Unit #3: Transportation and Respiration

“The Heart”
The Heart

• The Heart is a Hollow muscle about the size of your fist

• It is separated into to sides (right and left) by rigid wall like tissue called SEPTUM

• Each side of the heart has 2 chambers

• The upper chamber is called an ATRIUM
  • Atria (plural for atrium) collect blood received by the heart

• The lower chamber is called a VENTRICLE
  • Ventricles pump blood out of the heart

• The Heart is a “Double Pump”
  • In the Pulmonary Circuit the Heart pumps deoxygenated blood from the right side of the heart to the lungs to get oxygen and then back to the left side of the heart
  • In the Systemic Circuit the Heart pumps oxygenated blood from the left side of the heart to the systems of the body and then back to the right side of the heart
Here is the path:

1. **Deoxygenated Blood** (returning from the body) enters the Right Atrium through 2 large Veins called the **Superior Vena Cava** and the **Inferior Vena Cava**

2. The **Right Atrium** contracts pushing blood through the **Tricuspid Valve** and into the **Right Ventricle**

The **Tricuspid Valve** has three flaps and prevents blood from flowing back into the right atrium
3. The **Right Ventricle** contracts pushing blood through the **Pulmonary Semilunar Valve** and into the **Pulmonary Trunk**

   The **Pulmonary Semilunar Valve** prevents blood from flowing back into the Right Ventricle.

4. The Blood Flows through the **Pulmonary Trunk** into the **Pulmonary Arteries** which carry the blood to the **lungs**

   The **Pulmonary Arteries** are the **ONLY** arteries in the body that carry deoxygenated blood.
The Systemic Circuit

1. Blood is carried back to the Heart by the **Pulmonary Vein** into the **Left Atrium**

   The **Pulmonary Vein** is the **ONLY** vein in the body that carries Oxygenated blood

2. The **Left Atrium contracts** pushing the blood into the **Left Ventricle** through the **Bicuspid Valve**

   The **Bicuspid Valve** (also called the Mitral Valve) has 2 flaps that prevents blood from flowing back into the **Left Atrium**
3. The Left Ventricle Contracts pushing blood through the Aortic Semilunar Valve into the Aortic Arch and into the Aorta where it is carried to the rest of the body