I Can Statements
I can identify the major components of blood and where they are formed.

Identify the four components of blood in the diagram below.

1. Label each section of the pie chart with the correct percentage of blood component and color the pie chart with a different color for each part of the blood. Write the colors you used here:
   - Platelets are colored ________________
   - Red blood cells are colored ________________.
   - Plasma is colored ________________
   - White blood cells are colored ________________.

2. What makes up the most of your blood? ________________ least of your blood? ________________

Match the description with the component you labeled in the diagram.

1. Look like red discs, have a pale center, no nucleus, similar in size ________________

2. Small granular fragments, no nucleus, vary in size ________________

3. Large in size, well formed nucleus ________________

4. Straw-colored fluid ________________

Match the below common name with scientific name.

1. Erythrocytes a. White Blood Cells (WBC)
2. Leukocytes b. Red Blood Cells (RBC)

What is hematopoiesis? Where does it happen?
I can explain the function of the major components of blood.

<table>
<thead>
<tr>
<th>Major Component of Blood</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythrocytes:</td>
<td></td>
</tr>
<tr>
<td>Lymphocytes:</td>
<td></td>
</tr>
<tr>
<td>Platelets:</td>
<td></td>
</tr>
<tr>
<td>Plasma:</td>
<td></td>
</tr>
</tbody>
</table>

Hemoglobin gives RBCs the ability to ________________________________
I can explain the process of blood clotting.

1. What is hemostasis? ______________________________________________________

2. What can speed up hemostasis? ___________________________________________

3. Identify and explain the below events of hemostasis.

   A. __________________________: ____________________________________________

   B. __________________________: ____________________________________________

   C. __________________________: ____________________________________________
I can compare and contrast the different blood types.

Other than genes, how is your blood type determined? _____________________________

<table>
<thead>
<tr>
<th></th>
<th>Type A</th>
<th>Type B</th>
<th>Type AB</th>
<th>Type O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antigens present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antibodies made</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can be donated to...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can receive from...</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Describe the difference between antigens and antibodies.

Antigen: ___________________________________________ Antibodies: ____________________________

What is Rh factor? ______________________________________________________

I can summarize transfusions and the consequences of improper blood donation.

What are reasons someone may need a transfusion? ________________________________

A type AB patient receives a transfusion of type B blood, predict and explain what would happen.

____________________________________________________________________________

Predict and explain what will happen to a type O patient when they receive a transfusion from a type A donor.

____________________________________________________________________________

A patient with type A blood needs a blood transfusion. Identify the blood types that are compatible with hers.

____________________________________________________________________________

What happens in agglutination? Why can it be deadly? ________________________________

____________________________________________________________________________

Modified True/False (Determine if each statement is true or false. Please correct each false statement.)

1. _____ Type O blood is considered to be a universal donor.
2. _____ Agglutination is a form of blood clotting in the body.
3. _____ An individual who has no antigens attached to the membrane of their RBC are referred to as blood type O.
4. _____ A person with blood type AB is considered to be a universal donor.
I can identify the function of cardiovascular system.

Of the following organs/tissues, circle those that are part of the cardiovascular system.

Heart   Bronchi   Arteries   Trachea   Lymph Nodes   Pharynx
Lungs   Veins   Bones   Blood   Thyroid   Valves

Choose terms from the list to complete the statement on function below.

Left and right atria (atrium singular); valves; veins; arteries; aorta; left and right ventricles, vena cava, heart, blood

1. ___________________________ are blood vessels that carry blood away the heart.

2. The top two chambers of the heart are called ___________________________ and receive blood from the body or lungs.

3. The tissue that supplies vital nutrients, oxygen, and helps remove waste is considered ________________.

4. ___________________________ are structures stop blood flowing backwards into the atria.

5. ___________________________ are blood vessels that carry blood towards the heart.

6. The blood vessel known as ___________________________ directly supply the heart with oxygenated blood.

7. This structure responsible for forcefully moving blood throughout the body is the ________________.

8. The bottom two chambers of the heart are called ___________________________ and receive blood from the atria.

9. This artery sends the blood out of the heart to the body ___________________________.

10. The ___________________________ is a muscular organ used as a pump for the movement of blood through the body.

Why must the heart contract very strongly to pump blood from the left ventricle into the aorta?

________________________________________________________________________________________

What could happen if a heart valve did not work properly?

________________________________________________________________________________________
I can identify the parts of the human heart.

