

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 | deliquesce- | 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 | platin | 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 | xyl- | 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.

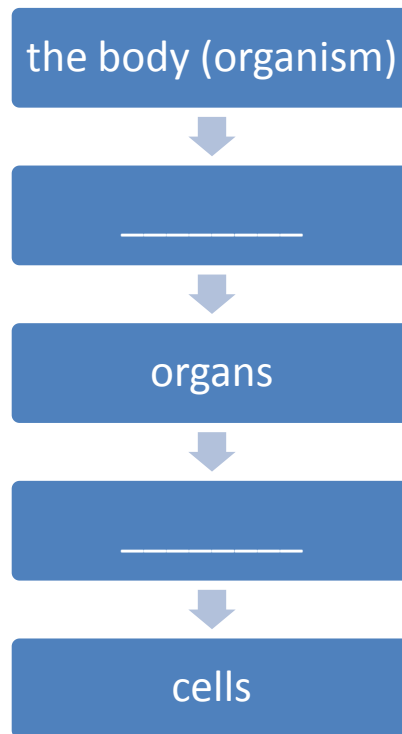
TRUE / FALSE Before reading:

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?

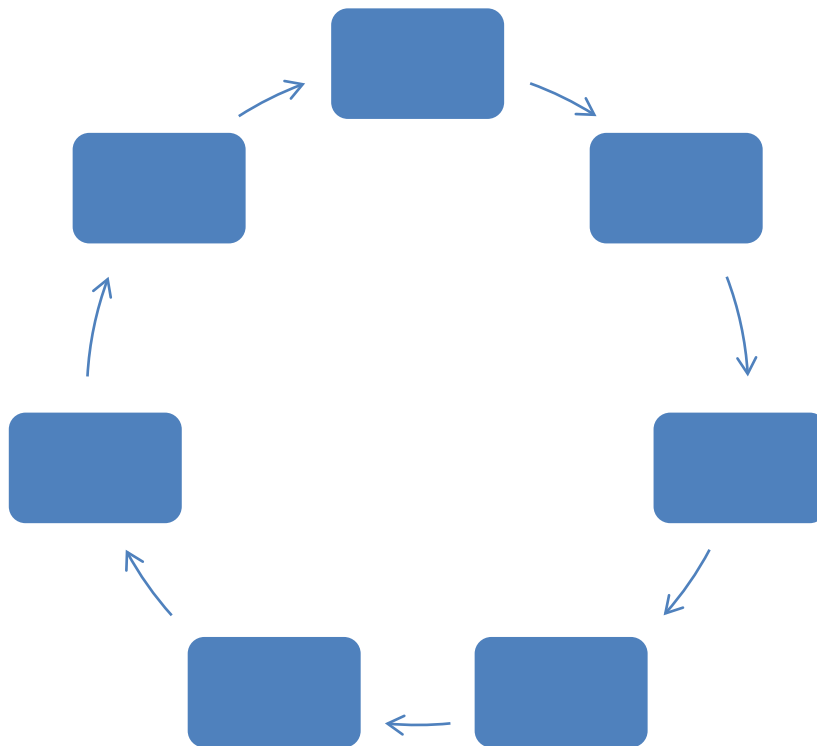
Positive and negative

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... |

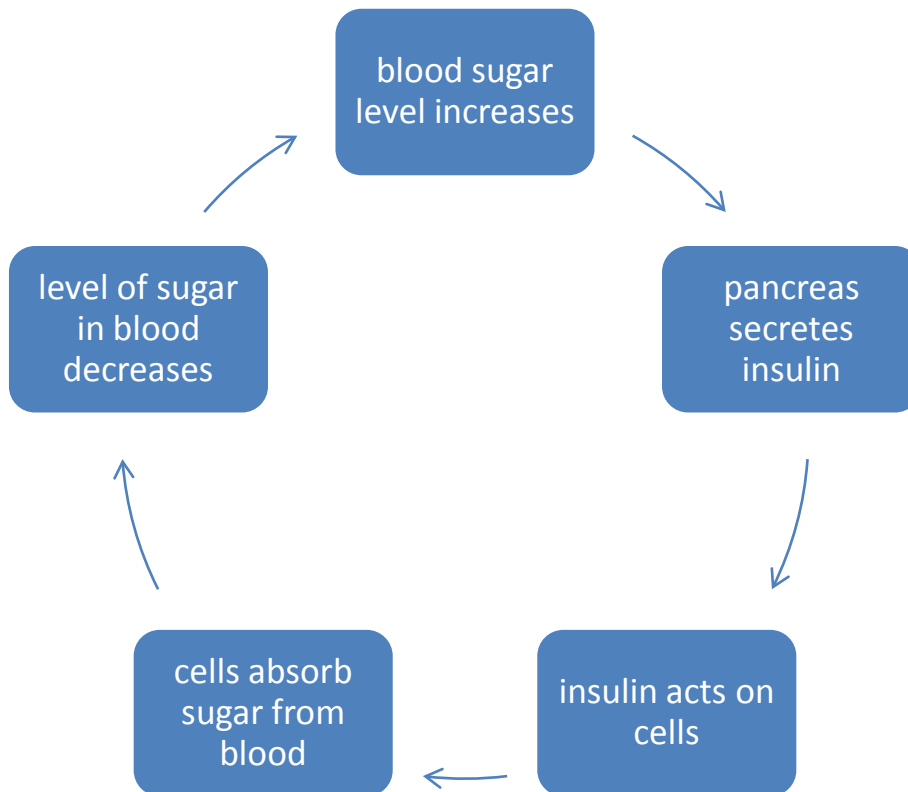
DIRECTIONS: Please complete the sequence chart below for a specific type of feedback regulation loop. Specify the type of feedback loop by filling in the sentence blank below.

This sequence chart illustrates the _____ feedback regulation loop.



