

Biology Teacher Edition

Unit 1: Physiology

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Scientific Root Words Prefixes and Suffixes List

a-, an-	not, without, lacking, deficient	centi-	hundredth	-escent	becoming
ab-	away from, out from	centr-	center	eso-	inward, within, inner
-able	capable of	cephal-	head	eu-	well, good, true, normal
ac-	to, toward	cerat-	horn	eury-	widen
-aceous	of or pertaining to	cerebr-	brain	ex-	out of, away from
acou-, acous-	hear	cervic-	neck	extra-	beyond, outside
ad-	to, toward	chel-	claw	-fer-	bear, carry, produce
aden-	gland	chem-	dealing with chemicals	ferro-	iron
adip-	fat	chir-	hand	fibr-	fiber, thread
aero-	air	chlor-	green	-fid, fiss-	split, divided into
agri-	field, soil	chondr-	cartilage	-flect, -flex	bend
-al	having the character of	chrom-, -chrome	color	flor-	flower
alb-	white	chron-	time	flu-, fluct-, flux	flow
alg-, -algia	pain	-chym-	juice	foli-	leaf
alto-	high	-cid-, -cis-	cut, kill, fall	fract-	break
ambi-	both	circa-, circum-	around, about	-gam-	marriage
ameb-	change, alternation	cirru-	hairlike curls	gastr-	stomach
amni-	fetal membrane	co-	with, together	geo-	land, earth
amphi-, ampho-	both	cocc-	seed, berry	-gen-, -gine	producer, former
amyl-	starch	coel-	hollow	-gene-	origin, birth
ana-	up, back, again	coll-	glue	-gest-	carry, produce, bear
andro-	man, masculine	coni-	cone	-glen-	eyeball
anemo-	wind	contra-	against	-glob-	ball, round
ang-	choke, feel pain	corp-	body	gloss-	tongue
angi-	blood, vessel, duct	cort-, cortic-	outer layer	gluc-, glyc-	sweet, sugar
ante-	before, ahead of time	cosmo-	world, order, form	glut-	buttock
anter-	front	cotyl-	cup	gnath-	jaw
antho-	flower	counter-	against	-gon	angle, corner
anti-	against, opposite	crani-	skull	-grad-	step
anthropo-	man, human	cresc-, cret-	begin to grow	-gram, graph	record, writing
-ap-, -aph-	touch	crypt-	hidden, covered	grav-	heavy
apo-, ap-	away from	-cul-, -cule	small, diminutive	-gross-	thick
aqu-	water	cumul-	heaped	gymno-	naked, bare
archaeo-	primitive, ancient	cuti-	skin	gyn-	female
-ary, -arium	denotes a place for something	cyan-	blue	gyr-	ring, circle, spiral
arteri-	artery	-cycle, cycl-	ring, circle	-hal-, -hale	breathe, breath
arthr-	joint, articulation	-cyst-	sac, pouch, bladder	halo-	salt
-ase	forms names of enzymes	cyt-, -cyte	cell, hollow container	hapl-	simple
aster-, astr-	star	dactyl-	finger	hector-	hundred
-ate	verb form – the act of	de-	away from, down	-helminth-	worm
anther-	fatty deposit	deca-	ten	hem-	blood
-ation	noun form – the act of	deci-	tenth	hemi-	half
atmo-	vapor	deliquesc-	become fluid	hepar-, hepat-	liver
audi-	hear	demi-	half	herb-	grass, plants
aur-	ear	dendr-	tree	hetero-	different, other
auto-	self	dent-	tooth	hex-	six
bacter-, bactr-	bacterium, stick, club	derm-	skin	hibern-	winter
barb-	beard	di-, dipl- (Latin)	two, double	hidr-	sweat
baro-	weight	di-, dia- (Greek)	through, across, apart	hipp-	horse
bath-	depth, height	dia- (Latin)	day	hist-	tissue
bene-	well, good	digit-	finger, toe	holo-	entire, whole
bi- (Latin)	two twice	din-	terrible	homo- (Latin)	man, human
bi-, bio- (Greek)	life, living	dis-	apart, out	homo- (Greek)	same, alike
-blast-	sprout, germ, bud	dorm-	sleep	hort-	garden
brachi-	arm	dors-	back	hydr-	water
brachy-	short	du-, duo-	two	hygr-	moist, wet
brady-	slow	-duct	lead	hyper-	above, beyond over
branchi-	fin	dynam-	power	hyph-	weaving, web
brev-	short	dys-	bad, abnormal, difficult	hyphno-	sleep
bronch-	windpipe	ec-	out of, away from	hypo-	below, under, less
cac-	bad	echin-	spiny, prickly	hyster-	womb, uterus
calor-	heat	eco-	house	-iae	person afflicted with disease
capill-	hair	ecto-	outside of	-iasis	disease, abnormal condition
capit-	head	-elle	small	-ic	(adjective former)
carcin-	cancer	-emia	blood	-chthy-	fish
cardi-	heart	en-, endo-, ent-	in, into, within	ign-	fire
carn-	meat, flesh	-en	made of	in-, il-, im-, ir-	not
carp-	fruit	encephal-	brain	in-, il-, im-, ir-	to, toward, into
carpal-	wrist	enter-	intestine, gut	in-	very, thoroughly
cata-	breakdown, downward	entom-	insects	-ine	of or pertaining to
caud-	tail	-eous	nature of, like	infra-	below, beneath
-cell-	chamber, small room	epi-	upon, above, over	inter-	within, inside
cen-, cene-	now, recent	-err-	wander, go astray	intra-	between
cente-	pierce	erythro-	red	-ism	a state or condition

iso-	equal, same	oo-	egg	saur-	lizard
-ist	person who deals with	ophthalm-	eye	schis-, schiz-	split, divide
-it is	inflammation, disease	opt-	eye	sci-	know
-ium	refers to a part of the body	orb-	circle, round, ring	scler-	hard
-kary-	cell nucleus	-orium, -ory	place for something	-scop-	look, device for seeing
kel-	tumor, swelling	ornith-	bird	-scribe, -script	write
kerat-	horn	orth-	straight, correct, right	semi-	half, partly
kilo-	thousand	oscu-	mouth	sept-	partition, seven
kine-	move	-osis	abnormal condition	-septic	infection, putrefaction
lachry-	tear	oste-	bone	sess-	sit
lact-	milk	oto-	ear	sex-	six
lat-	side	-ous	full of	-sis	condition, state
leio-	smooth	ov-	egg	sol-	sun
-less	without	oxy-	sharp, acid, oxygen	solv-	loosen, free
leuc-, leuk-	white, bright, light	pachy-	thick	som-, somat-, -some	body
lign-	wood	paleo-	old, ancient	somn-	sleep
lin-	line	palm-	broad, flat	son-	sound
lingu-	tongue	pan-	all	spec-, spic-	look at
lip-	fat	par-, para-	beside, near, equal	-sperm-	seed
lith-, -lite	stone, petrifying	path-, -pathy	disease, suffering	-spher-	ball, round
loc-	place	-ped-	foot	spir-, -spire	breathe
-log-	word, speech	-ped-	child	-spor-	seed
-logist	one who studies	pent-	five	stat-, -stasis	standing, placed, staying
-logy	study of	per-	through	stell-	stars
lumin-	light	peri-	around	sten-	narrow
-lys, -lyt, -lyst	decompose, split, dissolve	permea-	pas, go	stern-	chest, breast
macr-	large	phag-	eat	stom-, -stome	mouth
malac-	soft	pheno-	show	strat-	strat
malle-	hammer	-phil-	loving, fond of	stereo-	solid, 3-dimensional
mamm-	breast	phon-, -phone	sound	strict-	drawn tight
marg-	border, edge	-phore,, pher-	bear, carry	styl-	pillar
mast-	breast	photo-	light	sub-	under, below
med-	middle	phren-	mind, diaphragm	super-, sur-	over, above, on top
meg-	million, great	phyc-	seaweed, algae	sym-, syn-	together
mela-, melan-	black, dark	phyl-	related group	tachy-	quick, swift
-mer	part	-phyll	leaf	tarso-	ankle
mes-	middle, half, intermediate	physic-	nature, natural qualities	tax-	arrange, put in order
met-, meta-	between, along, after	phyt-, phyte	plaln	tele-	far off, distant
-meter, -metry	measurement	pino-	drink	telo-	end
micro-	small, millionth	pinni-	feather	terr-	earth, land
milli-	thousandth	plan-	roaming, wandering	tetr-	four
mis-	wrong, incorrect	plasm-, -plast-	form, formed into	thall-	young shoot
mito-	thread	platy-	flat	-the-, -thes-	put
mole-	mass	pleur-	lung, rib, side	-thel-	cover a surface
mono-	one, single	pneumo-	lungs, air	therm-	heat
mort-	death	-pod	foot	-tom-	cut, slice
mot-	move	ply-	many, several	toxico-	poison
morph-	shape, form	por-	opening	top-	place
multi-	many	port-	carry	trache-	windpipe
mut-	change	post-	after, behind	trans-	across
my-	muscle	pom	fruit	tri-	three
myc-	fungus	pre-	before, ahead of time	trich-	hair
mycel-	threadlike	prim-	first	-trop-	turn, change
myriad-	many	pro-	forward, favoring, before	-troph-	nourishment, one who feels
moll-	soft	p[ro]to-	first, primary	turb-	whirl
nas-	nose	pseudo-	false, deceptive	-ul-, -ule	diminutive, small
necr-	corpse, dead	psych	mind	ultra-	beyond
nemat-	thread	pter-	having wings or fins	uni-	one
neo-	new, recent	pulmo-	lung	ur-	urine
nephro-	kidney	puls-	drive, push	-ura	tail
-ner-	moist, liquid	pyr-	heat, fire	vas-	vessel
neur-	nerve	quadr-	four	vect-	carry
noct-, nov-	night	quin-	five	ven-, vent-	come
-node	knot	radi-	ray	ventr-	belly, underside
-nom-, -nomy	ordered knowledge, law	re-	again, back	-verge	turn, slant
non-	not	rect-	right, correct	vig-	strong
not-	back	ren-	kidney	vit-, viv-	life
nuc-	center	ret-	net, made like a net	volv-	roll, wander
ob-	against	rhag-, -rrhage	burst forth	-vor-	devour, eat
ocul-	eye	rhe-, rhea	flow	xanth-	yellow
oct-	eight	rhin-	nose	xero-	dry
odont-	tooth	rhiz-	root	xy-	wood
-ond	form, appearance	rhodo-	rose	zo-, -zoa	animal
olf-	smell	roto-	wheel	zyg-	joined together
oligo-	few, little	rubr-	red	zym-	yeast
-oma	abnormal condition, tumor	sacchar-	sugar		
omni-	all	sapr-	rotten		
onc-	mass, tumor	sarc-	flesh		

Chapter 1: Introduction to the Human Body

Anticipation Guide: Physiology

What do you know about the human body? As you prepare to read about the systems of the human body, decide whether each statement below is TRUE or FALSE, and write an explanation of your opinion. Then, when you have finished reading, come back and answer the questions again with your new knowledge.

1. A person is a system.

TRUE / FALSE Before reading:

TRUE / FALSE After reading:

2. When a system changes, it breaks.

TRUE / FALSE Before reading:

TRUE / FALSE After reading:

3. Systems do not interact with each other.

TRUE / FALSE Before reading:

TRUE / FALSE After reading:

4. Systems are made of smaller systems.

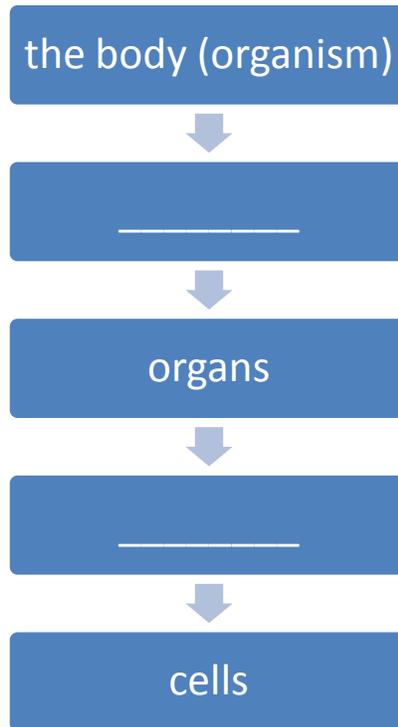
TRUE / FALSE Before reading:

TRUE / FALSE After reading:

Adapted from: http://lawrencehallofscience.org/seeds/curriculum/strat_AntGuide.html

Graphic Organizer: Levels

The human body is organized into different levels, from simple to complex. Fill in the missing levels.



Cornell Notes

Taking notes on readings and during class is an important skill. Note-taking can help you understand and remember important material. Notes can also help you prepare for tests.

