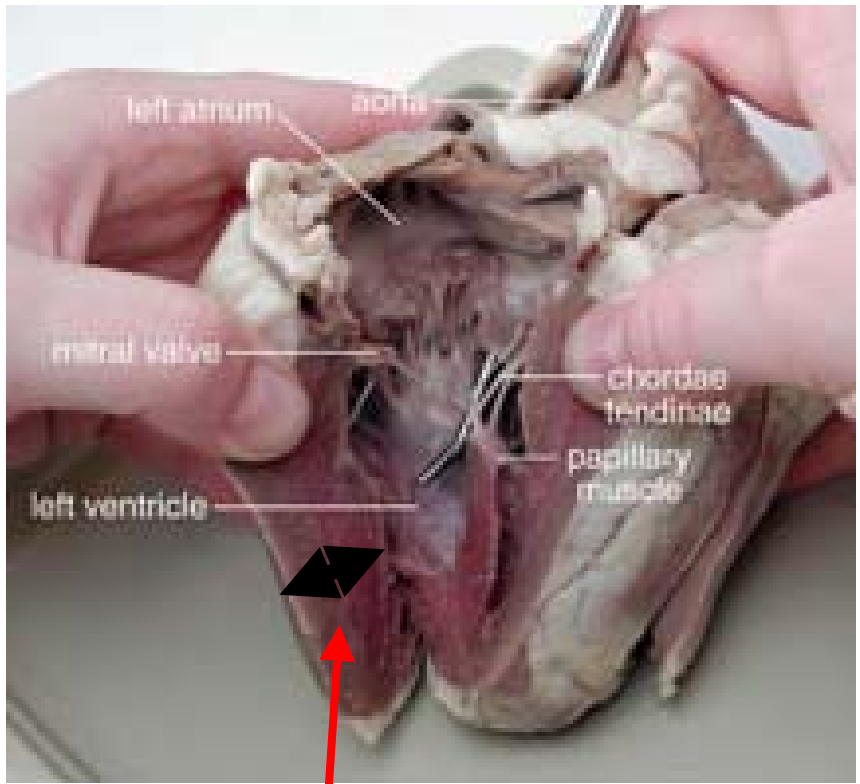


Tricuspide valve

"Attacking" the left side of the heart!

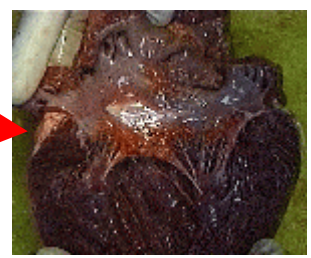
Internal structure

1. Start a cut on the outside of the <u>left atrium</u> down into the <u>left ventricle</u> cutting toward the apex
2. Open the heart. Examine the left atrium. Find the openings of the pulmonary veins form the lungs. Observe the one-way, **semi-lunar valves** at the entrance to these veins
3. Look for the mitral valve.
4. Examine the **left ventricle**. Notice the thickness of the ventricular wall (it pumps blood to the hole body!).
5. Using your scissors cut the left ventricle toward the aorta. Find the valve. This is called the **aortic valve.**



Left ventricle wall!

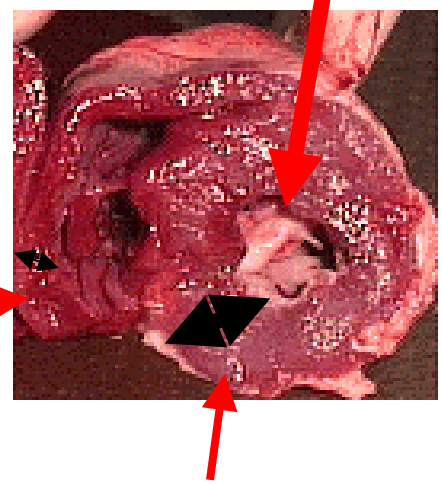
Mitral valve



Dying for getting dirtier? Transversal cutting of the heart!

The incision is across the ventricles, bisecting the heart in the horizontal plane.

This section leaves the mitral valve on the top half of the heart.



In this view, the heart is completely transected.

The left ventricle is easily identifiable by its thick wall which appears circular.

Notice the enormous difference in the wall thickness between the ventricles. The left ventricle has to produce pressures almost *ten times* higher than those on the right side of the heart, so this is not surprising.