COURSE	7240 Health Science I		Unit A	Human body structure and function
ESSENTIAL STANDARD	2.00	B2	35%	Understand the body's use of nutrients.
OBJECTIVE	2.02	B2	10%	Understand the functions and disorders of the circulatory system
ESSENTIAL QUESTION	▪ *What are the functions of blood?* ▪ *What are some disorders of the blood?* ▪ *How are blood disorders treated?* ▪ *What are the functions of the circulatory system?* ▪ *What are some disorders of the circulatory system?* ▪ *How are disorders of the circulatory system treated?* ▪ *How do you relate the body's use of nutrients to blood and the circulatory system?*			

Unpacked Content

I. Functions of the blood
   A. Transportation
   B. Regulation
      1. Heat
      2. Acid/base balance
   C. Protection
II. Plasma
III. Erythrocytes
   A. Erythropoiesis
   B. Hemolysis
IV. Leukocytes
   A. Agranulocytes
   B. Granulocytes
   C. Inflammation
V. Thrombocytes
VI. Blood types
   A. Agglutination
   B. Blood reactions
VII. RH factor
VIII. Blood Disorders
   A. Anemia
   B. Contusion
   C. Embolism
   D. Erythroblastosis fetalis
   E. Hematoma
   F. Hemophilia
   G. Leukemia
   H. Multiple myeloma

I. Polycythemia
J. Septicemia
K. Sickle cell anemia
L. Thrombus

IX. Functions of the heart and blood vessels
A. Pump
1. Electrical activity
2. Systemic circulation
3. Cardiopulmonary circulation
B. Transportation

X. Circulatory system disorders
A. Aneurysm
B. Angina pectoris
C. Arrhythmias
D. Coronary artery disease
E. Heart failure
F. Hypertension
G. Murmurs
H. Myocardial infarction
I. Peripheral vascular disease
1. Arteriosclerosis
2. Atherosclerosis
J. Pulmonary edema
K. Transient ischemic attack
L. Varicose veins

XI. Relevance of nutrients to the blood and circulatory system

2.02 Functions of the blood **Name_____**
Handout **Date_____**

Directions: Complete the handout while viewing the PowerPoint presentation. Record any class discussion on the back of your paper, if necessary.

Introduction to functions of the blood
Transportation
Regulation:
- Heat
- Acid/base balance

Protection

Structure	Function	Relevance to Health
Plasma Plasma Proteins Other structures		
Erythrocytes		
Leukocytes Agranulocytes Granulocytes		
Thrombocytes		
Blood types		
Rh factor		

2.01 Blood structures and functions Handout

Name _____
Date _____

Directions: Unscramble the word and, in your own words, explain the function of each blood structure unscrambled. Use the back of the handout to document responses, if needed.

1. HOTMLYYCPE _____
_____

2. PASLMA _____
_____

3. IONEHIPOLS _____
_____

4. YOTBREHTOCM _____
_____

5. APLOIBHS _____
_____

6. RRECYOYETTH _____
_____

7. SLCUKEOTYE _____
_____

8. LTOHNREPIU _____
_____

9. BLAMIUN _____
_____

10. NHIEBMOOGL _____
_____

2.02 Blood Types **Name _____**
Handout **Date _____**

Directions: Fill in the chart and answer questions below. Participate in classroom discussion related to blood types. Use the completed handout as a study guide.

Blood Type	Antibodies?	Can donate to?	Can receive from?
A			
B			
AB			
O			

1. How does the Rh factor effect blood donation/receiving?
   _____

2. What is ertyhroblastosis fetalis? What is the cause? Who is at risk? How is it treated?
   _____
   _____
   _____

3. What would happen if someone received the wrong blood type? The wrong Rh factor? How and why are the outcomes different?
   _____
   _____
   _____

4. What blood type is considered the universal recipient? Explain why.
   _____
   _____

5. What blood type is considered the universal donor? Explain why.
   _____
   _____
   _____

Handout **Date _____**

Directions: Record notes about blood disorders while viewing the PowerPoint presentation. Record class discussion and additional notes on the back of the page.