Many successful high school and college students use a particular type of notes, called Cornell notes. To take Cornell notes, make a lengthwise fold in your paper about three inches in from the left edge. As you read the text, summarize key points in the space to the right of the fold. In the space to the left of the fold, write down words, phrases, or questions, that relate to the key points.

DIRECTIONS: Reread the section on Homeostasis and Regulation, taking Cornell notes as you go. Follow the example.

What is homeostasis?

How the body keeps the internal environment the same; balance; equilibrium

Feedback regulation loops

Mechanisms or ways the body maintains homeostasis

What are the two types of regulation loops?

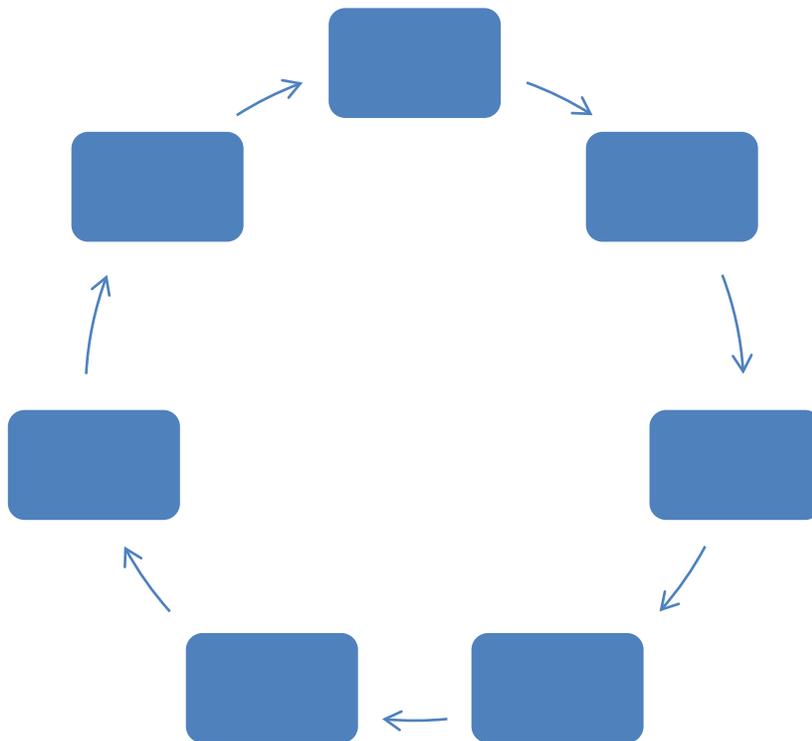
Positive and negative

Graphic Organizer: Types of Feedback Regulation Loops

	FEATURES OF FEEDBACK REGULATION LOOPS	
TYPE OF FEEDBACK LOOP	Negative Feedback	Positive Feedback
WHICH IS MORE COMMON?	Most common	Least common
HOW DOES IT WORK?	Reverses the direction of change	Increases change
RELATIONSHIP TO HOMEOSTASIS?	Helps restore homeostasis	Moves body further from homeostasis
WHAT DOES THE HORMONE DO?	Hormones play a role by...	Hormones play a role by...

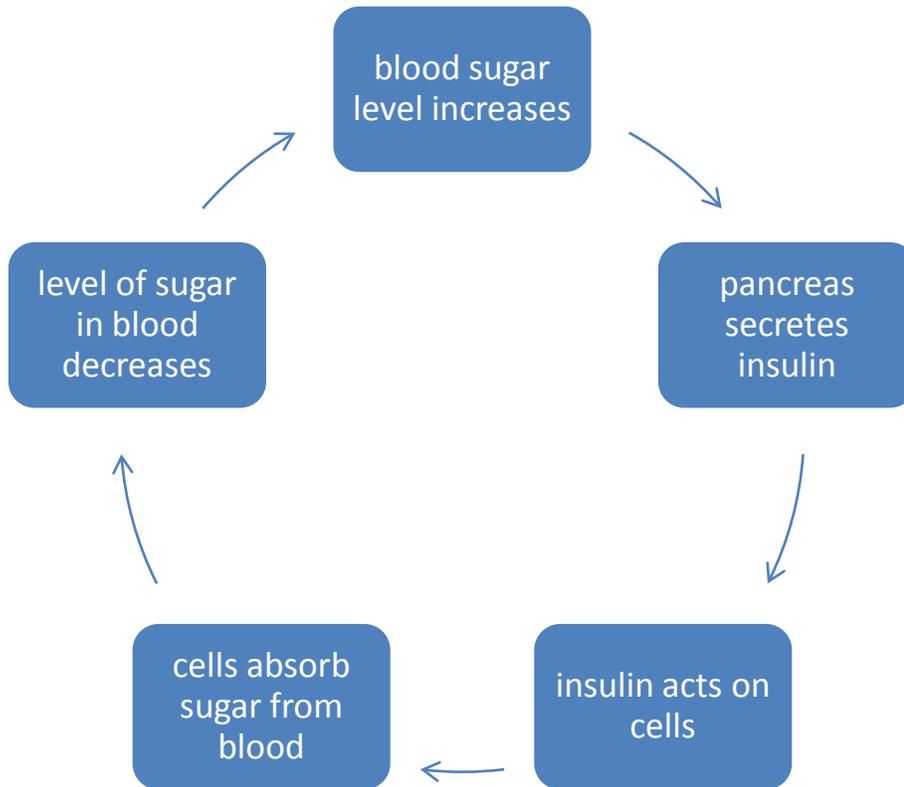
DIRECTIONS: Please complete the sequence chart below for a specific type of feedback regulation loop. Specify the type of feedback loop by filling in the sentence blank below.

This sequence chart illustrates the _____ feedback regulation loop.



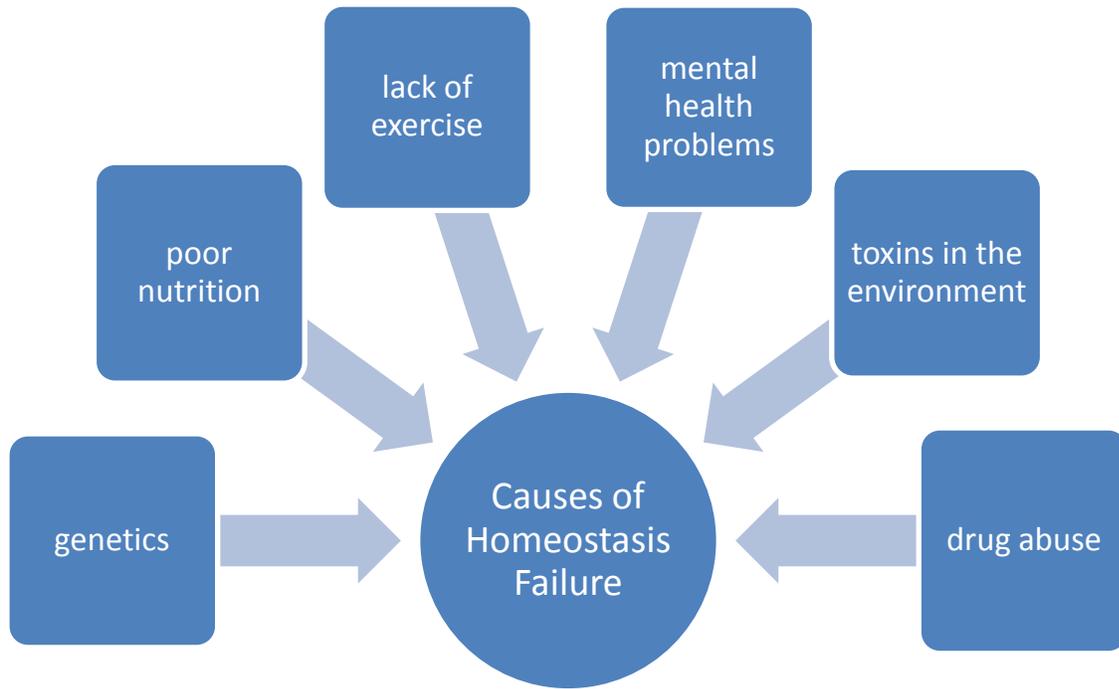
Graphic Organizer: Negative Feedback Regulation (Glucoregulation)

DIRECTIONS: *Fill in the blank with the appropriate word to describe the negative feedback loop process.*



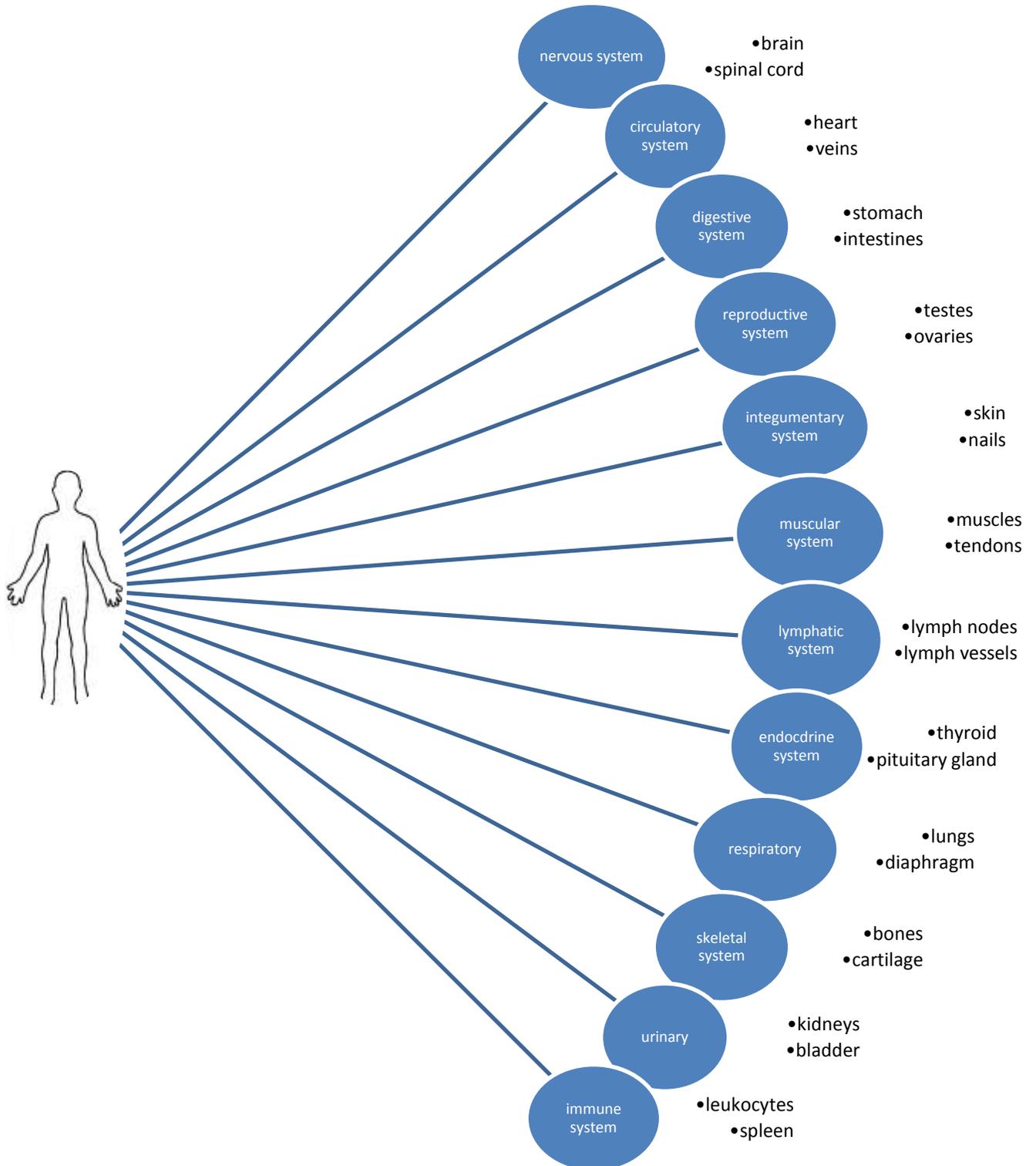
Graphic Organizer: Factors Leading to Failure of Homeostasis

DIRECTIONS: Complete the spider diagram below with examples of factors that can cause homeostasis to fail. Think of additional factors that can cause homeostasis to fail, and add them to the diagram.



Graphic Organizer: Organ Systems of the Human Body

DIRECTIONS: Use the table of Major Organ Systems to help you fill in the diagram. Write the names of major organ systems in the circles. Next to each circle, list at least two organs, tissues, or structures involved in that system.



