Human Body

Digestive System

Grade 8 Science

Name: _____

What to Do

- Refer to section 3.3, Organ Systems in Humans, beginning on page 79 of *SCIENCEPOWER™ 8* to complete this review of the digestive system.

1. Using the diagram on page 79, label the parts of the digestive system.
2. Which structure connects the mouth and the stomach?

   Esophagus

3. Which organ produces insulin?

   Pancreas

4. In which structure does most of the absorption of nutrients occur?

   Small Intestine

5. The small intestine is connected to the stomach at one end and which structure at the other end?

   Large Intestine

6. Why is the digestive system important to humans?

   Need it to break food down into small particles to be absorbed by your body

7. What do you think is the function of the saliva produced by the salivary glands?

   To lubricate food and to begin to break down food using it's enzymes

Human Body

Digestive System

Grade 8 Science

Name: _____

8. What is the function of the stomach?

To break down food using acids and squishing action

9. Why do you suppose many different structures are needed by the digestive system?

No one part could do all the jobs that the digestive system does.

Human Body

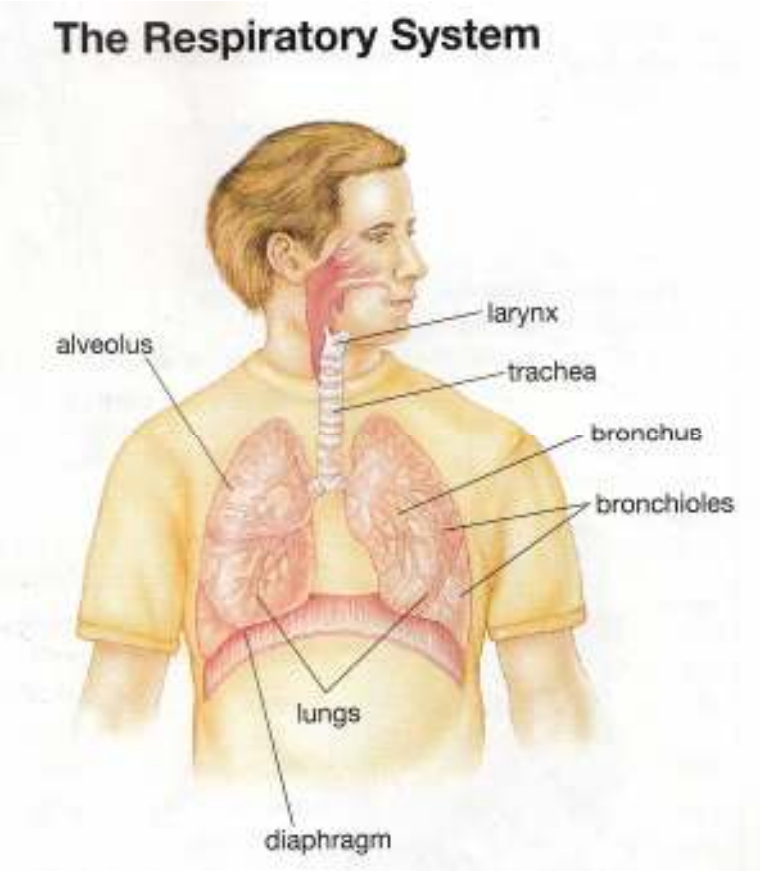
Respiratory System

Grade 8 Science

Name: _____

What to Do

- Refer to section 3.3, Organ Systems in Humans, beginning on page 79 of *SCIENCE-POWER™ 8* to complete this review of the respiratory system.



1. Using the diagram on page 79, label the parts of the respiratory system.
2. What is the main tube connecting the mouth to the lungs?