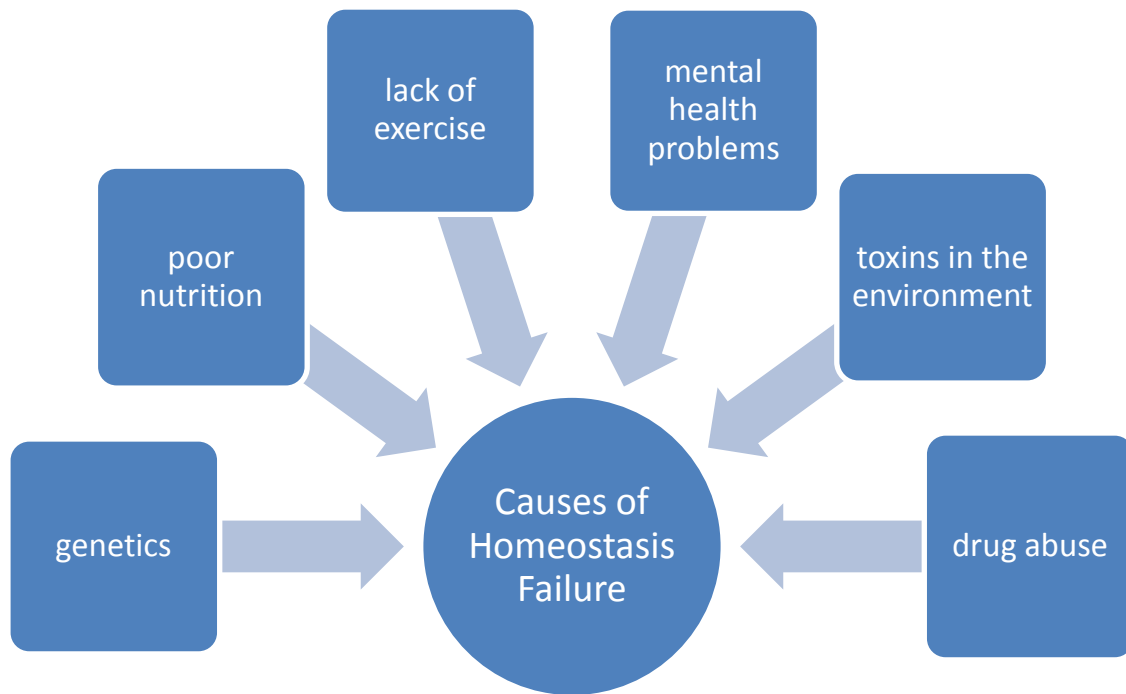
Graphic Organizer: Negative Feedback Regulation (Glucoregulation)

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



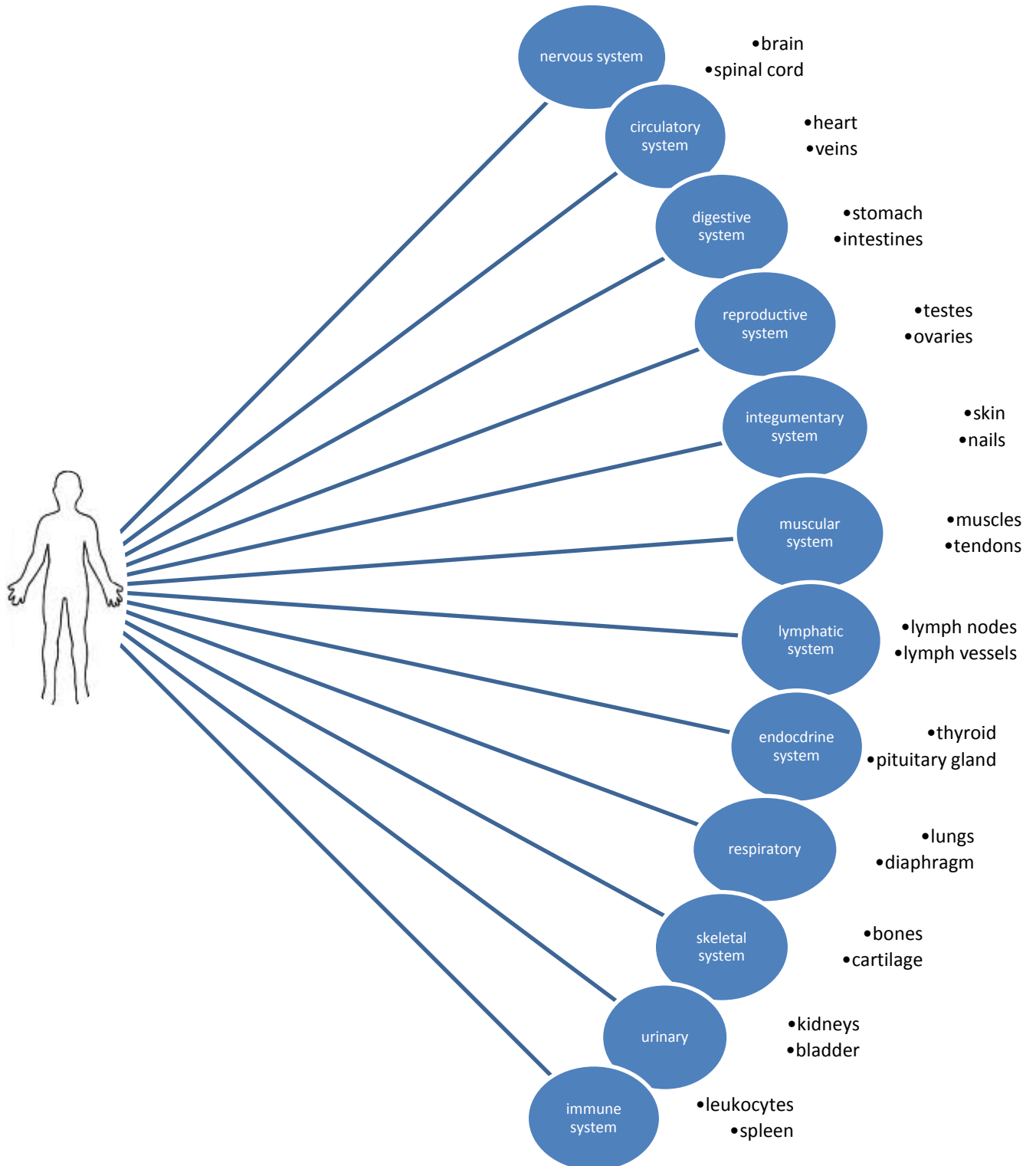
Graphic Organizer: Factors Leading to Failure of Homeostasis

