Your team at the (create a name for your ad agency) has been hired as a travel consultant to design a luxury tour through one of the Human Body Systems. Before you can collect your fee from the Holistic Body Tour, you must produce a brochure.

The owner of the travel bureau, Ms. Image, has informed you that in order to win the contract you must highlight the trendy spots, the exciting activities, and the imports and exports of the areas. For insurance considerations, you must also discreetly mention any possible dangers or special precautions that tourists might encounter in visiting this system.

Your world body tour should include visits to one of the following systems:
- Digestive
- Respiratory
- Skeletal
- Muscle
- Nervous
- Excretory
- Circulatory
- Immune

Where would you like to go?
OBJECTIVES

1. List the parts of the digestive system and give their functions.

2. Compare mechanical digestion to chemical digestion.

3. Explain the function of the digestive enzymes amylase, protease and lipase.

4. Explain the results of the chemical digestion of carbohydrates, proteins and fats and discuss if this digestion occurs in the mouth, stomach and/or small intestines.

5. Discuss the importance of the liver and pancreas in digestion. List the substances they produce and explain their function.

6. Describe the structure of the villi and explain how its function is related to its structure.

VOCABULARY
(to be included in pamphlet)

- acidic pH
- alimentary canal
- amylase
- bile
- digestion
- duodenum
- E. coli
- epiglottis
- essential amino acids
- esophagus
- feces
- gall bladder
- hydrochloric acid
- large intestines
- lipase
- liver
- mesentery
- mucous
- neutral pH
- pancreas
- pepsin
- peristalsis
- pyloric sphincter valve
- rectum
- salivary glands
- small intestines
- stomach
- villi
OBJECTIVES

1. Identify the structure and function of the parts of the respiratory system.
2. Explain the function of the ribs and diaphragm in the breathing process.
3. Explain how breathing rate is controlled.
4. Describe what happens between the alveoli and the capillaries.

VOCABULARY
(to be included in pamphlet)
alveoli
anaerobic respiration
bronchi
bronchiole
cilia
CPR
diaphragm
epiglottis
exhalation
gas exchange
inhalation
larynx
lung
oxygen debt
pharynx
pleural membrane
respiration
respiratory control center
trachea
vital capacity
OBJECTIVES

1. Identify twenty major bones in the body.
2. State the functions of the skeletal system.
3. Describe the composition of bone.
4. Explain the differences in structure and function between the 4 major kinds of moveable joints: ball and socket, hinge, pivot, gliding
5. Discuss some injuries or disorders of the skeletal system.

VOCABULARY
(to be included in pamphlet)
appendicular skeleton
arthritis
axial skeleton
bursa
cartilage
doskeleton
fontanelles
Haversian canals
joints
ligaments
marrow
ossification
osteology
periosteum
synovial fluid
tendons
Muscle System

OBJECTIVES

1. Compare the structure and function of three types of muscles and give examples of where these muscles would be found in the body.

2. Explain the mechanism of muscle contractions.

3. Explain the function of flexors and extensors.

4. Explain how muscles fatigue.

5. Explain how muscles, bones, and tendons are related.

6. Explain the `all or none' response.

7. Identify 10 major muscles of the body.

VOCABULARY
(to be included in pamphlet)
acetylcholine
actin
belly
cardiac muscle
cholinesterase
extensor
fatigue
flexor
ligament
muscle fiber
myofibril
myology
myosin
skeletal muscle
smooth muscle
tendon
Nervous System

OBJECTIVES

1. Describe the basic structure and function of the nervous system.
2. Diagram the structure of a neuron and explain how it operates.
3. List the parts and discuss the function of the Central Nervous System (CNS). Discuss the structure and control centers of the brain.
4. Describe the Peripheral Nervous System (PNS), including the Autonomic branch (involuntary) and the Somatic branch (voluntary). In your discussion of the Autonomic system, distinguish between the Sympathetic branch and the Parasympathetic branch.
5. Explain how a nerve impulse travels
6. Explain/Diagram what occurs during the reflex arc.