   Trachea

3. Which muscle plays a main role in breathing?

   Diaphragm

4. In which structures does gas exchange occur?

   Alveolus/Capillaries

5. What are the main organs of the respiratory system?

   Lungs Trachea diaphragm

6. Why is the respiratory system important to humans?

   Gets oxygen to the cells and gets rid of carbon dioxide

7. Why do you think many different structures are needed by the respiratory system?

Human Body

Respiratory System

Grade 8 Science

Name: _____

8. Why do you think that there are so many alveoli?

More surface area therefore, more oxygen in and carbon dioxide out

_____

9. Do you think that smoking harms your respiratory system? Explain.

_____

_____

Human Body

Circulatory System

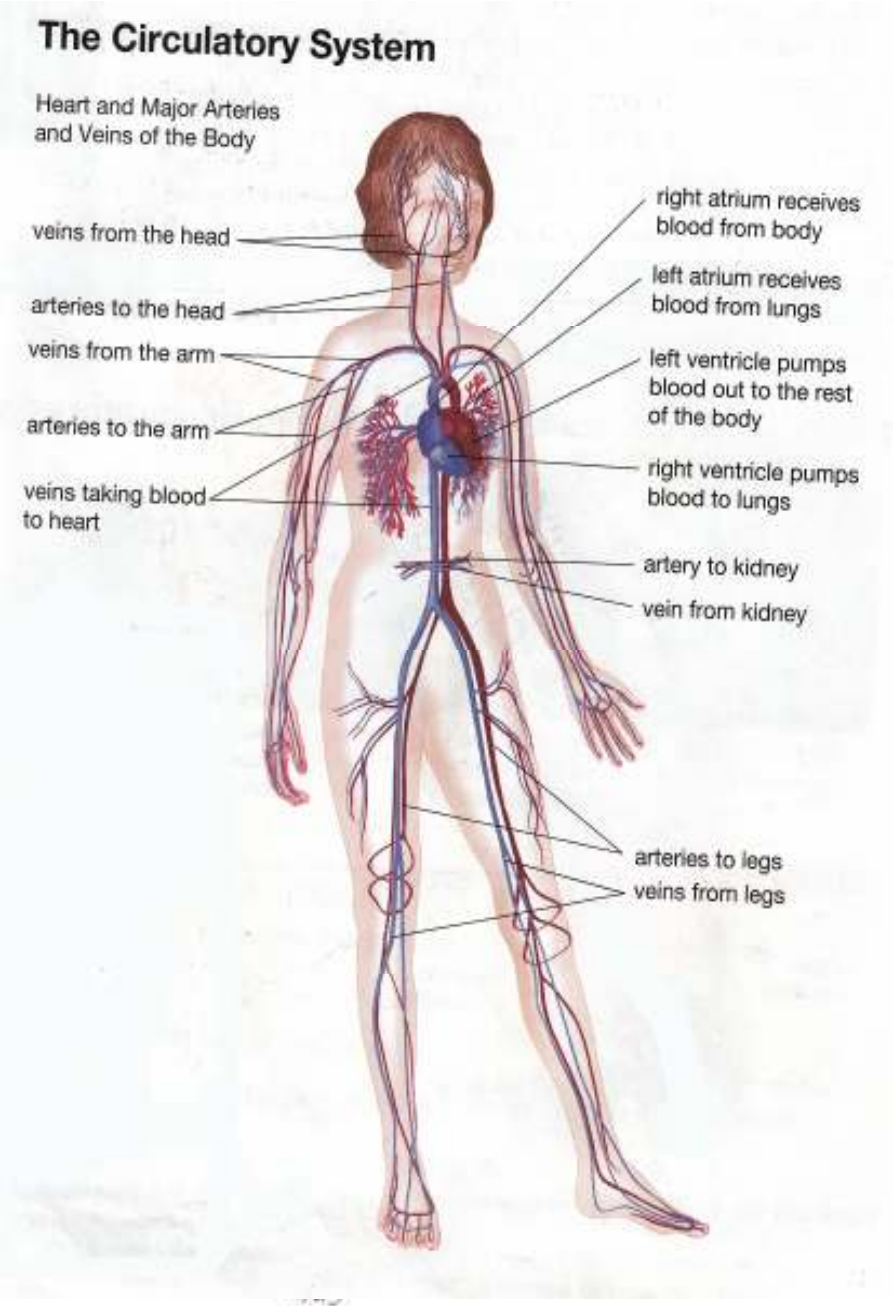
Grade 8 Science

Name: _____

What to Do

- Refer to section 3.3, Organ Systems in Humans, beginning on page 79 of *SCIENCEPOWER™ 8* to complete this review of the circulatory system.

1. Using the diagram on page 80, label the parts of the circulatory system.



Human Body

Circulatory System

Grade 8 Science

Name: _____

2. Which structures connect the arteries and veins?

Capillaries

3. Which vessels transport blood away from the heart and have thick muscular walls?

Arteries

4. Which vessels transport blood toward the heart and have valves?

Veins

5. Which part of the heart receives blood from the lungs?

Left Atrium

6. Why is the circulatory system important to humans?

Gets blood (oxygen and food) to all cells in body

7. Which structures are included in the circulatory system?

Veins, Arteries, Heart, Capillaries

8. Why are capillaries small and thin?

To allow gases to pass through and food particles

9. Name the parts of the heart. Why do you suppose the heart needs all these parts?

Aorta, Veins, R L atrium, RL ventricle, Valves

Human Body

Grade 8 Science

Connections Between Circulation and Respiration Systems

Name: _____

What to Do

- Using the information on pages 81–85 of *SCIENCEPOWER™ 8*, use this worksheet to help review your understanding of how different systems in the body work together.

1. Which system connects all the other systems in your body?

Circulatory System

2. Give two examples of systems that must work together with the circulatory system.

Digestive/Respiratory Systems

3. Explain how each of these systems works together with the circulatory system.

4. The respiratory system is really a collection of tubes that end in a bunch of air sacs. List the tubes that help you to breathe and their diameter in the chart below:

Name of tube	Diameter of tube
Trachea	20mm
Bronchus	12 mm
Alveoli	0.2 mm

5. What are the tiny air sacs at the end of the tubes called?

Alveoli/Alveolus

Human Body

Grade 8 Science

Connections Between Circulation and Respiration Systems

Name: _____

6. What are the tiniest tubes in the circulatory system called?

Capillaries

7. How are these tiny tubes related to the air sacs?

Capillaries and the air sacs both have very thin tissue to allow gases to exchange.