**Labeling the Heart**

**BANK:**
- Aorta
- Inferior vena cava
- Left atrium
- Left ventricle
- Pulmonary arteries (left and right)
- Pulmonary veins (left and right)
- Right atrium
- Right ventricle
- Superior vena cava
- Septum (J)

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**Label the tricuspid valve and bicuspid valve**
I can explain the double-circulation of blood through the heart.

How many chambers of the heart do you have? _______________

Name the chambers of the heart. ________________________________

The shaded areas in the diagram below are muscle and unshaded areas are filled with blood.
Answer the following questions with the diagram:
The two receiving chambers for blood are the_________________________________.
The two discharging chambers for blood are the_________________________________.
The __________________ separates the heart chambers.

The LEFT side of the heart RECEIVES blood FROM the_____________________
The RIGHT side of the heart RECEIVES blood FROM the_____________________
The LEFT side of the heart PUMPS blood TO the___________________________
The RIGHT side of the heart PUMPS blood TO the___________________________

In the table below, fill in whether the heart chamber/blood vessel listed contains oxygenated or deoxygenated blood.

<table>
<thead>
<tr>
<th>Heart Chamber or Blood Vessel</th>
<th>Oxygenated (O) or Deoxygenated (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Ventricle</td>
<td></td>
</tr>
<tr>
<td>Right Ventricle</td>
<td></td>
</tr>
<tr>
<td>Left Atrium</td>
<td></td>
</tr>
<tr>
<td>Right Atrium</td>
<td></td>
</tr>
<tr>
<td>Pulmonary Artery</td>
<td></td>
</tr>
<tr>
<td>Pulmonary Vein</td>
<td></td>
</tr>
<tr>
<td>Superior vena cava</td>
<td></td>
</tr>
<tr>
<td>Inferior vena cava</td>
<td></td>
</tr>
<tr>
<td>Aorta</td>
<td></td>
</tr>
</tbody>
</table>

Use the table above along with Figure 1 to answer the following:
1. The blood in the LEFT side of the heart is oxygenated/deoxygenated. Why is this logical?
2. The blood in the RIGHT side of the heart is oxygenated/deoxygenated. Why is this logical?
What is the difference between pulmonary and systemic circulation?

_________________________________________________________________________

_________________________________________________________________________

Using the above diagram, which color represents pulmonary circulation? ____________________________

Systemic circulation? ____________________________

Where does blood go AFTER it leaves the......

Right atrium ____________ Left atrium ____________ Right ventricle ____________

Left ventricle ____________ Pulmonary veins ____________ Pulmonary arteries ____________

Aorta ____________ Superior vena cava ____________ Inferior vena cava ____________

Lungs ____________ Organs & legs ____________ Head ____________
Arrange these events in the correct order starting with F.

______ A. The left ventricle contracts and blood flows along the aorta to the body.
______ B. The blood flows through the tricuspid valve into the right ventricle.
______ C. Oxygenated blood flows along the pulmonary veins into the left atrium.
______ D. The blood passes through the mitral valve into the left ventricle.
______ E. The left atrium contracts.
______ F. Deoxygenated blood flows from the inferior and superior vena cavae into the right atrium.
______ G. The deoxygenated blood picks up oxygen.
______ H. The right atrium contracts.
______ I. The right ventricle contracts and blood flows along the pulmonary artery to the lungs.
I can compare and contrast the types of vessels associated with the heart.

Label the pathway of blood as it travels through blood vessels.
**BANK:** Veins, Arterioles, Capillaries, Arteries, Venules

Describe what happens in the capillaries concerning venules and arteriole

Compare and contrast arteries and veins.
**BANK:** Carry blood through body, carry blood away from heart, carry blood towards heart, thick walls, thin walls, high BP, low BP, many valves, oxygenated, deoxygenated

<table>
<thead>
<tr>
<th>Arteries</th>
<th>Both</th>
<th>Veins</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Label the major blood vessels.
I can identify where pulse can be taken and why this is possible.

Define pulse: ________________________________________________________________

Where are some locations that pulse can be taken?
____________________________________________________________________________

Why are pulse readings possible here?
____________________________________________________________________________

I can identify factors that change blood pressure.

Define blood pressure: _________________________________________________________

Identify the four factors that can affect blood pressure?
1.  _________________________________________________________________________

2.  _________________________________________________________________________

3.  _________________________________________________________________________

4.  _________________________________________________________________________