

Discipline: Science and Technology
Standard Category: Biological Sciences
Lesson Focus: Organization of multi-cellular organisms

Suggested Level:
Middle

PA Standard(s):	Related TESOL Standard(s):
3.3.7A: Describe the similarities and differences that characterize diverse living things. <ul style="list-style-type: none"> Describe how the structures of living things help them to function in unique ways. 3.3.7B: Describe the cell as the basic structure and functional unit of living things.	Goal 2: To use English to achieve academically in all content areas. Standard 3: Students will use appropriate learning strategies to construct and apply academic knowledge.

Lesson Focus:
Organization of multi-cellular organisms

Teaching Strategies:
Whole group instruction

Key Objectives in Accordance with TESOL Level:

Pre-Conversational/ Beginning	Intermediate	Advanced
Students will be able to: <ul style="list-style-type: none"> Identify that the cells carry on all life functions. Complete an organizer with a partner matching systems and functions. 	Students will be able to: <ul style="list-style-type: none"> Identify the function of cells based upon the pictures provided. List one part of the body involved in each system. 	Students will be able to: <ul style="list-style-type: none"> Explain cell specialization. Explain how systems work together i.e. skeletal/muscular digestive/excretory circulatory/respiratory

Brainstorming

Use of organizers

Discussion

Cooperative groups

Independent work

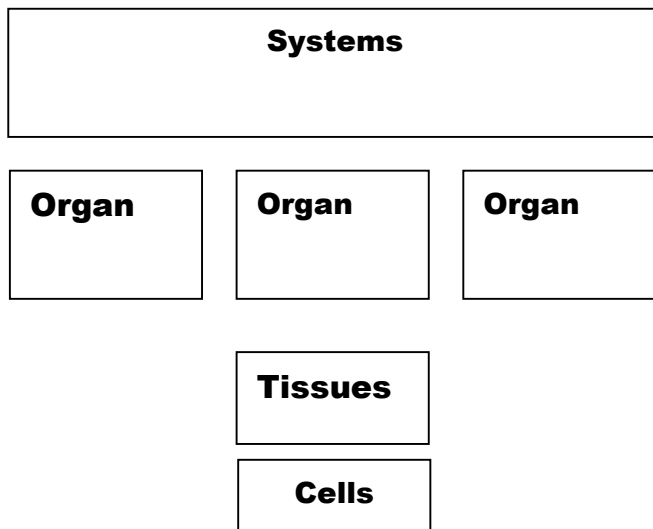
Materials:

- Pictures of cells, tissues, organs, organ systems (The easiest cells to identify are the skin and bone. These pictures are usually found in most life science textbooks).
- KWL Chart
- Systems/ Functions Chart
- Graphic organizer for cell, tissue, organ, organ systems
- Matching cards for systems/functions

Procedures:

- Using a *KWL Chart*, list all things students know about the human body.
- Cluster student *responses* into systems and functions.
- Assign students into pairs and hand out the matching cards for systems/functions activity

4. Allow students to use text books with pictures to assist the matching process
ESL students at all levels benefit from the use of visuals.
5. Ask students to pair the function with the appropriate system.
6. Report out as pairs and complete the Systems/Functions Chart
Beginning ESL students may not feel comfortable participating in whole-group speaking activities. Don't force them to speak. Beginners tend to develop listening skills in English before attempting to speak it.
7. Tell students that all of these systems some things common. They are all made up of smaller parts. These smaller parts called organs. These organs are made up of even smaller parts which are known as tissues. Tissues are made up of cells which are too small to be seen without a microscope.
8. Put a *graphic organizer* on the board. Show that cells are small and specialized they form tissues which form organs that are grouped into organ systems.



9. Ask students to examine the pictures of tissues and cells from the test book. How are they different?
10. Tell students that different cells and tissues perform different functions.
11. Teach vocabulary, prefixes (multi-, uni-)

Assessment:

Show understanding of organization by completing work on tissue types and organ systems and functions.

Beginning

Completed organizer, match cards for system and function

Intermediate

Complete worksheet on systems and functions. List one body part involved in each system

Advanced

Write an expository piece, “How Systems Work Together.”

Notes:

Terms to Know:

- Multicellular
- Unicellular
- Cell
- Tissue (Muscle, Connective, Nerve, Epithelial)
- Organ
- Organ System
 - Skeletal
 - Muscular
 - Skin
 - Digestive
 - Circulatory
 - Respiratory
 - Excretory
 - Endocrine
 - Nervous
 - Reproductive

Helpful websites for Organ Systems:

<http://gened.emc.maricopa.edu/bio/bio181/BIOBK/BioBookANIMORGSYS.html>

http://www.kidinfo.com/Health/Human_Body.html

<http://botany.miningco.com/library/weekly/aa071201a.htm>

<http://library.thinkquest.org/10348/>

SYSTEMS / FUNCTIONS CHART

SYSTEMS	FUNCTIONS

Systems/Functions Matching Cards

System that provides oxygen to the cells and removes carbon dioxide	Skeletal System	Respiratory System
System that permits you to see, hear, touch, smell and taste and respond to the environment	System converts food into energy or cell building material	Nervous System
Excretory System	System that allows the body to get rid of gasses, liquids and solid wastes	System that carries a variety of substances throughout the body
Skin	System that provides a protective covering for your body	

Digestive System	Reproductive System	System that controls the release of hormones in the body
System that gives the body its shape and structure	System that allows for the creation of a new person	Muscular System
Circulatory System	Endocrine System	System that provides the body with the ability to move