Fill-in-the-Blank Content Vocabulary Recall:
Cells and Cell Differentiation

DIRECTIONS: Complete the paragraphs below on cells using the word bank below. You will use some words more than once.

differentiation	adult stem cells
genes	cells
stem cells	cord blood stem cells
embryo	nerve cells
zygote	specialized cells

Every human begins as a single fertilized egg, called a(n) [1] _____. The [2]_____ divides to become a(n) [3] _____. The [4]_____ of the [5] _____ develop into all the cell types in the body. This process is called [6]_____. During this process, some [7]_____ are activated, or turned on, and others are turned off. Ultimately, each cell type will have its own structure and function, or job. For example, [8] _____ have long, branch-like extensions that allow the cell to conduct electrical impulses.

Cells that are not specialized, but have the potential, or ability, to become specialized cells, are called [9]_____. There are several kinds of [10]_____. Those that are found in embryos are called [11]_____. These stem cells can divide indefinitely and develop into any cell type in the body. Stem cells that are found in blood from the umbilical cord and the placenta are called [12]_____. These stem cells only give rise to blood cells. A third type of stem cell is [13]_____. These stem cells can divide indefinitely, but they can only generate the cell types of the organ they come from. In fact, they could re-grow an entire organ from just a few cells!

Chapter 2: Nervous and Endocrine Systems

Cornell Notes

Taking notes on readings and during class is an important skill. Note-taking can help you understand and remember important material. Notes can also help you prepare for tests. Many successful high school and college students use a particular type of notes, called Cornell notes. To take Cornell notes, make a lengthwise fold in your paper about three inches in from the left edge. As you read the text, summarize key points in the space to the right of the fold. In the space to the left of the fold, write down words, phrases, or questions that relate to the key points.

DIRECTIONS: *Reread the section on nerve impulses, taking Cornell notes as you go. You should write at least five terms or questions in the left-hand column. Follow the example.*

QUESTIONS:

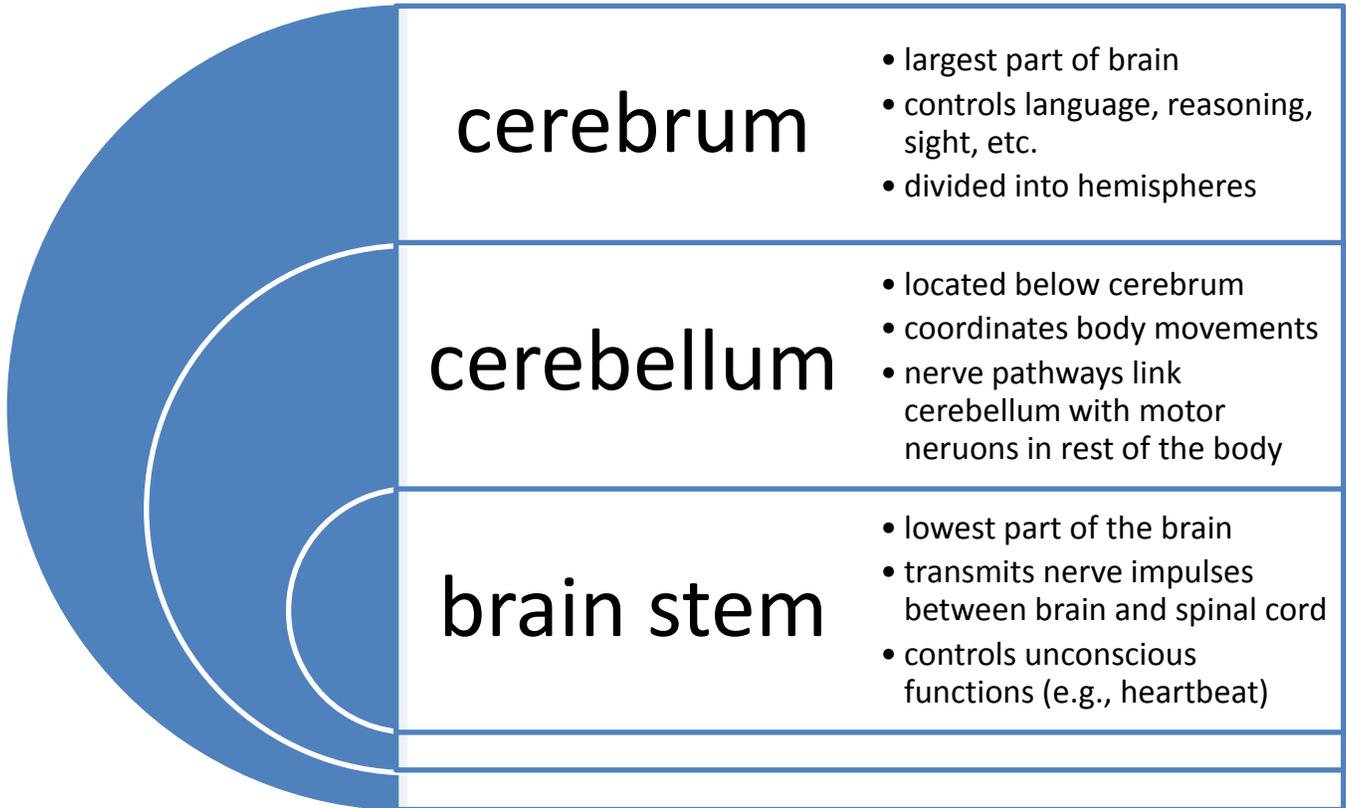
What causes nerve impulses?

ANSWERS:

A reversal in the electrical charge across the membrane of a neuron.

Graphic Organizer: The Brain

DIRECTIONS: *List three features of each part of the brain.*



Fill-in-the-Blank Content Vocabulary Recall:
The Central Nervous System

DIRECTIONS: Complete the paragraph below on the nervous system using the word bank below. You may use some terms more than once.

brain stem
nervous system
spinal cord

peripheral nervous system
cerebellum
hemispheres

The [1]_____ has two main divisions: the central nervous system and the [2]_____. The brain and the [3]_____ belong to the central nervous system. The three main parts of the brain are the cerebrum, cerebellum, and [4]_____. The cerebrum is divided into two [5]_____, which are each divided into four lobes.

The cerebrum controls language, reasoning, and other conscious thought processes. The [6]_____ coordinates body movements. The [7]_____, which connects the rest of the brain with the spinal cord, is responsible for basic functions like heart rate and respiration (breathing).

Fill-in-the-Blank Content Vocabulary Recall:
Nerve Cells and Nerve Impulses

DIRECTIONS: Complete the paragraphs below on neurons and the nervous system using the word bank below. You may use some terms more than once.

transmit
sensory neurons
axon
receive

interneurons
dendrites
motor neurons
glial cells

There are two basic types of nerve cells: neurons and [1]_____.
[2]_____ transmit electrical signals from one part of the body to another. The basic parts of a neuron are the cell body, [3]_____, and [4]_____. Dendrites and axon terminals both look a little like branches. However, they perform different functions. Dendrites [5]_____ messages and axons [6]_____ messages.

Neurons themselves are grouped depending on the direction they send nerve impulses. There are three basic groups of neurons: [7]_____, which carry nerve impulses toward the central nervous system; [8]_____neurons, which carry nerve impulses away from the central nervous system; and [9]_____, which send nerve impulses back and forth between other types of neurons.

Chapter 3: Skeletal, Muscular and Integumentary Systems

Anticipation Guide: The Skeletal System

What do you know about your skeleton?

DIRECTIONS: Answer the following questions as you prepare to read about the skeletal system. Then, when you have finished reading, come back and answer the questions again with your new knowledge.

1. How many bones do you think are in your body?

Before reading:

After reading:

2. Babies have more bones than adults. What do you think happens to those extra bones?

Before reading:

After reading:

3. What do you think is the purpose of your skeleton?

Before reading:

After reading:

4. Are bones dead tissue, like hair and nails?

Before reading:

After reading:

5. You probably know you have joints in your knees and elbows. Do you think there are joints in your skull?

Before reading:

After reading:

Graphic Organizer:
The Components and Functions of the Skeletal System

DIRECTIONS: *Provide the purpose and function for each part of the skeletal system.*

bones

- hold up body
- protect organs
- provide places for muscles to attach
- store minerals
- maintain mineral homeostasis

cartilage

- holds bones in place
- prevents bones from scraping at joints

ligaments

- keep bones in place
- hold bones together

Compare and Contrast Matrix: Joint Types

DIRECTIONS: *As you read your course text, complete the matrix below comparing the three joint types.*

What are these types of joints called?	Immovable Joints	Partly Movable Joints	Movable Joints
How much movement do these joints allow?	none	a little	a lot
What holds these joints together?	collagen	cartilage	ligaments
Give an example of where these joints are found.	skull bones	ribs and sternum	shoulder, knee
Which is the most common type of joint? Place an X in the appropriate column(s).			X

Chapter 4: Circulatory and Respiratory Systems

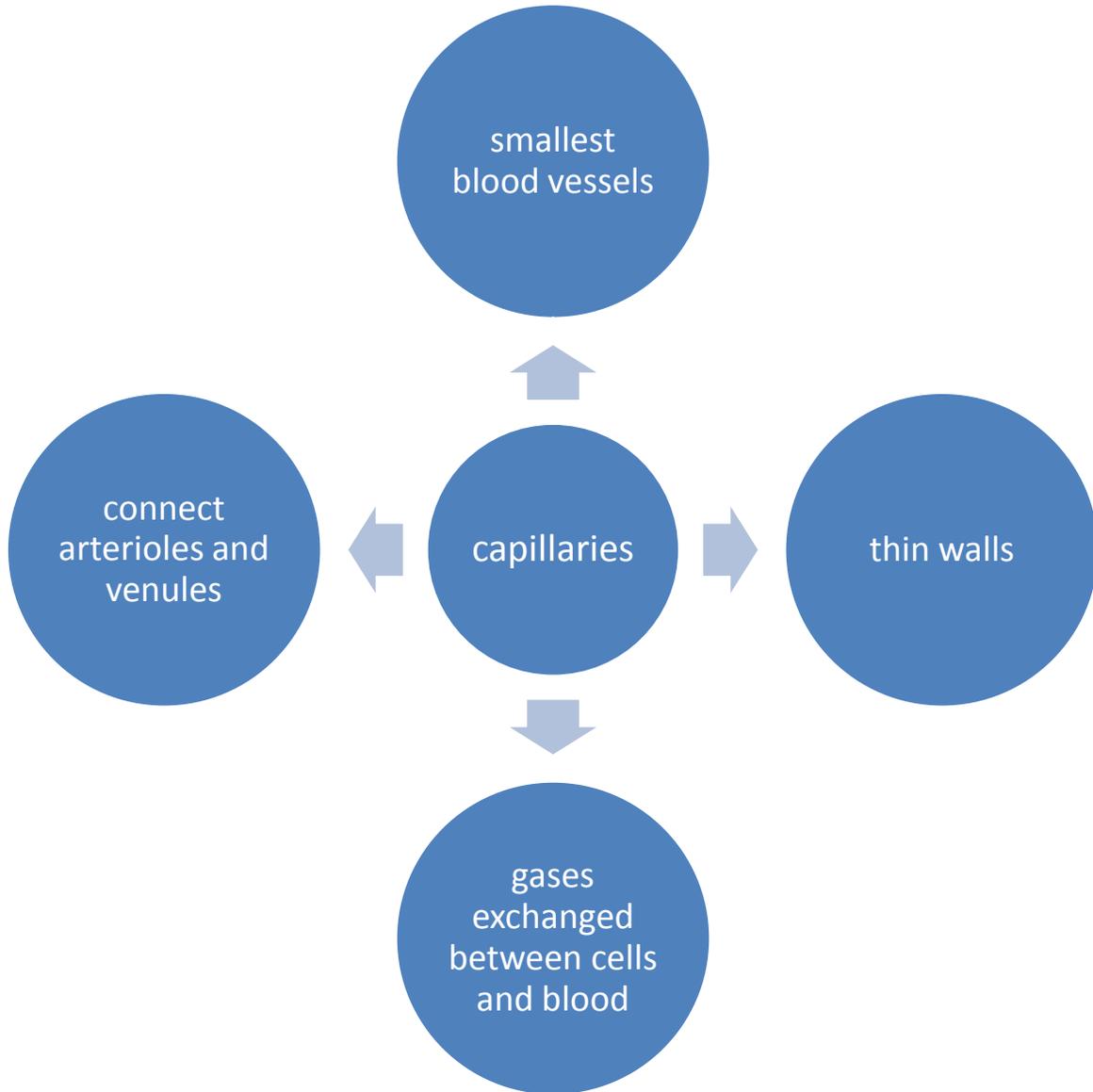
Features Matrix: Blood Vessels

DIRECTIONS: *Fill in the boxes with the features of blood vessels.*

	Direction of blood flow	Structural features	Characteristics of blood carried	Example of blood vessel
ARTERIES	Away from the heart	Thick walls to withstand pressure	oxygenated	aorta
VEINS	Toward the heart	Valves to prevent backflow	deoxygenated	Vena cava