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:

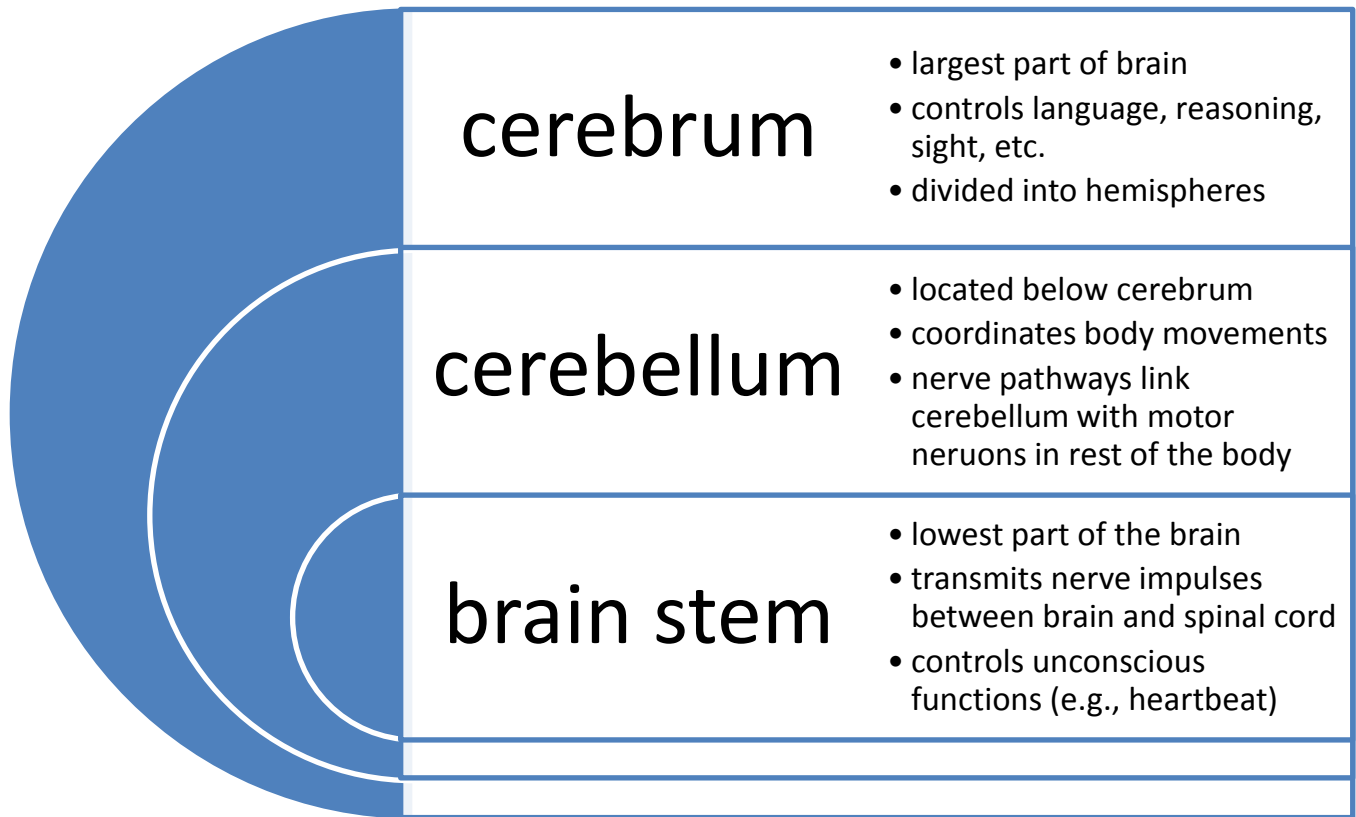
What causes nerve impulses?

