Session 1

Body Systems and Structures

Teacher Notes

Heart – The heart is a muscle that pumps blood to all parts of the body by contracting and releasing in a repeated manner. It contains four chambers. Americans suffer from many different heart-related illnesses, including high blood pressure, stroke, heart disease, hypertension and heart attack.

Lungs – The lungs are a pair of large organs located in the chest cavity. Their main function is to deliver oxygen to the blood, remove carbon dioxide from it, and enable breathing. Common diseases affecting the lungs include asthma, lung cancer and emphysema.

Skin – Skin is the largest organ of the human body. Its primary function is to protect the body from external or foreign organisms which can cause infection. Skin disorders such as eczema and psoriasis currently affect a number of Americans.

Blood – Blood is a mixture of cells and liquid, called plasma, and performs several important functions. It circulates throughout the human body and carries crucial things, such as vitamins, nutrients, hormones and oxygen, where they need to go. It is also an important part of the body’s defense system, as it contains white blood cells which fight infection. The most common diseases which affect or involve the blood include leukemia, lymphoma and diabetes.

Digestive System – Digestion is the process by which the human body breaks down food and converts it into smaller molecules which can be absorbed by the body. The digestive system consists of two main parts: the small and large intestines. Digestive disorders are vast and can vary greatly, but may share some common symptoms, such as diarrhea, high acidity, constipation, gas and bloating.

Kidneys – The human body contains two kidneys, although it can survive with only one. These organs serve as a filter for the human body; they process blood and excrete waste in the form of urine. Several disorders affect the kidneys, including diabetes, high blood pressure and certain cancers.

Liver – The liver is located in the abdominal cavity, and is the largest internal organ and gland in the human body. It is responsible for the production of certain proteins, glucose and vitamin storage. It also plays a crucial role in the filtration process, as it detoxifies the body by getting rid of unwanted chemicals. Liver disease is one major illness affecting the liver, and is generally caused by over-consumption of alcohol. Other diseases include cirrhosis and hepatitis.

Spine – The spine, or “backbone,” is made up of vertebrae, or small bones, discs, and the spinal cord. The spinal cord is a small group of nerves which is protected by the vertebrae, and is a crucial part of the body’s central
nervous system. Ailments which affect the spine include arthritis, slipped or herniated disk, and sciatica.

**Central Nervous System** – The central nervous system is composed of the brain and the spinal cord. Its most important functions include behavior control through brain, as well as sensory perception, but it also triggers the functioning of other systems in the body. Among the most serious disorders affecting the CNS is multiple sclerosis, a painful and often debilitating disease currently affecting many Americans. Certain types of Lyme disease may also have an impact on the CNS.

For additional resources:
- www.bbc.co.uk/science/humanbody/body/factfiles/organs_anatomy.shtml
- www.biotopics.co.uk/life/orgsys.html
- www.merck.com/mmhe/sec01/ch001/ch001d.html
- www.liverfoundation.org/education/info
- www.arthritis.org

**Objectives**
Learners will:
- Be able to speak, read and write about the body’s structures and systems.
- Be able to identify the body’s systems and structures.
- Be able to talk about the function/functions of each part.
- Be able to name and describe the five senses.

**Materials Needed**
- Pictures: Body structures and systems
- Index cards
- Chart paper and markers
- Game cards: Body parts and organs
- Student worksheets: 1a (picture of body showing structures and systems), 1b (cloze listening), 1c (for Activity 6: “What does/do the ___ do?”), 1d (Body Facts), 1e (Crossword – homework)
- Learner Survey (optional)

**Warm-up Activity**
Do an activity to get to know a little about your class. Use the activity below, or another warm up activity.

1. Introduce yourself to the learners: your name, country of origin, how long you have been in the city, etc. Then ask each learner to do the same. **OR** do the name chain: Say your name and the next learner will say his/her name and your name, and the next learner will say his/her name and the names of the people before.