Description Web: Capillaries

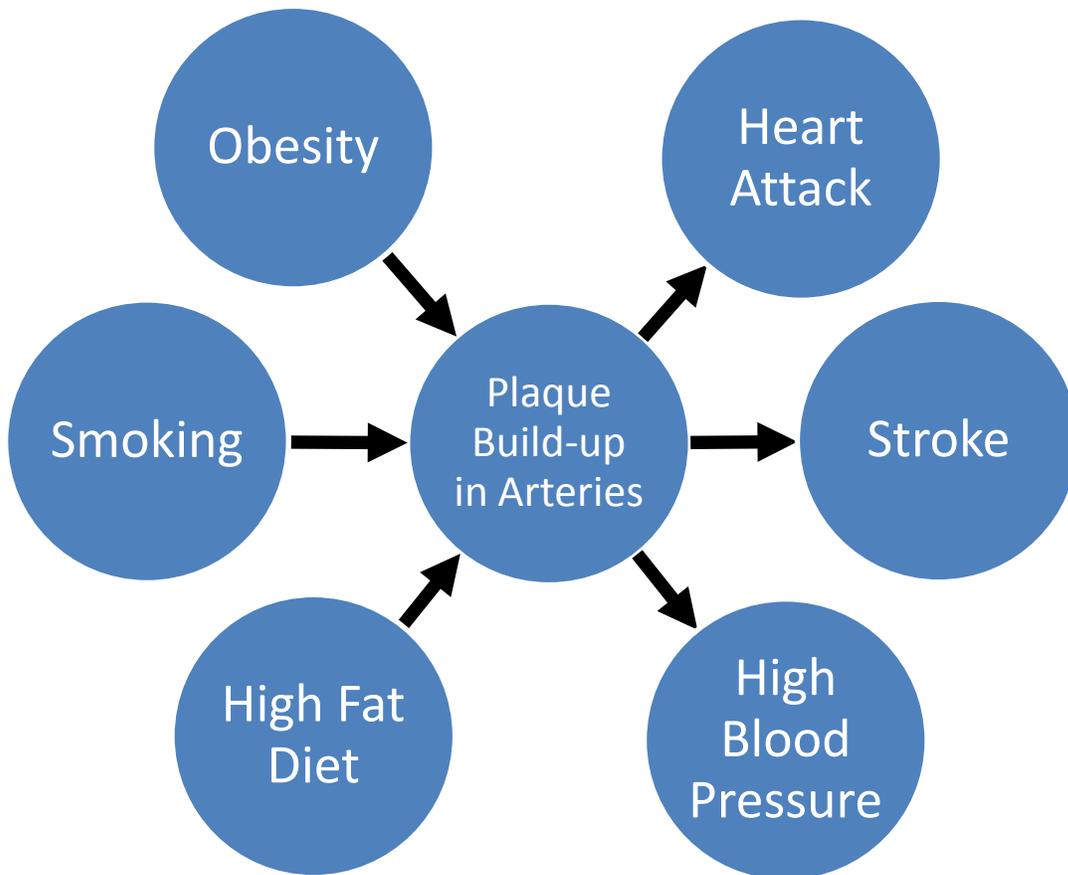
DIRECTIONS: *List four characteristics of a capillary*



Cause and Effect Web: Cardiovascular Disease

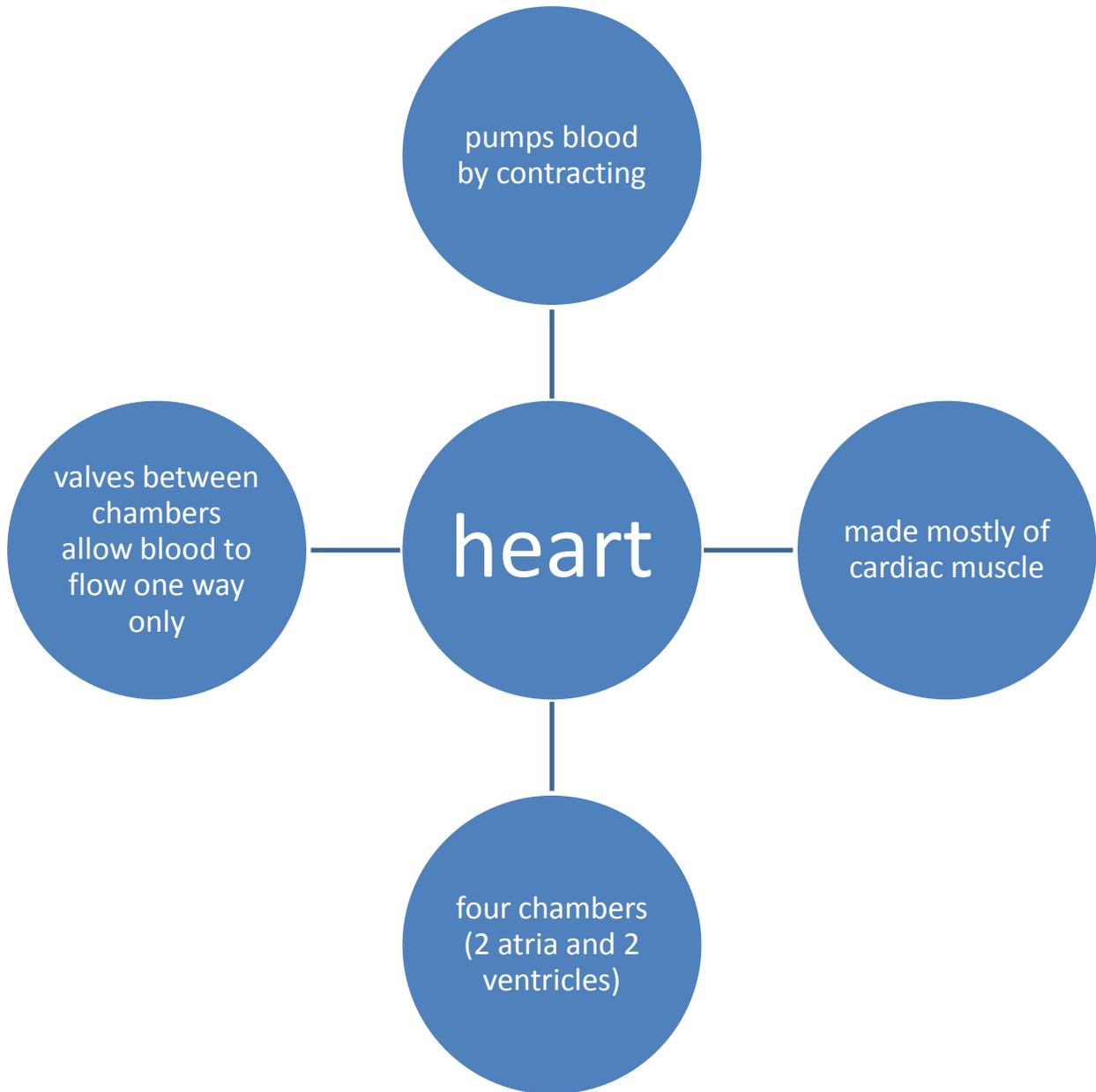
DIRECTIONS: *Paying attention to the direction of the arrows, fill in the causes and effects of cardiovascular disease.*