Disorder	Cause	Symptoms	Treatment	Prognosis
Anemia				
Contusion Hematoma				
Embolism Thrombus				
Erythroblastosis fetalis				
Hemophilia				
Leukemia				
Multiple myeloma				
Polycythemia				
Septicemia				
Sickle cell anemia				

2.02 Functions of the Heart and Blood Vessels Handout

Name _____
Date _____

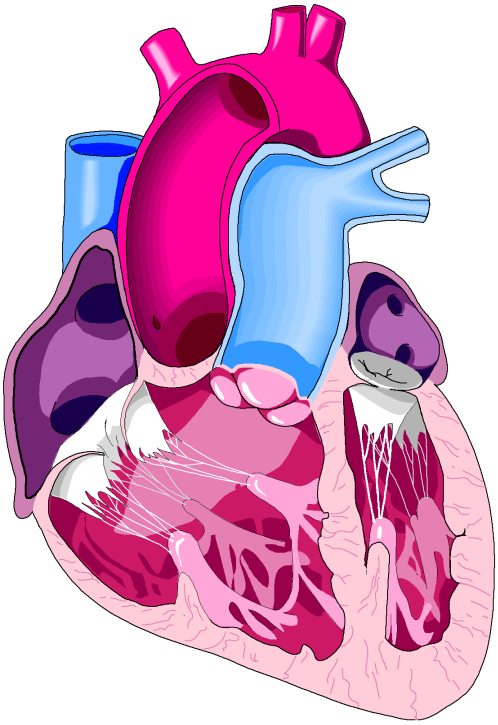
Directions: Complete the table below by answering the questions in the first column. Be prepared to participate in class discussion. Make any corrections while viewing the PowerPoint presentation.

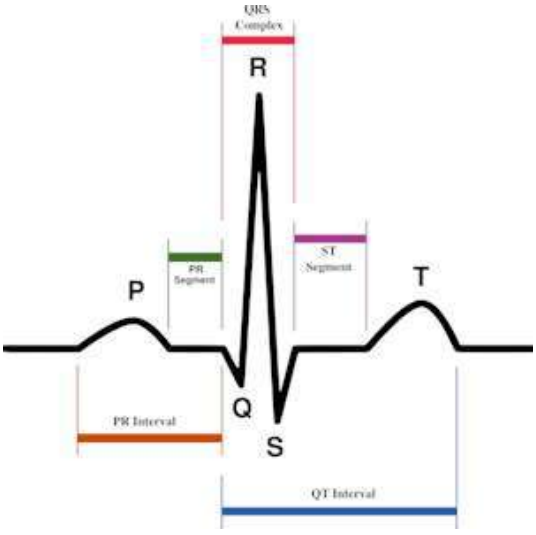
Functions of the Heart and Blood Vessels	
Pump	**Relevance to Health**
1. Explain the concept of a pump. 2. How does this relate to heart function? 3. What makes the lubb-dupp sound? 4. What does blood pressure have to do with it? 5. What makes the heart work? 6. Explain the electrical activity of the heart. 7. What is an EKG? 8. What makes the pump effective?	
Transportation	**Relevance to Health**
1. What does the heart transport? 2. What is involved in the transportation process? 3. How is transportation a circulatory function? 4. Explain systemic circulation and list the steps in the flow. 5. Explain cardiopulmonary circulation and list the steps in the flow. 6. How is the circulatory system related to the body's use of nutrients? 7. What is the role of arteries in circulation? 8. What is the role of veins in circulation?	

2.02 Electrical Activity of the Heart Handout (Optional)

Name _____
Date _____

Directions: Complete this handout while viewing the PowerPoint presentation. Illustrate the conduction system of the heart and its relevance to heath.





2.02 Circulatory System Disorders Research Handout **Name _____**
Date _____

Directions:

1. Choose a circulatory system disorder from the list below or as assigned.
2. Follow the HOSA competitive events guidelines for Extemporaneous Health Poster to develop a poster representing the disorder that you choose.
3. Prepare a poster that demonstrates the nature of the disorder to include but not limited to:
    a. Summary of the condition
    b. Symptoms of the condition
    c. How the condition is diagnosed
    d. How the condition is treated
    e. What is the prognosis
4. Present your poster to the class.
5. The HOSA competitive events rubric for Extemporaneous Speaking will be used to grade your presentation.
6. Note: The teacher will determine the amount of time allotted for the activity.

Circulatory System Disorders:

A. Aneurysm
B. Angina pectoris
C. Arrhythmias
D. Arteriosclerosis
E. Atherosclerosis
F. Coronary artery disease
G. Heart failure
H. Hypertension
I. Murmurs
J. Myocardial infarction
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