2. Introduce the lesson to the class. Say “What do you want to learn in this class?” Elicit ideas from the class and write them on the board. You may also come up with one or two ideas to start this activity, especially when the learners may be a bit shy about volunteering a response. **Optional:** Hand out the Learner Survey. After this is completed, tell the learners that today’s lesson is about body’s systems and structures.
**Activity 1: Body Alphabet**

1. Write the letters A through Z on a sheet of chart paper. Explain to learners that they should write a body part or structure on each line.
2. Model one letter (e.g., “arm” for A).
3. Divide class into groups of 4 to 6. Give each group one piece of chart paper and a marker.
4. Assist groups as they work.
5. Ask one group to come up and present their words. Go over any words that are new for some learners.
6. Ask learners from the other groups to add words to the list, so that you have one composite list (e.g., add blood, bones, brain to B, if learners have those words).

*(NOTE: If the following words are not on the list, add and teach them: spine, tongue, jaw, chin, elbow, ankle, cheek, throat, waist, wrist, joint, and knuckle.)*

**Activity 2: Naming the Five Senses and the Body’s Systems and Structures**

1. Draw the outer parts of the body: eyes, nose, ears, tongue; and introduce skin. Elicit response from the learners by asking, “What do we use the eyes, the ears, the nose, the tongue, and the skin for?” Write the answers on the board. Then introduce the five senses—sight, smell, hearing, taste and touch. Ask the students to name the five senses and the corresponding parts of the body.
2. For additional practice, ask the learners to tell you five things you can see. Do this as a class, then assign one sense to each small group.

**Activity 3: Identifying Functions**

1. Using the picture cards of the organs and body parts (or Worksheet **1a**), ask the learners to identify the parts of the body. “What do you think the heart does?” Write the response on the board.
2. Continue asking and/or providing the information about each body part in the picture.
   
   *(Optional): List possible problems with each organ/part. Then ask the learners to write the information on the board. Elicit information about associated diseases if appropriate (e.g., What are some lung problems?)*
3. Give each learner a copy of Worksheet **1a**. Have the learners fill in the blanks and check as a class.

**Activity 4: Cloze Listening Exercise**

1. Ask the learners to listen to (or read it to them) the recording on the function of body’s systems/structures and write down the parts they hear. Then check the answers as a class.
2. Distribute the cloze exercise (Worksheet **1b**.) Ask learners to listen to the recording again.
3. Ask learners to fill in the blanks. Play the listening exercise one more time.
4. Ask learners to check their answers in small groups or with a partner.
5. Ask learners to write the sentences on the board.
Activity 5
Concentration Game

1. Divide the class into 3 to 4 groups. Each group gets a set of pictures, as well as a set containing the printed names of the body parts.

2. Spread the cards with the names of the body’s systems and structures face down on the right side of the table, and the corresponding pictures face down on the left side in random order.

3. The first player/learner will pick one card from each pile. If the picture and word match, he/she keeps them; if not, he/she places the cards back on the table exactly where they were. Then, the next learner does the same.

4. The learner who gets the most cards wins.

Activity 6
Worksheet

1. Review parts of the body systems and the functions. From the Body Structure definition strips, have each student choose one. You can place the strips in a box or on the table for students to choose.

2. Distribute Worksheet 1c (asking the functions of each body part) to the learners.

3. Tell the learners they are going to find someone who can tell him or her the function of each particular part. Learners will practice asking a classmate, “Can you tell me what the heart does?”

4. Ask each learner to go around asking classmates until he or she completes the worksheet.

5. Ask learners to say out loud what he/she has completed.

(NOTE: Alternatively, this activity can be used as an introduction to Session 2.)

Teacher Notes

Body Facts: Additional Information

(Note: You do not need to go over this information with your learners. It is provided in case anyone asks a question about it.)