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

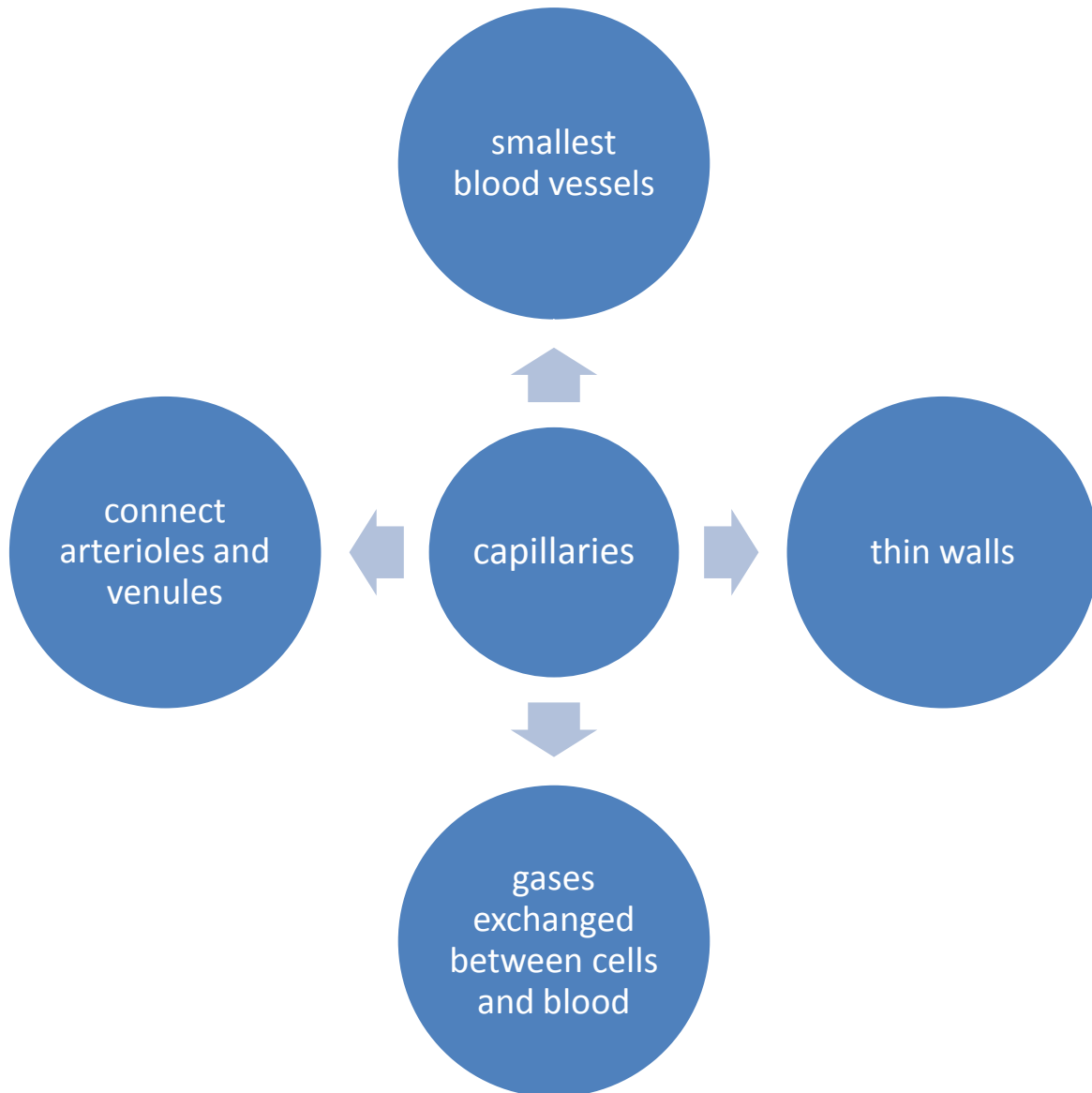
Features Matrix: Blood Vessels

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*