CAUSES **EFFECTS:**



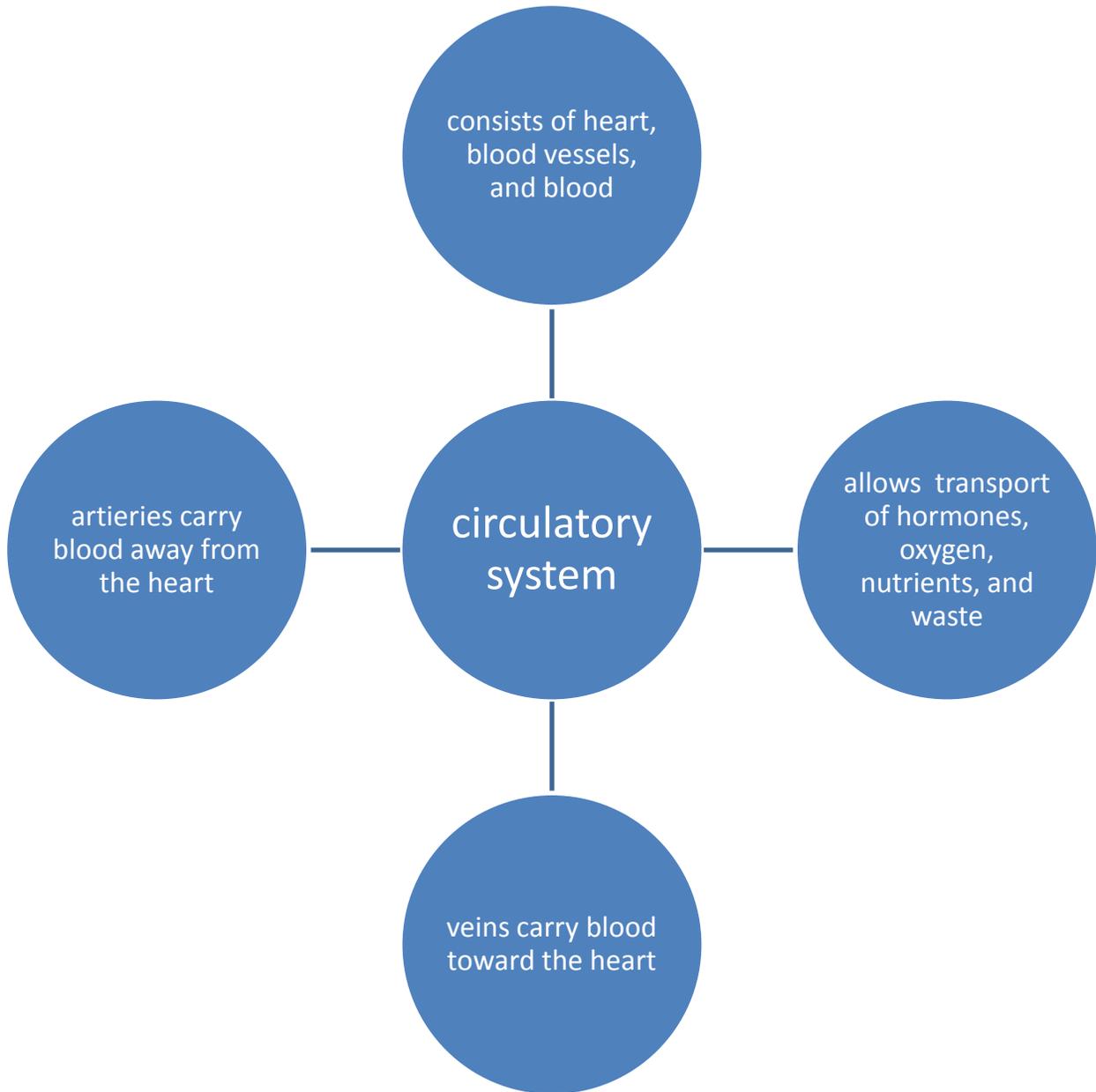
Description Web: The Heart

DIRECTIONS: *List the four characteristics of the heart.*



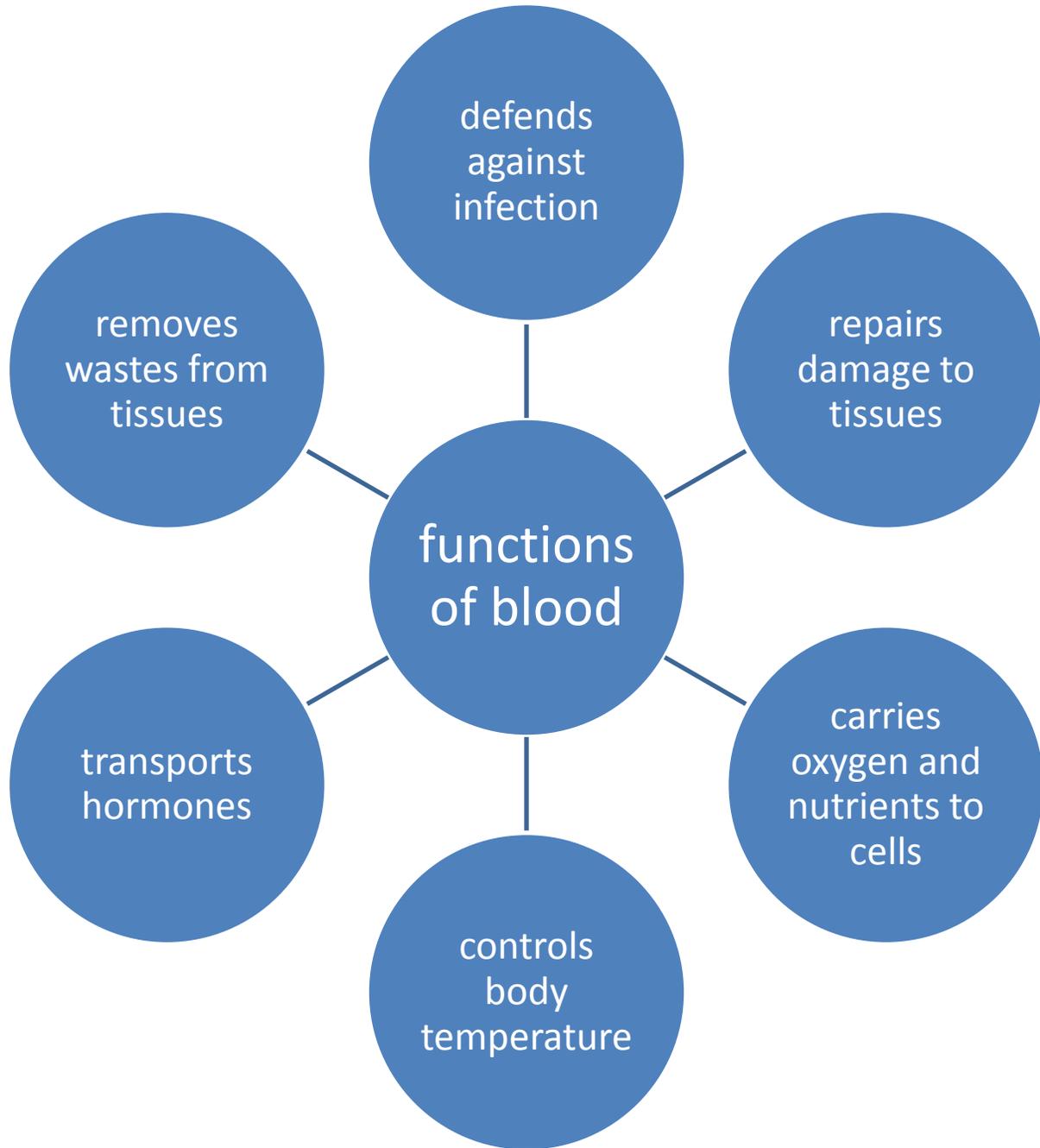
Description Web: Structure and Function of Circulatory System

DIRECTIONS: *List the structure and functions of the circulatory system.*



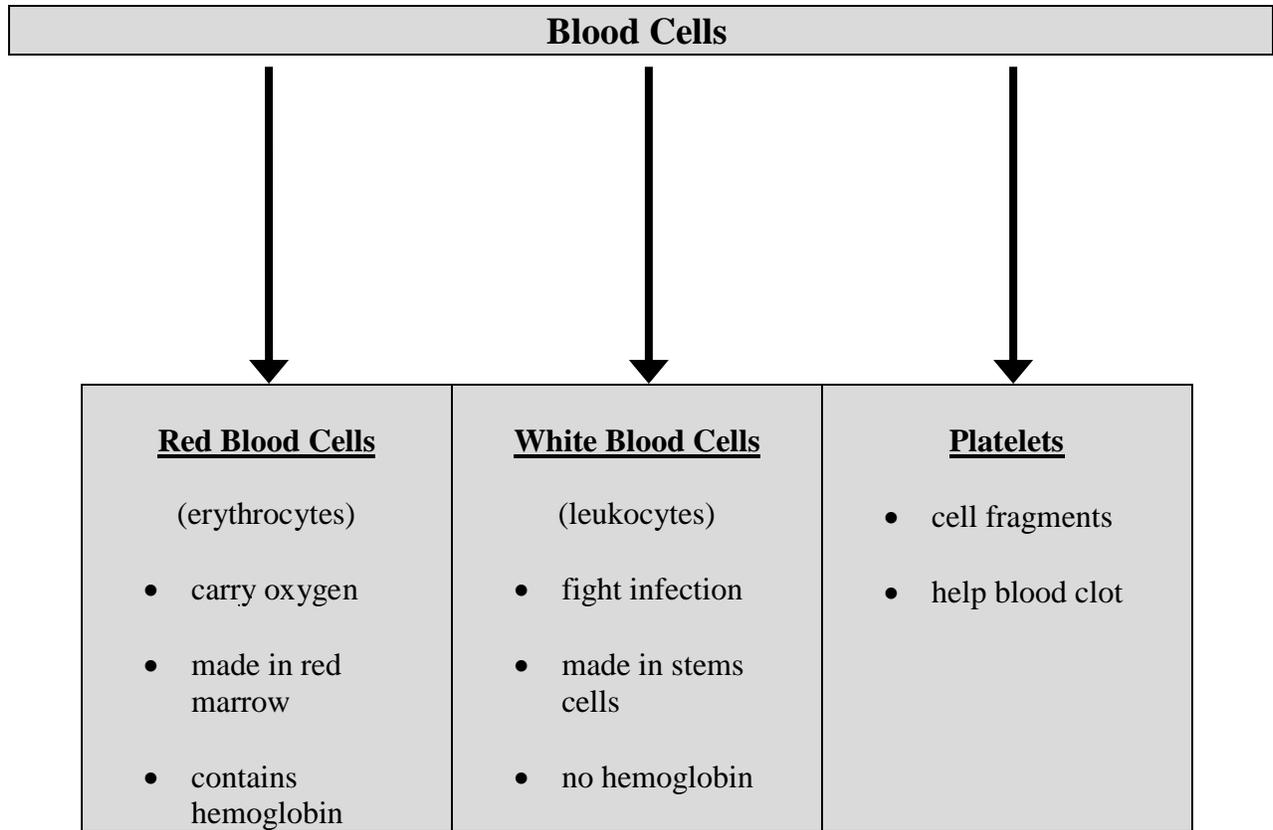
Description Web: Functions of Blood

DIRECTIONS: *List the various functions of blood in the body.*



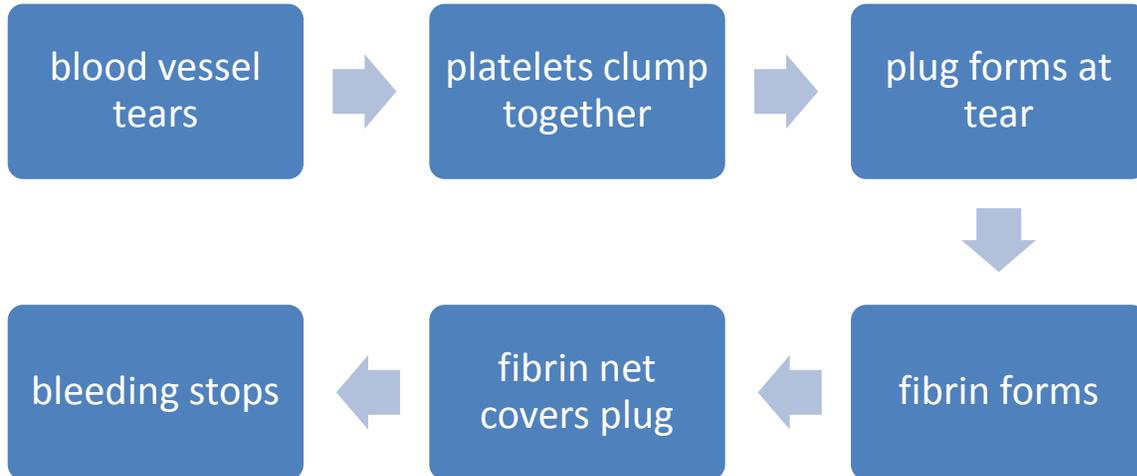
Classification Tree: Blood Cells

DIRECTIONS: List two to three characteristics of the following blood cells.



Sequence Map: Blood Clotting

DIRECTIONS: Fill in the blanks to complete the sequence of how blood clots.



Features Chart: Homeostatic Imbalances

DIRECTIONS: *List two to three characteristics of the following blood disorders.*

sickle-cell
disease

- genetic
- RBCs become sickle shaped
- RBCs plug blood vessels
- tissue damage
- stroke
- heart attack

anemia

- lack of iron
- more common in women
- hemoglobin cannot be made
- weakness
- dizziness

leukemia

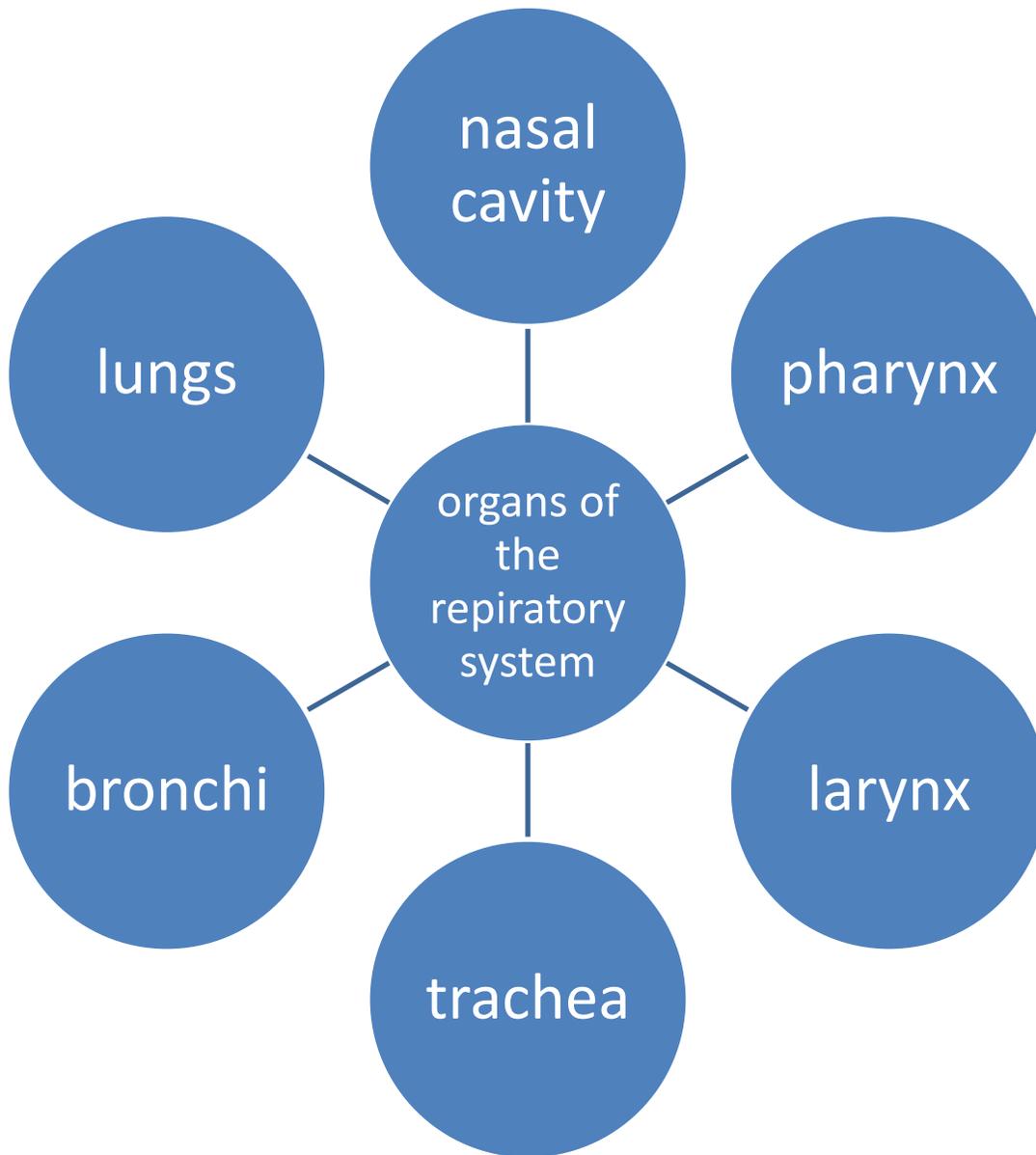
- cancer
- begins in bone marrow
- abnormal production of white blood cells

