What is the circulatory system?
What is the function of the circulatory system?
Function: transports materials from the digestive and respiratory systems to the cells of the body
How does the heart work?
• **Heart** – pushes blood throughout the body
  - **Left side** – pumps oxygen-rich blood to entire body
  - **Right side** - pumps oxygen-poor (used) blood to the lungs to receive oxygen.
• **Valves** – prevent blood from flowing backwards
• Chambers - each side of heart divided into 2 parts – right and left atrium and ventricle.
  o Right atrium – **receives** oxygen poor blood from all parts of the body.
  o Right ventricle – **pumps** oxygen poor blood to the lungs.
  o Left atrium – **receives** oxygen-rich blood from the lungs.
  o Left ventricle – **pumps** oxygen-rich blood to all parts of the body.

All blood is red, but oxygen rich blood is a much brighter and lighter shade of red. (charts usually show oxygen-poor blood in blue)
What makes up blood?
• **Blood** - a fluid that delivers oxygen and nutrients and removes CO2

  o **Plasma** – the fluid that makes up 60% of blood
    (Contains proteins, glucose, hormones, gases, etc. dissolved in water.)

  o **White Blood cells** – helps fight infection

  o **Red blood cells** – transports oxygen throughout body

  o **Platelets** – large cell fragments that help form blood clots
How does the blood travel throughout the body?
• **Blood vessels** – tube-shaped structures that move blood throughout the body
  
  o **Arteries** – take blood away from heart, strong, thick walls (carries oxygenated blood)
  
  o **Veins** – carry blood back to the heart, thinner (carries deoxygenated blood)
  
  o **Capillaries** – narrow and connects arteries with veins
What is blood pressure and blood type?
**BLOOD PRESSURE**

- **Blood Pressure** – the force produced when the heart contracts travels through the body.
  - Must maintain healthy blood pressure to get blood to all parts of body.
  - Too low – some cells will not get oxygen and other materials.
  - Too high – force will weaken the vessels and require the heart to work harder to push the blood through.
BLOOD TYPES

• Each red blood cell has special proteins on its surface. The group of surface proteins determines blood type.

• There are 2 blood-type proteins – A & B.

• A person with A proteins in blood – Type A

• A person with B proteins in blood – Type B

• Some people have both proteins – Type AB

• Some people have neither proteins – Type O

All this leads to 4 types of blood: A, B, AB, and O
Video about the Circulatory System

Blood Donation FAQs

Why Should I Give Blood?

One in four people will need a blood transfusion sometime in their lifetime. Only 37% of the population is eligible to give blood. Less than 10% give annually.

Every two seconds, someone in the U.S. needs blood.

It takes all types.

<table>
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<th>TYPE</th>
<th>YOU CAN GIVE BLOOD TO</th>
<th>YOU CAN RECEIVE BLOOD FROM</th>
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<td>A+</td>
<td>A+, AB+</td>
<td>A+, A-, O+, O-</td>
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