VOCABULARY
(to be included in pamphlet)
acetylcholine
action potential
Autonomic Nervous System
axon
brain
cell body
Central Nervous System
cerebellum
cerebrum
dendrite
ganglia
medulla oblongata
mixed nerve
motor nerve
nerve impulse
neuron
neurotransmitter
Parasympathetic Nervous System
Peripheral Nervous System
reflex
response
resting potential
sensory nerve
sodium-potassium pump
spinal cord
stimulus
Sympathetic Nervous System
synapse
**Excretory System**

**OBJECTIVES**

1. Define excretion.
2. Describe the function of the skin, kidneys, lungs and liver in the excretory process.
3. Describe the structure and function of the kidney and its parts.
4. Explain how the nephron functions.
5. Explain the difference between filtration and reabsorption.

**VOCABULARY**

(aorta
active transport
adrenal glands
bladder
Bowman's capsule
excretion
filtration
glomerulus
kidney
metabolic wastes
nephron
reabsorption
renal artery
renal vein
sweat glands
ureter
urethra
urine)
OBJECTIVES

1. List the functions of the human circulatory system.
2. Trace a drop of blood through the heart from right atrium to the aorta.
3. Locate and label the parts of a heart on a diagram.
4. Compare the blood on the right side of the heart with that on the left side.
5. Describe the components of blood. (red blood cells, white b.c., platelets and plasma)
6. Identify and describe the function of the different types of circulation: pulmonary and systemic circuits.
7. Explain how the heart beats.
8. Explain what is meant by blood pressure.
9. Explain how blood is produced in the body. Describe the role of the spleen and marrow.
10. Discuss diseases of the heart. (hypertension and atherosclerosis)
Immune System

OBJECTIVES

1. Describe the function of the immune system.
2. Explain how the skin functions as a defense against disease.
3. Distinguish between a specific and nonspecific response.
4. Describe the actions of B cells and T cells in an immune response.
5. Describe the relationship between vaccination and immunity.
7. Describe at least one immune disorder.
8. Explain (diagram) the antigen-antibody reaction.

VOCABULARY
(to be included in pamphlet)
- antigen
- antibiotic
- antibody
- B-cell
- bone marrow
- immune response
- immunology
- inflammatory response
- lymphocyte
- leukocyte
- macrophage
- T-cell
- thymus gland
- vaccine
## Travel Brochure of the Body System Rubric

<table>
<thead>
<tr>
<th>Agency Name: _________________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>People in Agency group: ________________________________</td>
</tr>
</tbody>
</table>

### Four Point Assessment

1 = the element described is missing.

2 = the element is present, but does not meet the standard described.

3 = the element is present and meets standard, but needs revision or improvement.

4 = the element is present and meets or exceeds the standard and no revision is recommended.

### Content 50%

<table>
<thead>
<tr>
<th>Description</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information presented is accurate, factual, and relevant to the specific topic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research is in-depth and covers all systems and required topic areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time, energy, effort, enthusiasm and group commitment to the project are evident.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project shows mastery of structure and function of human systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrelationships between systems are clearly depicted and explained.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Travel Brochure 30%

<table>
<thead>
<tr>
<th>Description</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel brochure is neat and shows thought and effort.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel brochure clearly illustrates all structures, functions, and risks associated with travel to selected system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel brochure exhibits creativity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Oral Presentation 30%

<table>
<thead>
<tr>
<th>Description</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation is smooth and shows evidence of preparation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Peer and Self Evaluation 10%

<table>
<thead>
<tr>
<th>Description</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluations show thought and effort.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Total Points: ____

### Grading:

- A = 37 - 40
- B+ = 36
- B = 33 - 35
- C+ = 32
- C = 29 - 32
- D+ = 28
- D = 25 - 27
- F< = 24
Student Peer Assessment

Name ________________________________     Date __________________

Presenting students’ names: __________________________________________

Title of selected system: __________________________________________

Rate on a scale of 1 to 4 with 4 being the best:

_____ Completed sharing about all the listed information on the criteria sheets.

_____ Both students were involved and engaged in the presentation

_____ Clarity and Presentation of oral information

_____ Provided brochure and visuals to support content

_____ Able to handle questions about topic
Information for the Teacher

Divide up the class so that at least one team prepares information on each of the eight body systems.

Each team should listen to another team’s presentation that is different from their own selected body systems.

Prepare brochure copies of all the body systems as notes for the class.

Hold a class discussion to answer any questions about vocabulary terms or concepts outlined for each of the systems.

You can choose to provide one or two grades for this exercise. The peer assessment is optional but may assist with keeping the oral presentations focused.

New York State Standards

High School Living Environment

Standard 4: Key idea 1: 1.2a, 1.2b, 1.2c, 1.2d, 1.2e