hemophilia

- genetic

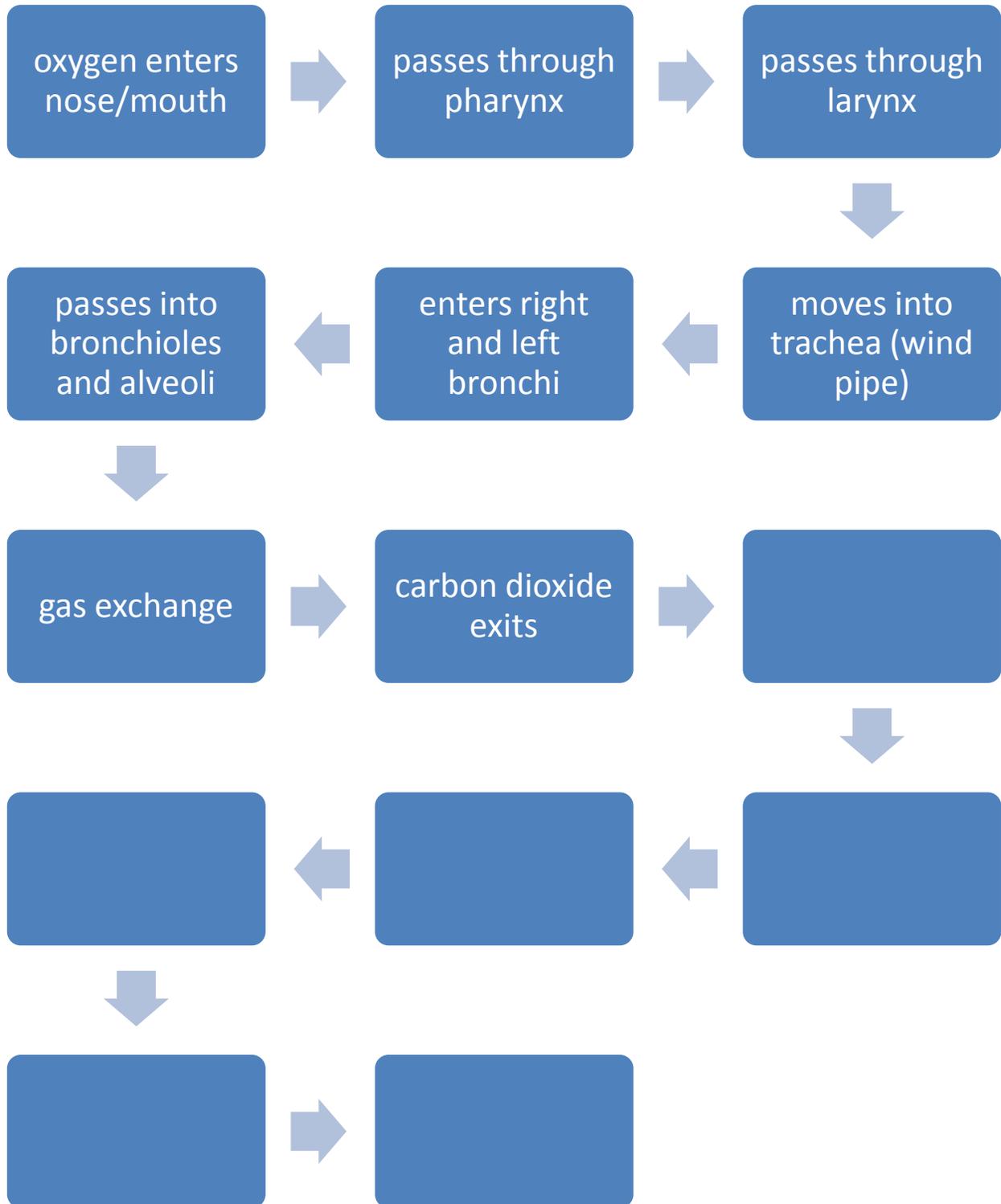
Description Web: Organs of the Respiratory System

DIRECTIONS: *Fill in the blanks to describe the organs of the respiratory system.*



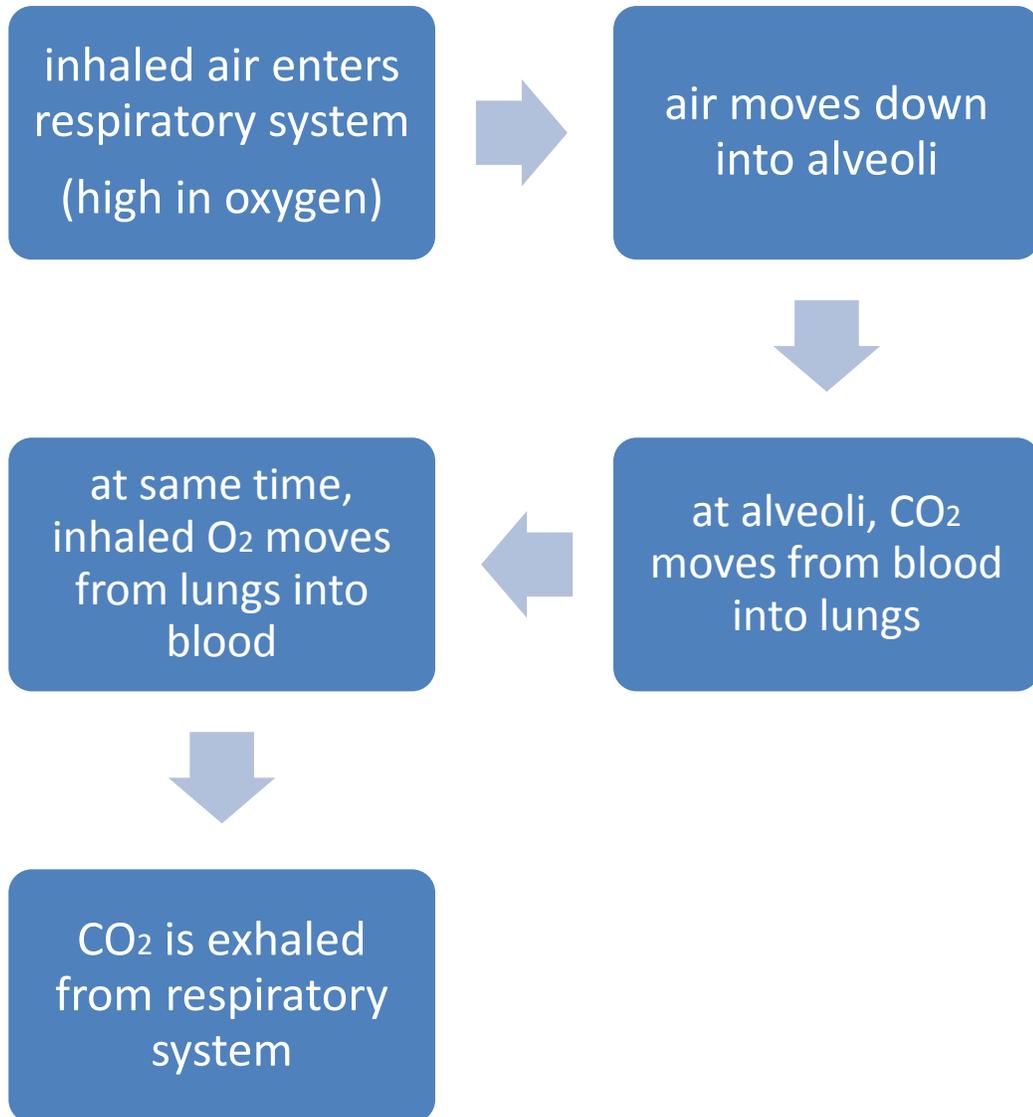
Sequence Map: Ventilation

DIRECTIONS: *Fill in the blanks to describe the process of ventilation.*



Sequence Map: Gas Exchange

DIRECTIONS: Fill in the blanks to describe the process of gas exchange.



Comparison/Features Matrix: Diseases of the Respiratory System

DIRECTIONS: *Fill in the blanks to describe the diseases of the respiratory system.*

	Description	Symptoms	Causes
Asthma	Air passages of lung become too narrow; excess mucus	Difficulty breathing; coughing; chest tightness	Allergens, hard exercise, stress
Pneumonia	Alveoli fill with fluid; gas exchange cannot occur	Coughing; chest pain; difficulty breathing	Infection; lung injury
Emphysema	Walls of alveoli break down; gas exchange is reduced	Shortness of breath	Smoking

Chapter 5: Food and Nutrients, The Digestive System, The Excretory System

Key Vocabulary: Food and Nutrients

DIRECTIONS: For each word listed below, write a definition, at least two (2) related words, use the word in a sentence, and draw a visual (picture) to remind you of that words definition.

Word	Definition	Related Words	Sentence	Visual
Nutrients				
Enzymes				
Digestion				
Excretion				

DIRECTIONS: For each word, write the definition, at least one (1) related word, and use the word in a sentence.

Word	Definition	Related Words	Sentence
Calorie			
Macronutrient			
Carbohydrates			
Proteins			
Lipids			
Water			
Micronutrient			

Word	Definition	Related Words	Sentence
Vitamin			
Mineral			
MyPyramid			
Obesity			
Body Mass Index (BMI)			
Eating Disorder			

DIRECTIONS: *For each word, write the definition, at least one (1) related word, and use the word in a sentence.*

Name _____

Block:

Date:

Chapter 5: Food and Nutrients, The Digestive System, The Excretory System

Anticipation Guide

DIRECTIONS: Before reading this chapter, write “yes” if you agree with the statement, “no” if you disagree with the statement, and “?” if you don’t have a strong opinion about the statement. After reading, you will complete the last column, and revise your responses if you feel differently.

Yes = I agree

No = I disagree

? = I don’t know

Before Reading	Statement	After Reading
	1. I can eat whatever I want and my body will be healthy.	
	2. It is not important to eat different types of foods each day.	
	3. People can and should take risks to get the body they want.	
	4. The way my body breaks down food is a simple process.	
	5. The body can get rid of its “waste” in only two ways.	

DIRECTIONS: Select **one** statement above you feel the most passionate (have strong feelings) about. In the space provided below, explain why you strongly **agree** or strongly **disagree** with this statement. Use at least three (3) sentences to describe why you feel the way you do.

Sample Sentence Starters: Ex. The statement I feel the most strongly about is statement

_____ because _____.

Additionally, I feel that _____.

The last reason I feel strongly about this statement is _____.

_____.

Nutrient Grid: Food and Nutrients

Topic #1: Macronutrients

Definition:
Purpose:

Topic #2: Micronutrients

Definition:
Purpose:

Type of Nutrient	Macro/Micro	What are they made of?	Function (How does it support the body?)	Food Sources

Food Group Chart: MyPyramid and Meal Planning

Using MyPyramid to Plan Daily Meals

DIRECTIONS: Complete the table below to identify the different food groups, examples, and daily servings. Once complete, create a menu of different food items to eat for one day that satisfies all of the daily recommended servings for each food group.

Food Group	Examples of Foods	Recommended Daily Servings

Daily Menu

Time Period	Food Selections	Grain	Veg.	Fruit	Oils	Milk	Meat	Other*
Breakfast (Morning)								
Snack								
Lunch (Early-Afternoon)								
Snack								
Dinner (Evening)								
Total								

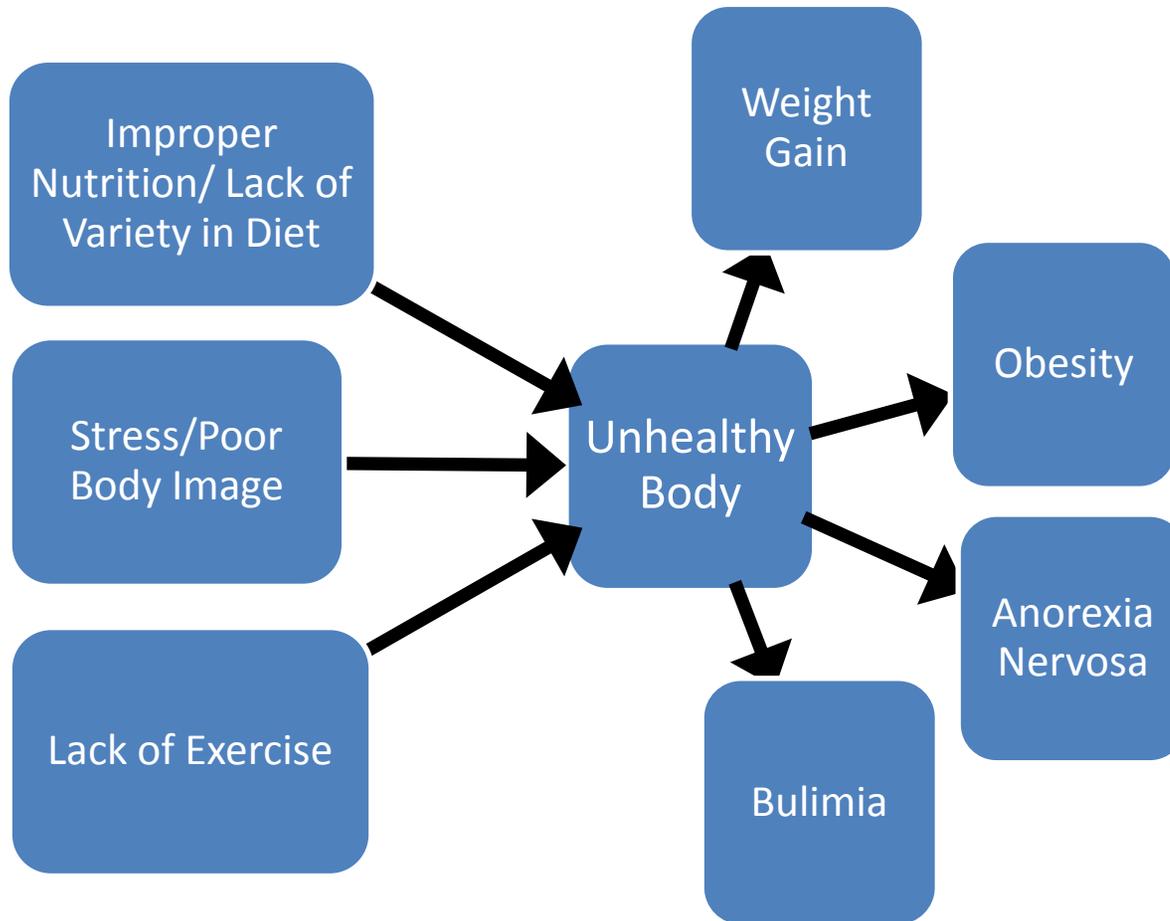
Reflection Question:

- Was it easy/medium/difficult to create a menu? Why? What are the different food groups that you would like to eat more from?