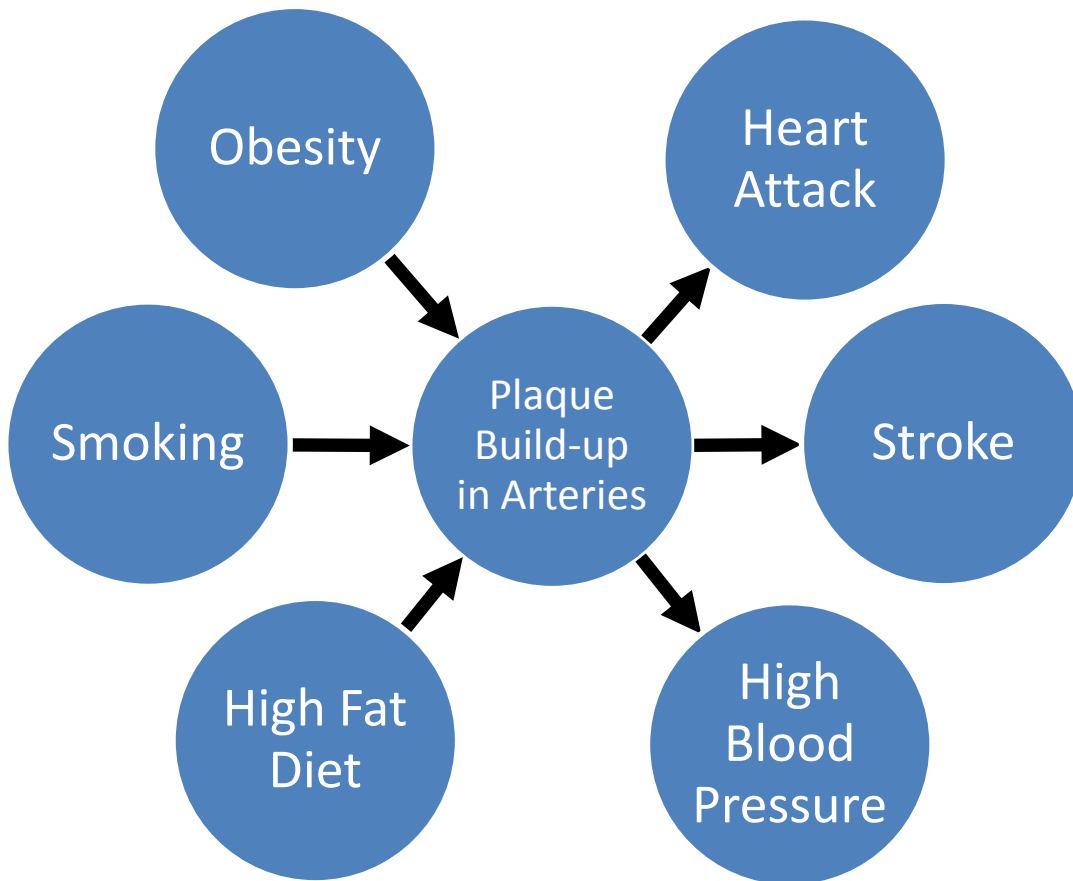


Cause and Effect Web: Cardiovascular Disease

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

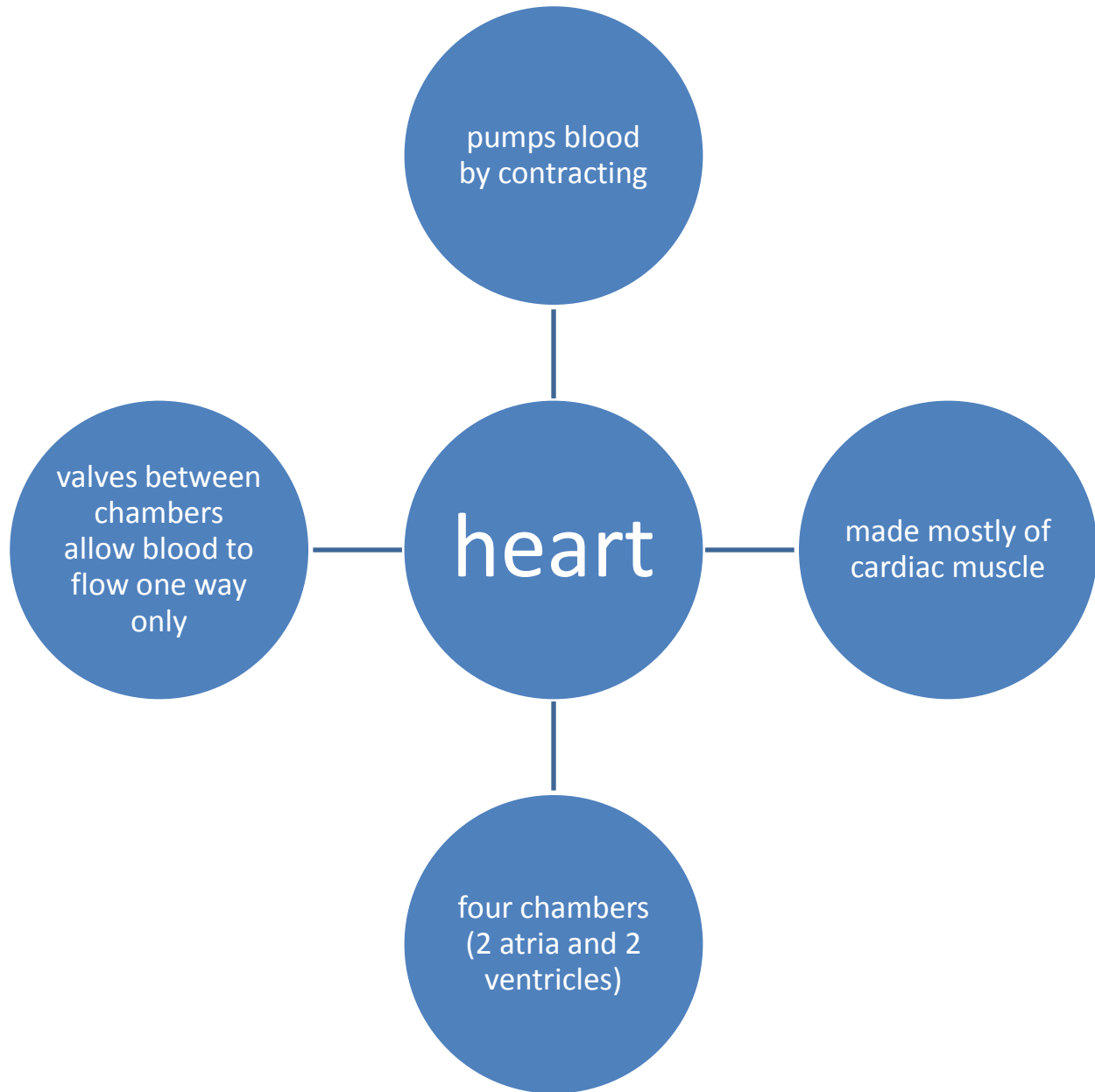
CAUSES

EFFECTS:



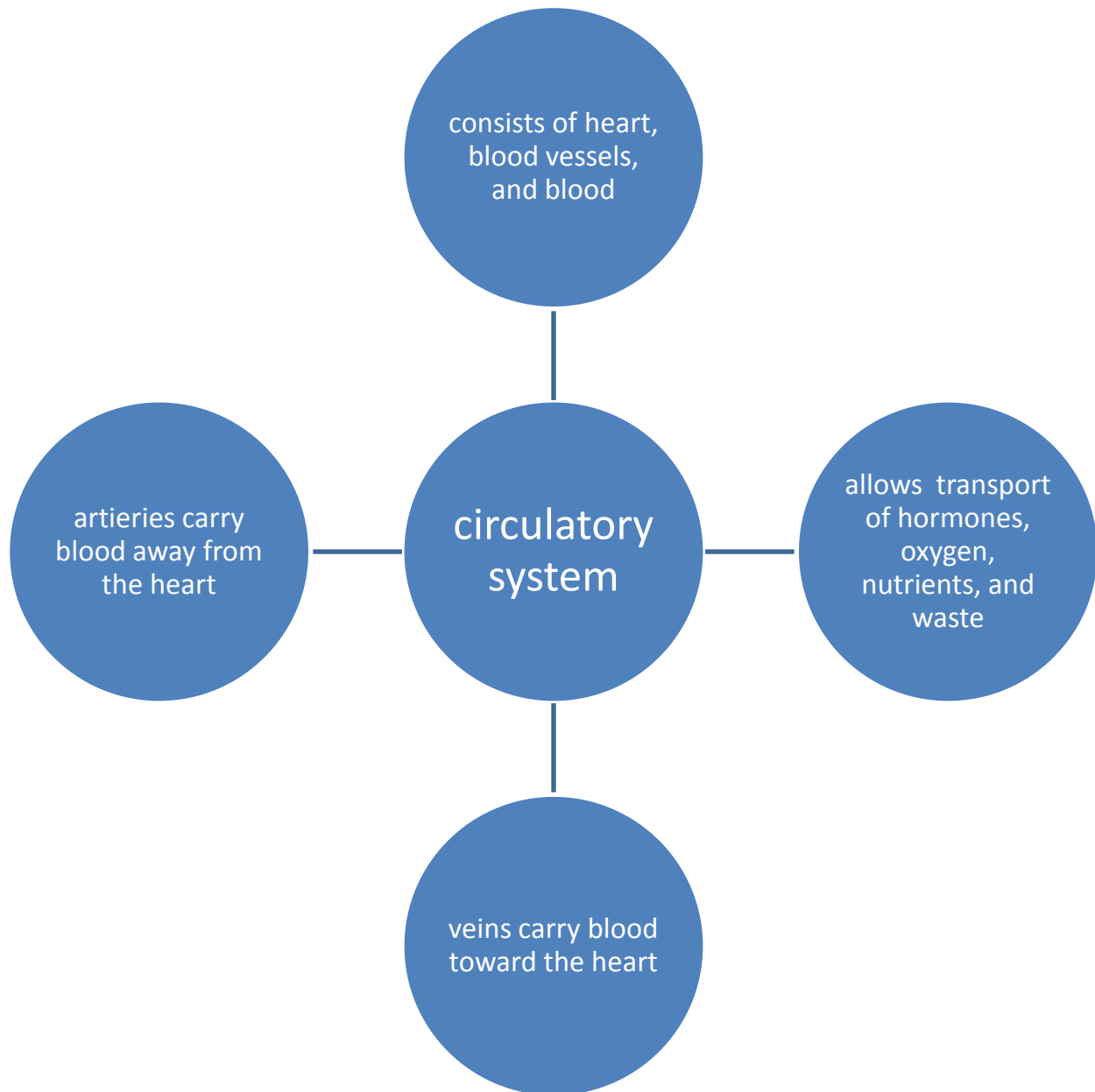
Description Web: The Heart

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



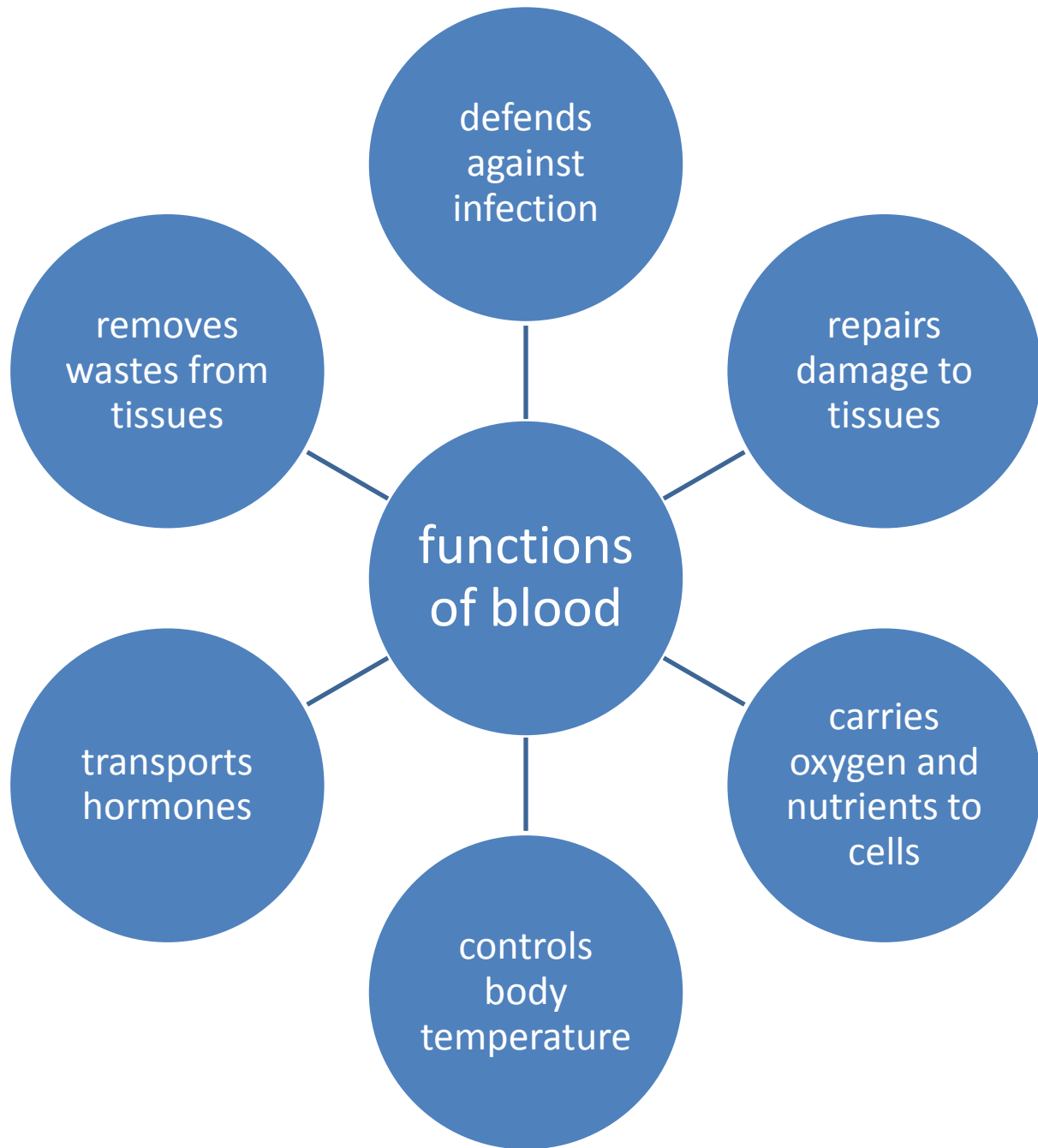
Description Web: Structure and Function of Circulatory System

