Part 1  The Respiratory System
1. _____________________________________
2. _____ carbon dioxide  _____ veins
   _____ arteries  _____ oxygen

Part 2  Into the Lungs
3. _____________________________________
4. __________________

Part 3  Oxygen Into the Blood
5. _____ 280 million molecules in each corpuscle
   _____ we have 700 million
   _____ allows blood to carry oxygen
   _____ where oxygen passes into the blood

Part 4  Carbon Dioxide; the waste gas
6. _____________________________________
7. __________________

Part 5  The Respiratory Review
8. ________________________________
   ________________________________
   ________________________________

Part 6  Extreme Conditions
9. ____________________  10. ________________
   ____________________  12. ________________

Part 7  The Human Pump
13 ________________________________
   ________________________________
   ________________________________

Part 8  The Perpetual Pump
14. “The_________ ventricle pumps blood to the lungs and the
    _________ ventricle pumps blood to the rest of the body. There are four
    one way _________ in the heart to make sure blood flows in only one
    direction. The heart is actually a double pump. The_________ pump
    receives blood from the body and pumps it to the lungs. The_________ pump
    receives blood from the lungs and pumps it to the body.

    The heart is the most ________ pump there is”.

Part 8 (continued)  The Perpetual Pump
15. _____ number of times the heart beats in a day.

   _____number of liters of blood the heart pumps every minute.

   _____number of days for the heart to fill a gasoline truck.

   _____number of months for the heart to fill 60 tank cars.

   _____ number of times the blood vessels would go around the world if laid out end to end.

   continued
<table>
<thead>
<tr>
<th>Part 9</th>
<th>How do we breathe?</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 10</th>
<th>How is breathing controlled?</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Part 11</th>
<th>Exchange of Gases</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>The air we breathe ends up in tiny air sacs called ________ (in the lungs). ________ passes into the blood from the lungs by ________. ________ leaves the blood and enters the lungs in the same way.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 12</th>
<th>Blood Flow Through the Heart</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.</td>
<td>___ deoxygenated blood</td>
</tr>
<tr>
<td></td>
<td>___ oxygenated blood</td>
</tr>
<tr>
<td></td>
<td>___ left atrium</td>
</tr>
<tr>
<td></td>
<td>___ left ventricle</td>
</tr>
<tr>
<td></td>
<td>___ right side of heart (rt. Atrium and rt. Ventricle)</td>
</tr>
<tr>
<td></td>
<td>___ hemoglobin</td>
</tr>
<tr>
<td></td>
<td>___ oxygenated blood leaves the heart</td>
</tr>
<tr>
<td></td>
<td>___ main vein which returns blood to the heart</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 13</th>
<th>The Heart is a Special Muscle</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td></td>
</tr>
</tbody>
</table>

### WebLinks

#### Heart Attack!!

List 3 symptoms that indicate a possible heart attack.

1. __________
2. __________
3. __________

### Heart Rhythms - identify these heart rhythms:

- __________
- __________
- __________
### Animated Heart

Select *Human Heart/Animated Heart*

Study the flow of blood through the heart

### Narrated Tour (of the heart)

Select *Human Heart/Narrated Tour*

Hint: click the arrow to continue through the tour

Label:

- Tricuspid valve
- right ventricle
- pulmonary arteries
- left ventricle aorta
- superior vena cava
- inferior vena cava
- right atrium
- left atrium
- bicuspid valve

### Heart Rate Simulator

1. Listen to your own heart beat (use the stethoscope)
2. Set the simulator as close to your own resting heart rate as you can. What is the setting? _____
3. Now run in place for about 30 seconds. Listen to your own heart again.
4. Set the simulator to your new heart rate. What is the setting? _____
5. The Mayo clinic suggests a healthy exercise heart rate for someone 18 years old and without health problems should be between 121 to 172 beats per minute. Set the simulator so you can hear the upper and lower limits of this range.

### A.D.A.M video clips

View as many clips as you have time for but don't over do it.
You could be here all week!!

Choose from these categories (upper animation list)

- Heart and Lungs
- Lungs and Breathing
- Cardiology (the coronary artery bypass graft is pretty good)
Heart Contraction and Blood Flow

Label all four VALVES in this diagram:

- aortic valve
- tricuspid valve
- pulmonary valve
- mitral valve

Blood Flow

Study the animation.

1. What valves close to cause the "DUBB" sound? Hint: you will need to "step through" the animation.

Breathing

View the Lesson and take the test:

Q1  A  B  C  (circle one)
Q2  A  B  C  (circle one)

The Circulatory System

View the Lesson and take the test:

Q1  A  B  C  (circle one)
Q2  A  B  C  (circle one)

Respiratory Simulator

Label the diagram (the labels will show after you resuscitate him)

Blood and Circulation Simulator

Label the diagram (the labels will show after you resuscitate him)

The Heart is a Double Pump

View the Lesson and take the test:

Q1  A  B  C  (circle one)
Q2  A  B  C  (circle one)