Cause and Effect Web: Unhealthy Diet / Body

DIRECTIONS: Complete the chart identifying the different causes (left side) and effects (right side) of an unhealthy diet and body.

CAUSES	EFFECTS:
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Key Vocabulary: The Digestive System

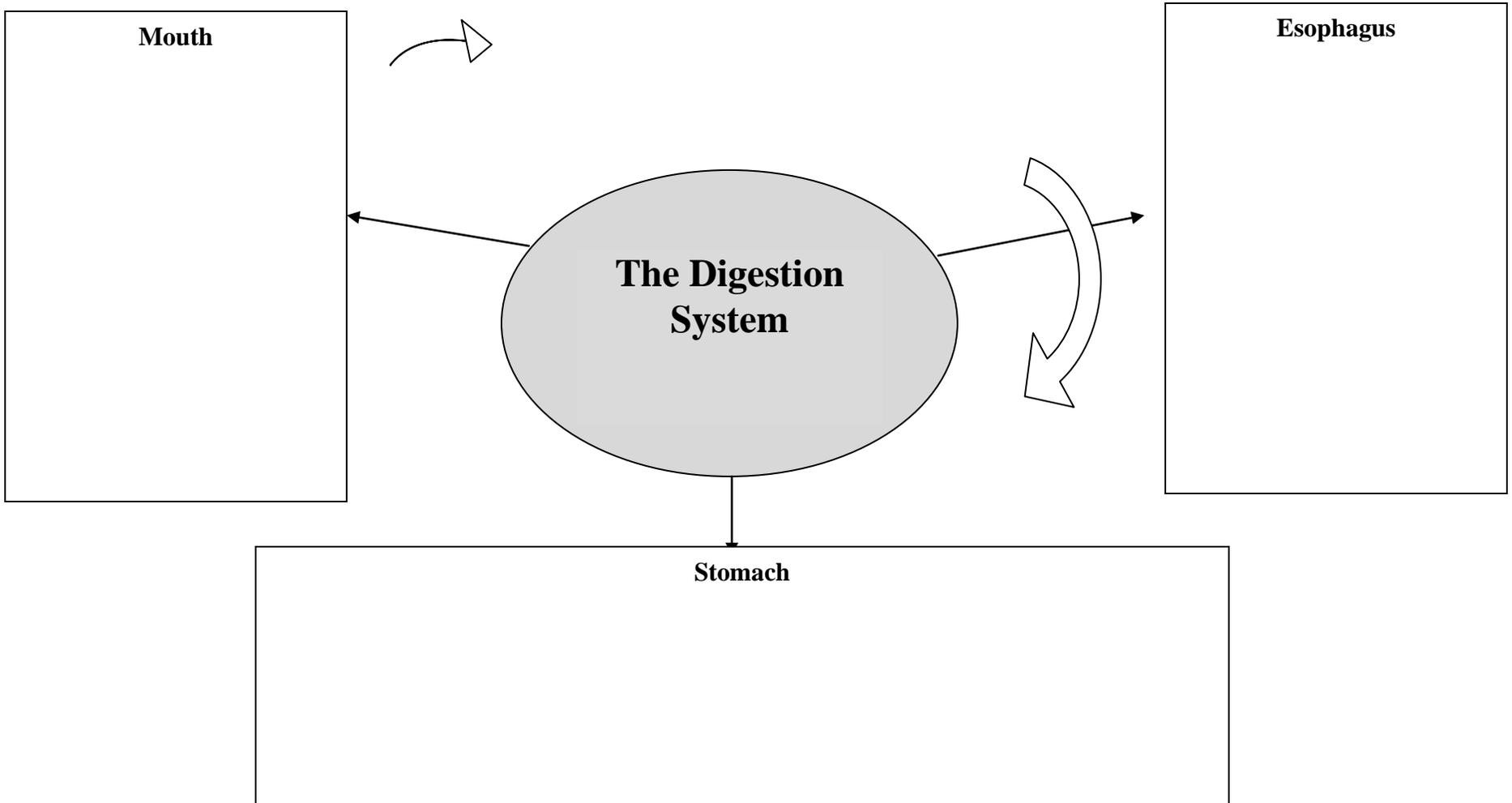
DIRECTIONS: *Rate your knowledge of the following words, and write the definition of each vocabulary word.*

Category	Word	Pre-Lesson Rating (circle)	Definition	Visual (optional)	Post-Lesson Rating (circle)
Body System	Digestive System				
Organs	gastrointestinal (GI) tract				
	esophagus				
	stomach				
	small intestine				
	large intestine				
	gall bladder				
	liver				

Category	Word	Pre-Lesson Rating (circle)	Definition	Visual (optional)	Post-Lesson Rating (circle)
Processes	peristalsis				
	mechanical digestion				
	chemical digestion				
	absorption				
	elimination				
Body Production/ Part	feces				
	villi				
	bile				

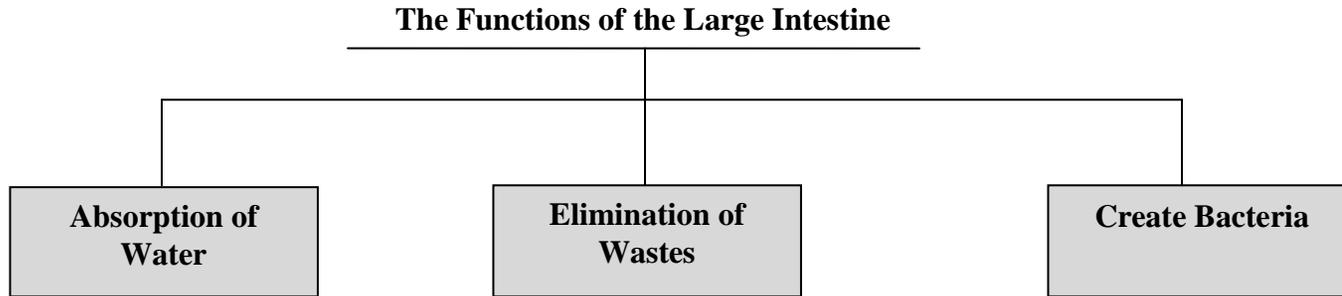
Description Web:
The Digestion System

Directions: *For each organ (mouth, esophagus, stomach), describe the role it plays in helping the body digest its food.*



Function Tree:
The Functions and Disorders of the Large Intestine

DIRECTIONS: For each “branch” write one function of the small intestine and describe how it helps the body. In the box below, list the three different disorders (problems) that can occur in the large intestine. Describe how each disorder affects the body.



Common Intestinal Disorders		
Food Allergies	Ulcers	Heartburn

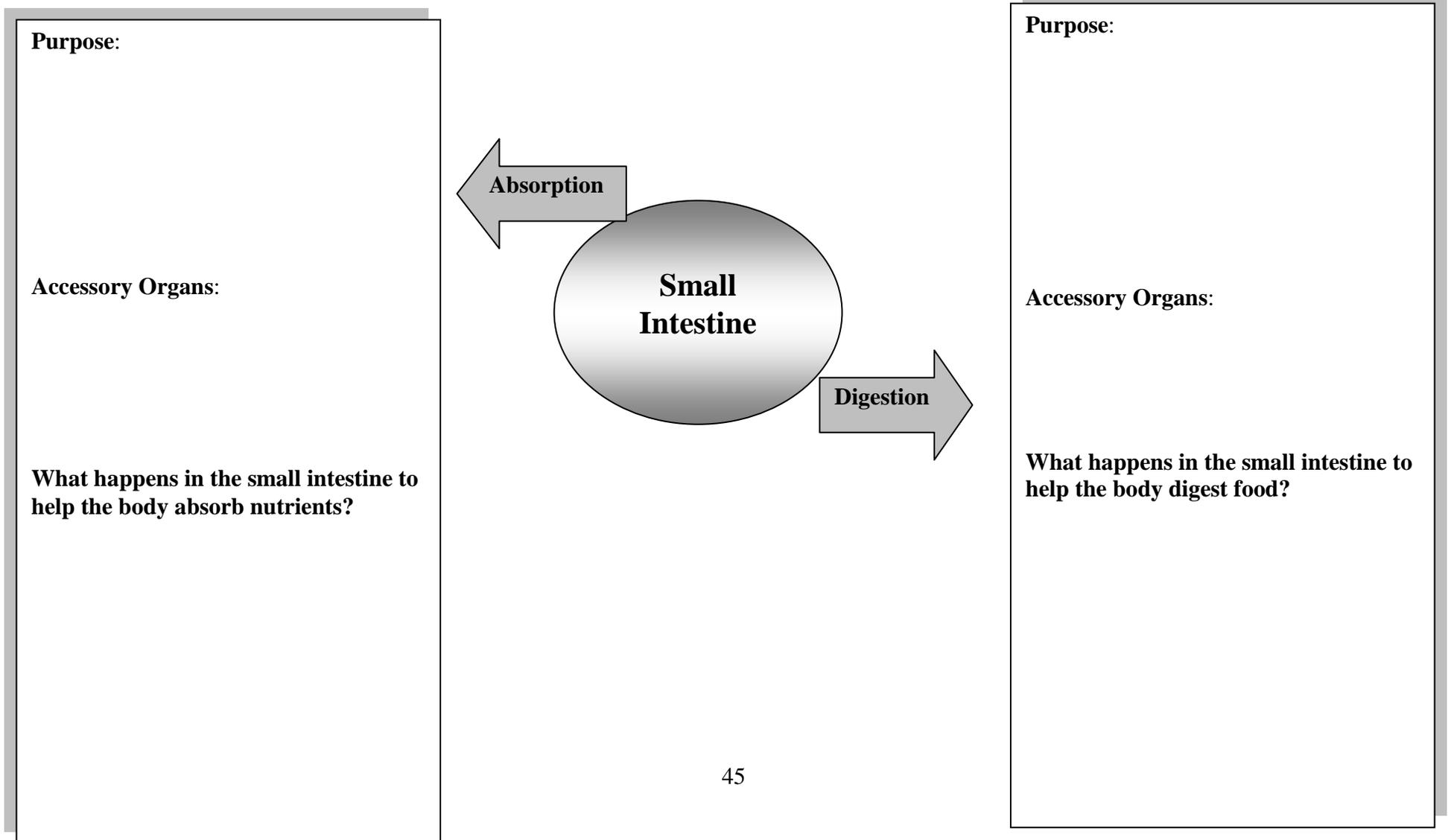
Function Matrix:
The Organs of the Digestive System

DIRECTIONS: *Complete the table below.*

Organ	Physical Description (What does it look like? What is it connected to?)	Function in the Digestive System	Mechanical/Chemical Digestion? (M/C)
Mouth			
Esophagus			
Stomach			
Small Intestine			
Large Intestine			
Liver			
Gall Bladder			

Graphic Organizer:
The Absorption and Digestion of the Small Intestine

DIRECTIONS: Compare the two main processes of the small intestine—absorption and digestion. Explain the purpose of these functions, list the accessory organs (organ/function) that support this function, and describe how the small intestine absorbs and digests your food.