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



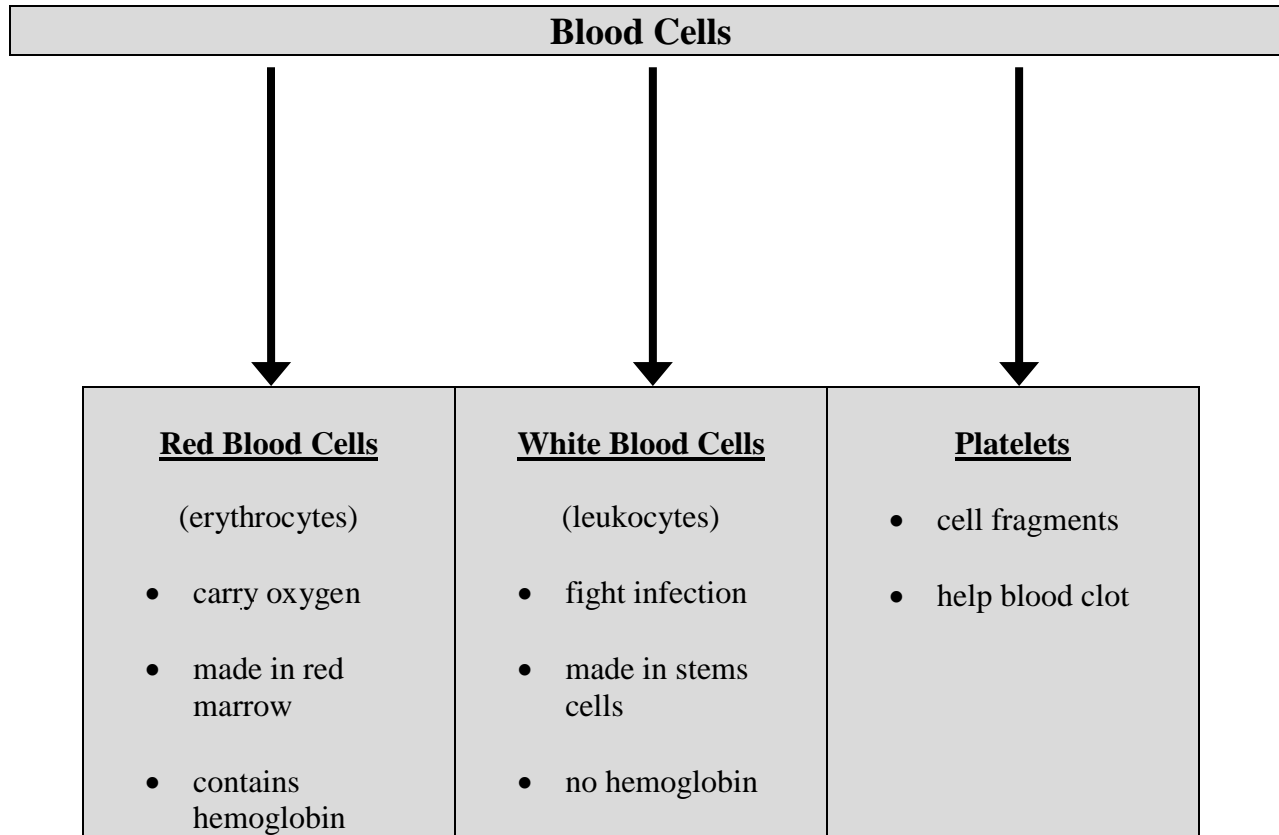
Description Web: Functions of Blood

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



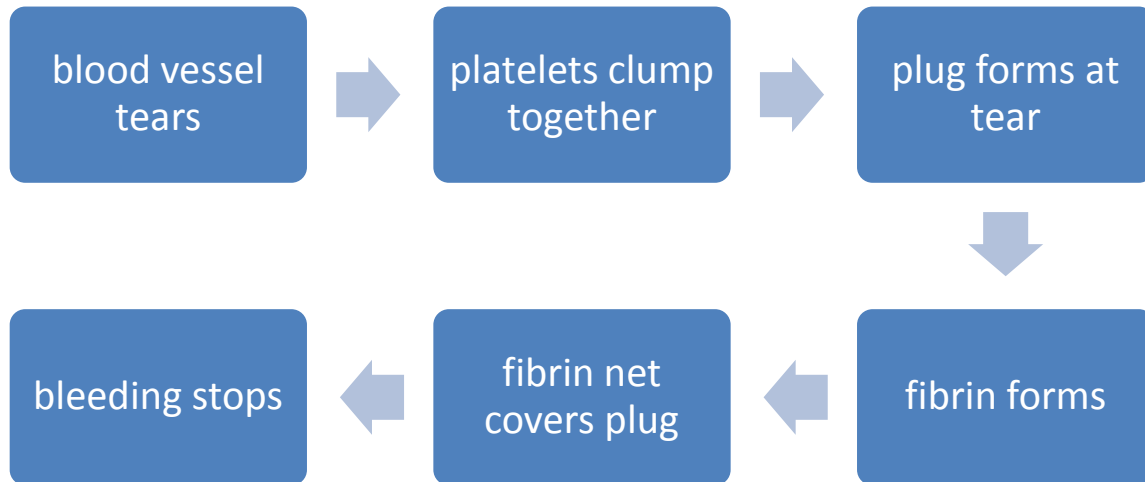
Classification Tree: Blood Cells

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