8. What is diffusion? (If you need to review this term refer to page 41 of *SCIENCEPOWER™ 8*).

Movement of particles from a high concentration to a low concentration

9. What important role does diffusion play in connection with the respiratory and circulatory systems?

Carbon dioxide and Oxygen diffuse out and into the capillaries based on high and low concentrations

10. Which substances are exchanged between the blood in the capillaries and the air in the air sacs?

Carbon dioxide and Oxygen

Human Body

Grade 8 Science

Getting Food to Body Cells

Name: _____

What to Do

- Refer to page 84 of *SCIENCEPOWER™ 8* to help you complete this page.

1. What are two functions of your bloodstream?

   To deliver food particles and dissolved gases and other materils to every cell and to carry away cell wastes

2. Where does the transfer of food from the digestive system to your circulatory system take place?

   In the Villi in the Small Intestine

3. Digestion is one of the main functions of the digestive system. What does digestion mean? (You may need to look up the word in a dictionary.)

   To break down food into tiny particles so the body can absorb them into the blood stream for cell nourishment.

4. The process that allows food particles to pass from the intestine to the circulatory system is called Absorbtion.

5. Write down in your own words the two main functions of the digestive system.

6. What are villi?

   Finger like protrusions that dissolved food particles pass through to get into the circulatory system. They line the inside of the small intestine.

Human Body

Grade 8 Science

Getting Food to Body Cells

Name: _____

7. In what way are the villi in your intestines and the alveoli in your lungs similar?

Both are thin tissues with capillaries close by that allow substances into the blood stream.

8. Why are there so many villi and air sacs?

Increases the surface area without taking up larg amounts of space in the body. Humans need lots of food nutrients and oxygen.

9. In the space provided, draw and label a diagram of a villus. (You may refer to Figure 3.19 of *SCIENCEPOWER™ 8*.)

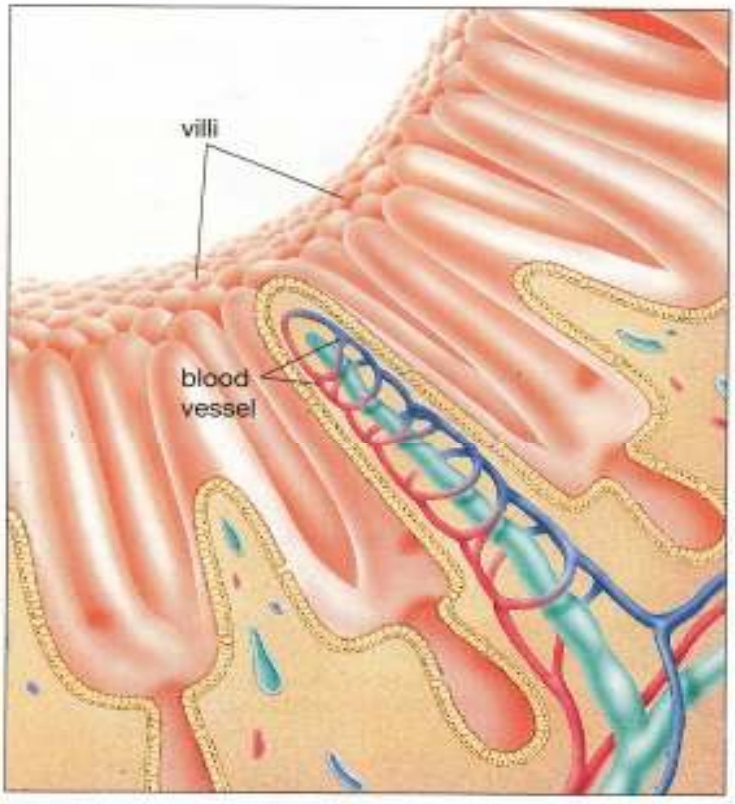


Figure 3.19 The villi in the small intestine. These structures increase the surface area of the small intestine for more efficient absorption of nutrients.

Human Body

Organizing Organ Systems

Grade 8 Science

Name: _____

What to Do

- With a partner, read through the following list of tissues, structures, and organs. Sort them in their appropriate organ systems. The boxes below the list represent organ systems, and you can place the names of organs inside them.
- When you have completed this, try to answer the question on how organs need to work together.

1. **List of Tissues, Structures, and Organs**

brain	liver	nerves	pancreas	small intestine
spinal cord	tongue	heart	blood	stomach
arteries	lungs	trachea	nasal passage	esophagus
biceps	veins	capillaries	bronchus	alveoli
tendon	hamstring	villi	gall bladder	diaphragm

Organ system: Digestive

Stomach Tongue Sm. Intestine Liver Esophogus Pancreas Villi Gallbladder

Organ system: Respiratory

Lungs Alveoli Trachea Diaphragm Nasal Passage Bronchus

Organ system: Muscular

Biceps Tongue Tendon Hamstring

Organ system: Nervous

Brain Spinal Cord Nerves

Organ system: Circulatory

Arteries Capillaries Veins Heart Blood