Weight of Organs
- The average weight of the human heart is 9 to 11 ounces.
- The average weight of an adult human kidney is a quarter of a pound.
- The liver weighs 3 pounds.

Size of Organs
- The liver is the largest internal organ. It is a reddish-brown color.
- Each kidney is about 5 inches long and 3 inches wide.
- The adult heart is the size of 2 fists and the heart of a child is the size of 1 fist.

Liver Regeneration
- The liver performs more than 500 functions.
- Surgeons have found that they can remove as much as 80% of the liver and, within a year, the liver will grow back.

Small Intestine
- Food stays in the small intestine from 1 to 4 hours.
- The small intestine is 3 grown men tall and 2 fingers wide.
Food Consumed Per Year
• The U.S. Department of Agriculture estimates that the average person in the United States consumes 5 lbs of meat, 1.6 lbs of dairy products, 0.2 lbs of fats and oils, 0.8 lbs of fruits, 0.7 lbs of vegetables, 0.5 lbs of grains and 0.4 lbs of sugars per day, for a total of 4.7 lbs of food per day.
• As part of the diet, we consume 156 lbs of added sugar, which is 31 5-lb bags per year.

Heartbeat
• Almost 2000 Americans die of heart disease per day—44 deaths per second.
• Your heart beats about 100,000 times in one day.
• The heart pumps about 1 million barrels of blood during an average lifetime—enough to fill more than 3 super tankers.

Breaths Per Minute
• We should be breathing in 4–7 times per minute regardless of body chemistry.
• With fewer breaths, you breathe in fewer pollutants and your nervous system is less taxed.

Adult and Baby Bones
• Your bones are strongest when you are in your 20s, so building up calcium by age 30 will help to prevent diseases like osteoporosis.
• Some adults only have 205 bones.
• Babies have more bones than adults because some of the bones have not yet joined together.

Activity 7

Body Facts (optional)

(NOTE: This activity is designed to promote learner discussion, not necessarily to learn facts. Encourage learners to talk to each other and make guesses.)

1. Give each group of 4–6 learners a copy of Body Facts (Worksheet 1d).
2. Ask them to guess the answers.
3. Walk around to assist them.
4. Check as a class.

Homework

Have learners complete the Crossword Puzzle (Worksheet 1e) on Body Systems and Structures.
**Which topics are important for you to learn in class? Please circle.**

<table>
<thead>
<tr>
<th>Topic</th>
<th>1 = very important</th>
<th>2 = a little important</th>
<th>3 = not important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts of the body</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How to use medicine</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Making a doctor’s appointment</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Talking with the doctor</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Healthy food</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Losing weight</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Learning about exercise</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Learning about disease</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Which diseases? Please write:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>911 emergency</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Using the internet for health</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Getting health insurance</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Please answer these questions:**

I have health insurance.  
Yes____  No____

I have a family doctor.  
Yes____  No____
Major Organs and Parts of the Body

- Skin
- Lungs
- Heart
- Liver
- Stomach
- Kidney
- Large Intestine
- Small Intestine
Listen to the recording carefully and fill in the missing words.

Do you ever think about your body’s hard work every day? You don’t have to give it directions — it just works.

For example, your heart pumps your blood. Even when you sleep, your heart moves your blood. And your blood is working too. Do you need to say, “Blood, please bring nutrients to my cells?” Of course not! It just works. Or do you say, “kidneys and liver, please clean my body?” No, the liver and kidneys do their cleaning work. You don’t need to ask them! And how about your lungs? Do you say, “Lungs, please breathe for me?” No, your lungs breathe automatically. You don’t need to ask.

Heart moving blood…
Blood moving nutrients…
Liver and kidneys cleaning…
Lungs breathing…
Our bodies are amazing!

(First listening: Do not hand out the cloze — just ask learners to listen and write down the body parts they hear.)