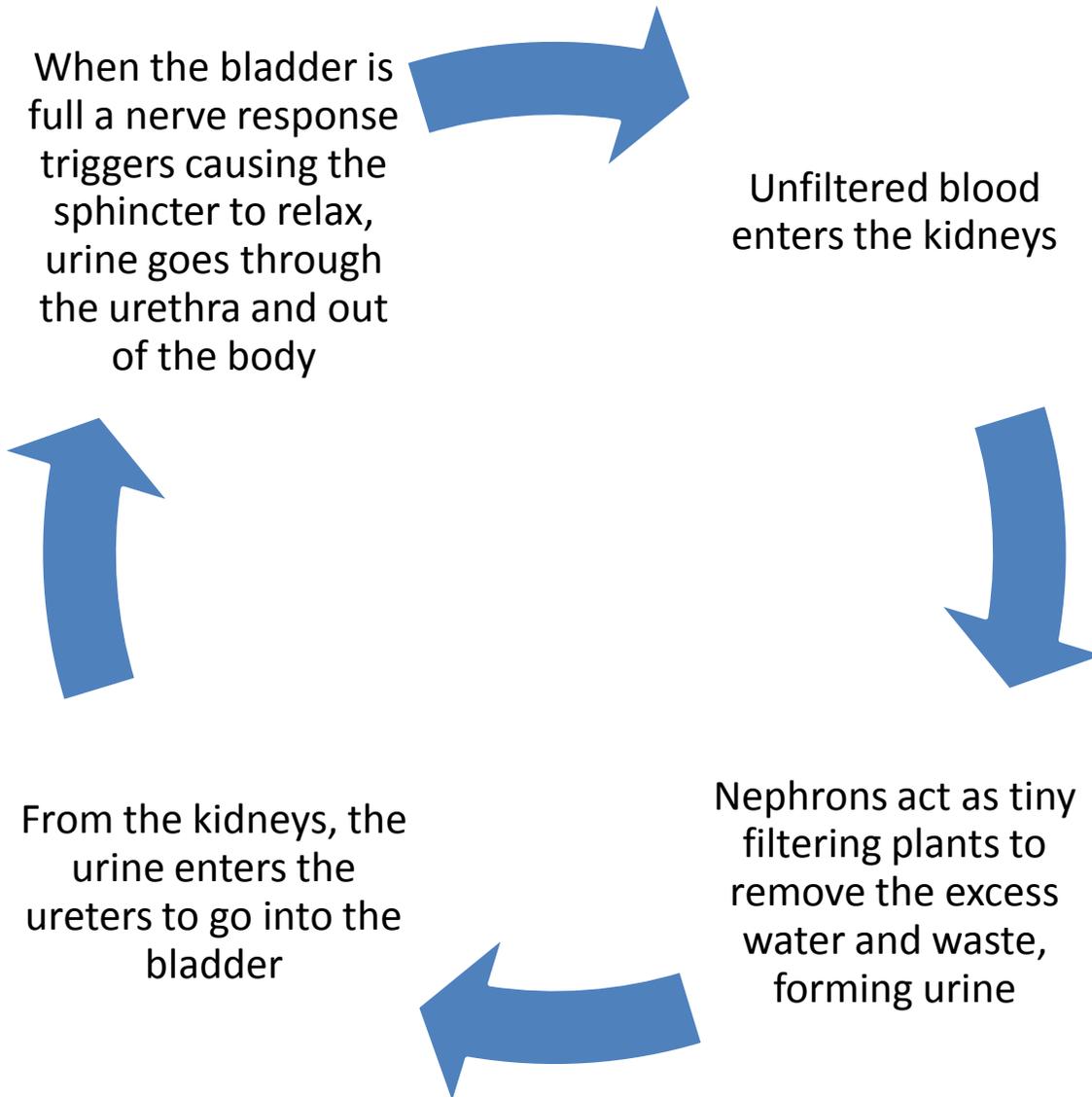


Key Vocabulary: The Excretory System

DIRECTIONS: *Rate your knowledge of the words below then, write the definition of each vocabulary word.*

Category	Word	Pre-Lesson Rating (circle one)	Definition/Function	Post-Lesson Rating (circle one)
Body System	excretory system			
	urinary system			
Organs	kidney			
	ureter			
	Urethra			
	Bladder			
Processes	excretion			
	urination			
Body Production/ Part	urine			
	nephron			
	kidney failure			
Other	dialysis			

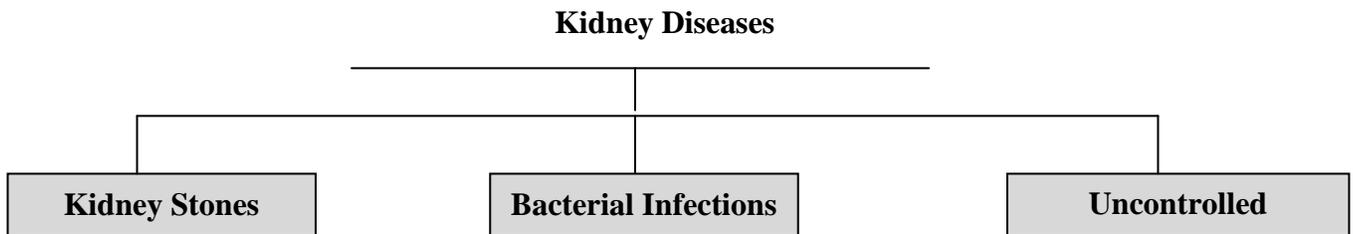
Graphic Organizer:
The Urinary Filtering System



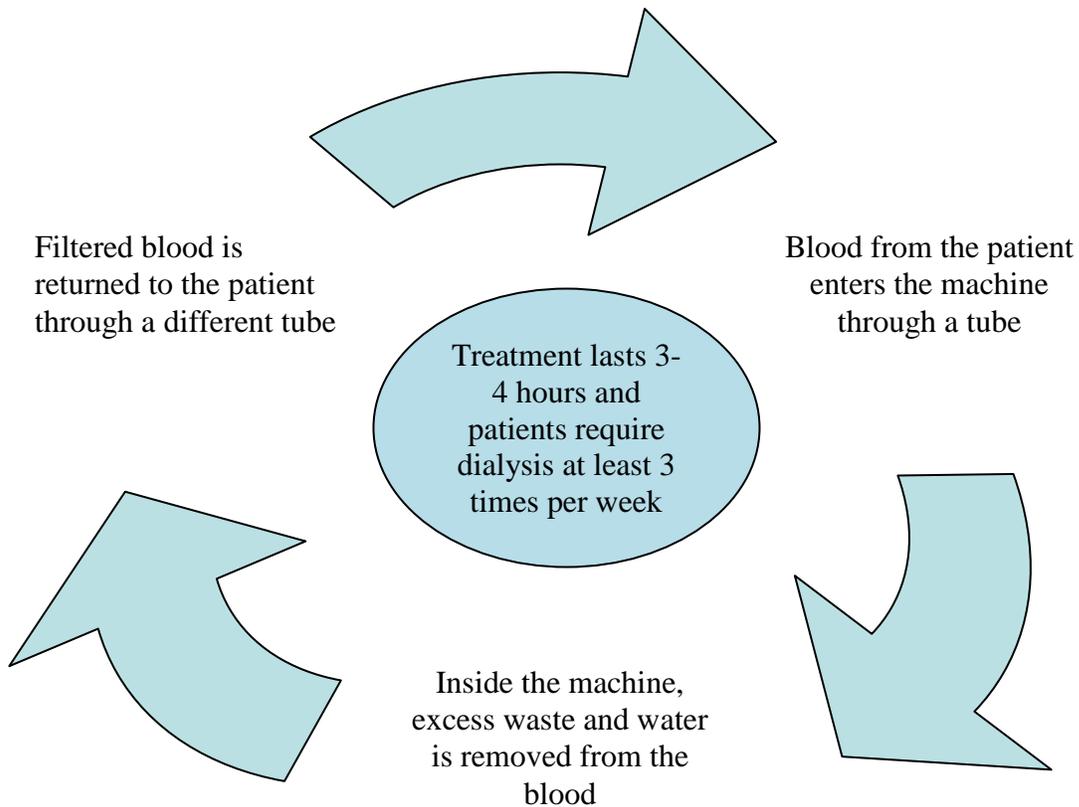
Think- Pair-Share: Why is it important for the body to rid itself for excess water and waste? What would happen if the body kept these in the blood?

Characteristics Tree:
Kidney Disease and Dialysis

DIRECTIONS: *On the diagram below, list the different kidney diseases and their characteristics below. Using what you know about the urinary filtering system and the text complete the diagram for how dialysis rids the body of waste.*



How Dialysis Helps Rid the Body of Excess Waste and Water



Fill-in-the-Blank Content Vocabulary Recall: Chapter 5

DIRECTIONS: Use the Key Vocabulary boxes for each section in order to complete each of the following sections.

Food and Nutrition

_____ are very important in maintaining a balanced diet. There are two different categories of nutrients, _____ and _____. Macronutrients _____ by providing the body with energy. Examples of such nutrients are _____, _____, _____, and _____. On the other hand _____ function by giving the body important _____ and _____ that are important for many of the body's _____. The main goal of eating healthy is to maintain a normal _____ to prevent diseases like _____ and diabetes. The USDA uses the _____ visual in order to help people determine how much they should eat from different groups to maintain a _____ diet.

Key Vocabulary		
nutrients	function	lipids
macronutrients	carbohydrates	water
micronutrients	proteins	processes
minerals	vitamins	MyPyramid
balanced	obesity	Body mass index

The Digestive System

The _____ is very important in helping the body _____ waste and _____ essential nutrients. Important organs in the digestive system are the _____, _____, _____, _____, and the _____ and _____ intestine. While _____ do not have a main role in processing food, they supply very important _____ to support the digestive process. The first process of digestion is called _____ which is aided by the process called _____. Specifically _____, are the muscle contractions in the _____ that allows the digestion process to move toward the next step. The other process which occurs in the intestines is called _____. In addition to this type of digestion in the small intestines, _____ occurs in order for the body to get important nutrients from the food a person eats. The last step in the digestion process is _____ leading to creation and expulsion of _____.

Key Vocabulary		
digestive system	eliminate	absorb
accessory organs	stomach	gastrointestinal tract
peristalsis	small	esophagus
chemical digestion	liver	gall bladder
mechanical digestion	substances	large
feces	elimination	absorption

The Excretory System

The _____ is also another essential group of organs providing homeostasis for the body. This system is made up of the _____, _____, _____, _____, and _____. In addition to these organs, the _____ system also supports the body in eliminating waste. The _____ are the main organs of this system and it works to filter the excess water and waste from the blood so that body can rid itself of toxins. After the blood enters the _____, it goes through small filters called _____ which act to clean the blood. Excess waste becomes _____ which then goes to the _____ and the _____. Once this organ is at least half full, the sphincter relaxes allowing the fluid to proceed to the _____ which then is _____ by the body. Consequences of kidney disease can lead to the use of a machine called _____ requiring a patient to use it up to three times a week.

Key Vocabulary		
urinary	excretory system	large intestine
nephrons	kidneys	skin
urine	liver	bladder
ureter	skin	urethra
	dialysis	eliminated

Fill-in-the-Blank Content Vocabulary Recall Answer Key: Chapter 5

Paragraph #1: Food and Nutrients

Nutrients are very important in maintaining a balanced diet. There are two different categories of nutrients, **macronutrients** and **micronutrients**. Macronutrients **function** by providing the body with energy. Examples of such nutrients are **carbohydrates**, **proteins**, **water**, and **lipids**. On the other hand, **micronutrients** function by giving the body important **vitamins** and **minerals** that are important for many of the body's **processes**. The main goal of eating healthy is to maintain a normal **body mass index** to prevent diseases like **obesity** and diabetes. The USDA uses the **MyPyramid** visual in order to help people determine how much they should eat from different groups to maintain a **balanced** diet.

Paragraph #2: The Digestive System

The **digestive system** is very important in helping the body **eliminate** waste and **absorb** essential nutrients. Important organs in the digestive system are the **mouth**, **gastrointestinal tract**, **esophagus**, **stomach**, **gall bladder**, and **small** and **large** intestine. While **accessory organs** do not have a main role in processing food, they supply very important **substances** to support the digestive process. The first process of digestion is called **mechanical digestion** which is aided by the process called **peristalsis**. Specifically, **peristalsis**, are the muscle contractions in the **gastrointestinal tract** that allows the digestion process to move toward the next step. The other process which occurs in the intestines is called **chemical digestion**. In addition to this type of digestion in the small intestines, **absorption** occurs in order for the body to get important nutrients from the food a person eats. The last step in the digestion process is **elimination** leading to creation and expulsion of **feces**.

Paragraph #3: The Excretory and Urinary Systems

The **excretory system** is also another essential group of organs providing homeostasis for the body. This system is made up of the **large intestine**, **kidneys**, **liver**, **skin**, and **lungs**. In addition to these organs, the **urinary** system also supports the body in eliminating waste. The **kidneys** are the main organs of this system and it works to filter the excess water and waste from the blood so that body can rid itself of toxins. After the blood enters the **kidneys**, it goes through small filters called **nephrons** which act to clean the blood. Excess waste becomes **urine** which then goes to the **ureter** and the **bladder**. Once this organ is at least half full, the sphincter relaxes allowing the fluid to proceed to the **urethra** which then is **eliminated** by the body. Consequences of kidney disease can lead to the use of a machine called **dialysis** requiring a patient to use it up to three times a week.