(Second listening: Hand out the cloze. Ask the learners to listen and fill in the missing words. When they finish, check their answers and comprehension.)
# Body Systems and Structures

<table>
<thead>
<tr>
<th>Parts of the Body</th>
<th>What does/do the ________________ do?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>The heart pumps blood through your body.</td>
</tr>
<tr>
<td>Kidneys</td>
<td>The kidneys process blood and eliminate waste.</td>
</tr>
<tr>
<td>Liver</td>
<td>The liver removes unwanted chemicals from your body.</td>
</tr>
<tr>
<td>Lungs</td>
<td>The lungs deliver oxygen to the blood and help you breathe.</td>
</tr>
<tr>
<td>Skin</td>
<td>The skin covers and protects your body.</td>
</tr>
<tr>
<td>Spine</td>
<td>The spine is the backbone of your body.</td>
</tr>
<tr>
<td>Blood</td>
<td>The blood is the red liquid that circulates throughout your body.</td>
</tr>
</tbody>
</table>
# Body Facts

## Answer Key

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which weighs more: your liver, your heart or your kidneys?</td>
<td>The heart</td>
</tr>
<tr>
<td>How many pounds of food do we eat in one year?</td>
<td>1,100 lbs. (500 kgs)</td>
</tr>
<tr>
<td>How long is your large intestine?</td>
<td>5 feet (1.5 meters)</td>
</tr>
<tr>
<td>How many times does your heart beat in your lifetime?</td>
<td>3 billion</td>
</tr>
<tr>
<td>Which is larger: your liver, your kidneys, your heart?</td>
<td>Your liver</td>
</tr>
<tr>
<td>How many times do we breathe per minute?</td>
<td>12-15 (when we are resting)</td>
</tr>
<tr>
<td>What organ can grow back?</td>
<td>The liver</td>
</tr>
<tr>
<td>How many bones do adults have in their bodies?</td>
<td>206</td>
</tr>
<tr>
<td>How long is your small intestine?</td>
<td>22 feet</td>
</tr>
<tr>
<td>How many bones do babies have in their bodies?</td>
<td>300</td>
</tr>
</tbody>
</table>
Teacher's Version

PARTS OF THE BODY CROSSWORD PUZZLE

ACROSS
1 Don't _____________ the hot stove.
5 This can get sore when you are sick.
7 These keep the inside of your body clean.
8 You need these to breathe.
10 Your body's red liquid.
11 This connects your arm and your hand.
14 This is part of your foot near your ankle.
15 This pumps through your body.

DOWN
1 You can _____________ food with your tongue.
2 Your ears help you _____________.
3 You have a pair of these on your face.
4 You use your nose for this sense,
6 This connects your foot with your leg.
9 This bone moves your mouth.
12 This is the column of your bones in your back.
13 You use your eyes for this sense.

Worksheet 1e – Crossword Homework
<table>
<thead>
<tr>
<th>![Image 1]</th>
<th>![Image 2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image 3]</td>
<td>![Image 4]</td>
</tr>
<tr>
<td>![Image 5]</td>
<td>![Image 6]</td>
</tr>
</tbody>
</table>

**Body Parts Concentration Game -1**
Body Parts Concentration Game -2

Body Parts & Organs Game Cards – 2
Body Parts Concentration Game - 3

Body Parts & Organs Game Cards – 3
<table>
<thead>
<tr>
<th>Skin</th>
<th>Lungs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>Kidney</td>
</tr>
<tr>
<td>Spine</td>
<td>Blood</td>
</tr>
<tr>
<td>Liver</td>
<td>Tongue</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>Wrist</td>
<td>Chin</td>
</tr>
<tr>
<td>Knuckle</td>
<td>Throat</td>
</tr>
<tr>
<td>Cheek</td>
<td>Jaw</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
</tr>
<tr>
<td>Waist</td>
<td>Ankle</td>
</tr>
<tr>
<td>Eyelid</td>
<td>Brain</td>
</tr>
</tbody>
</table>