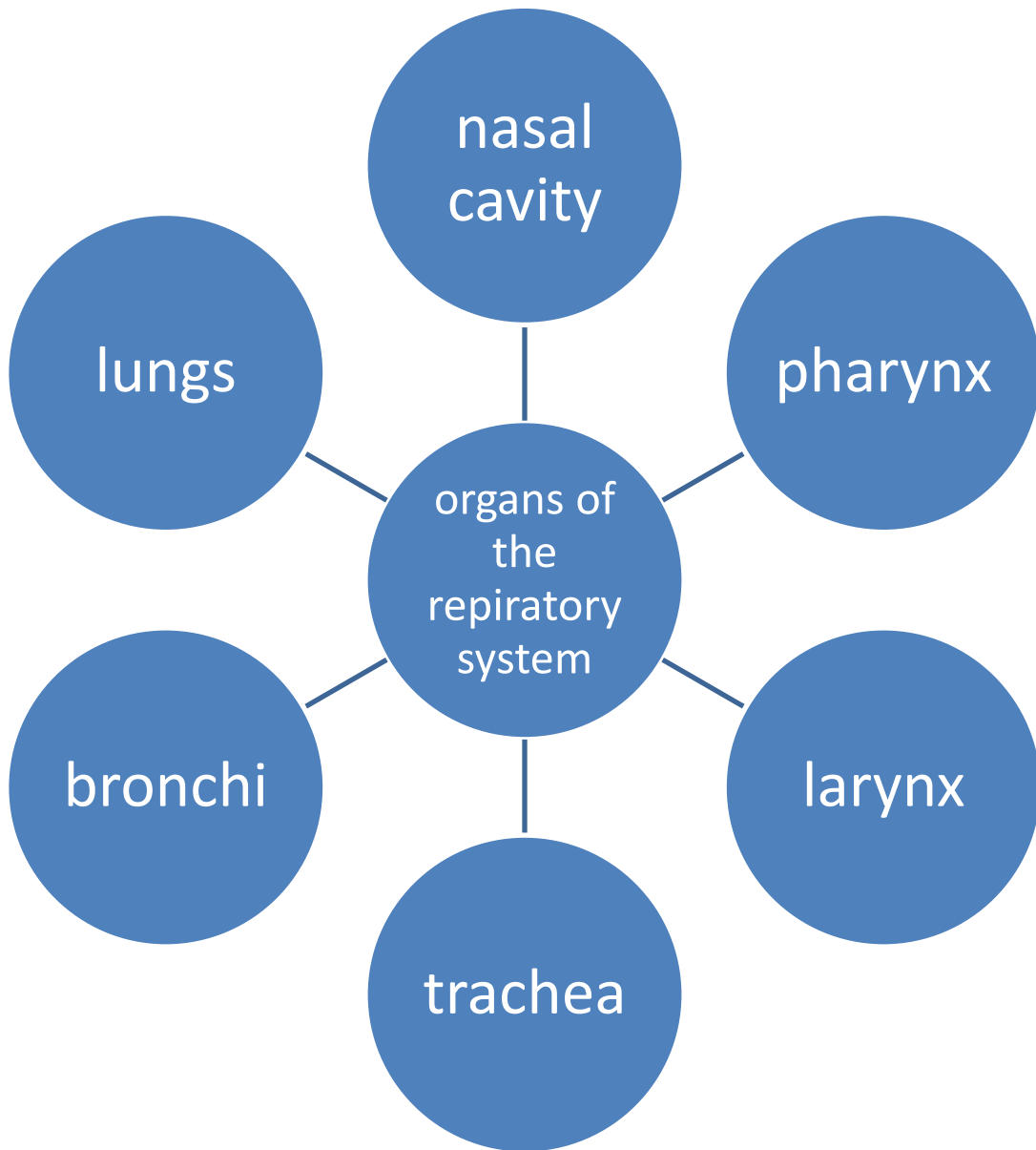
- cancer
- begins in bone marrow
- abnormal production of white blood cells

hemophilia

- genetic

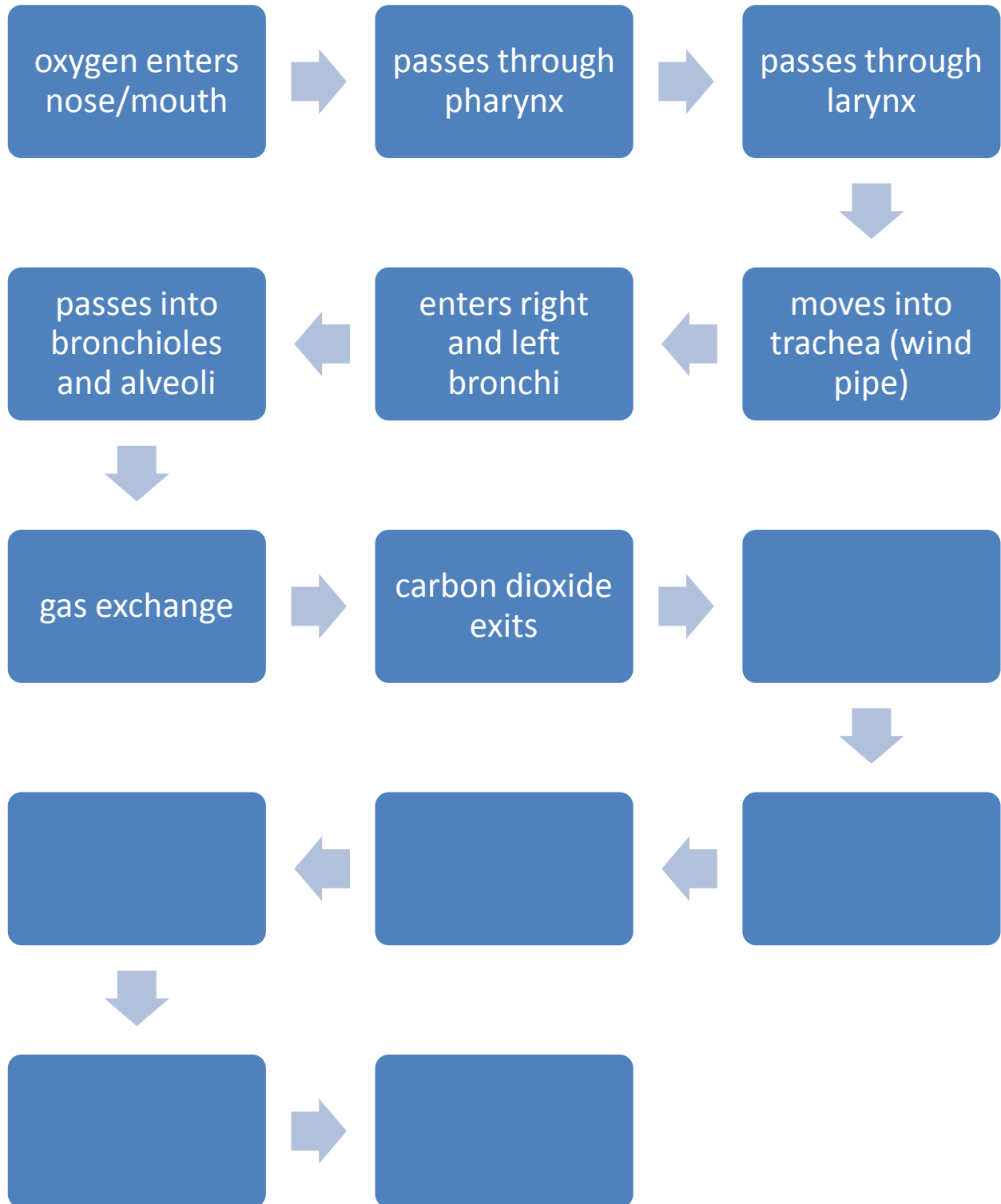
Description Web: Organs of the Respiratory System

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



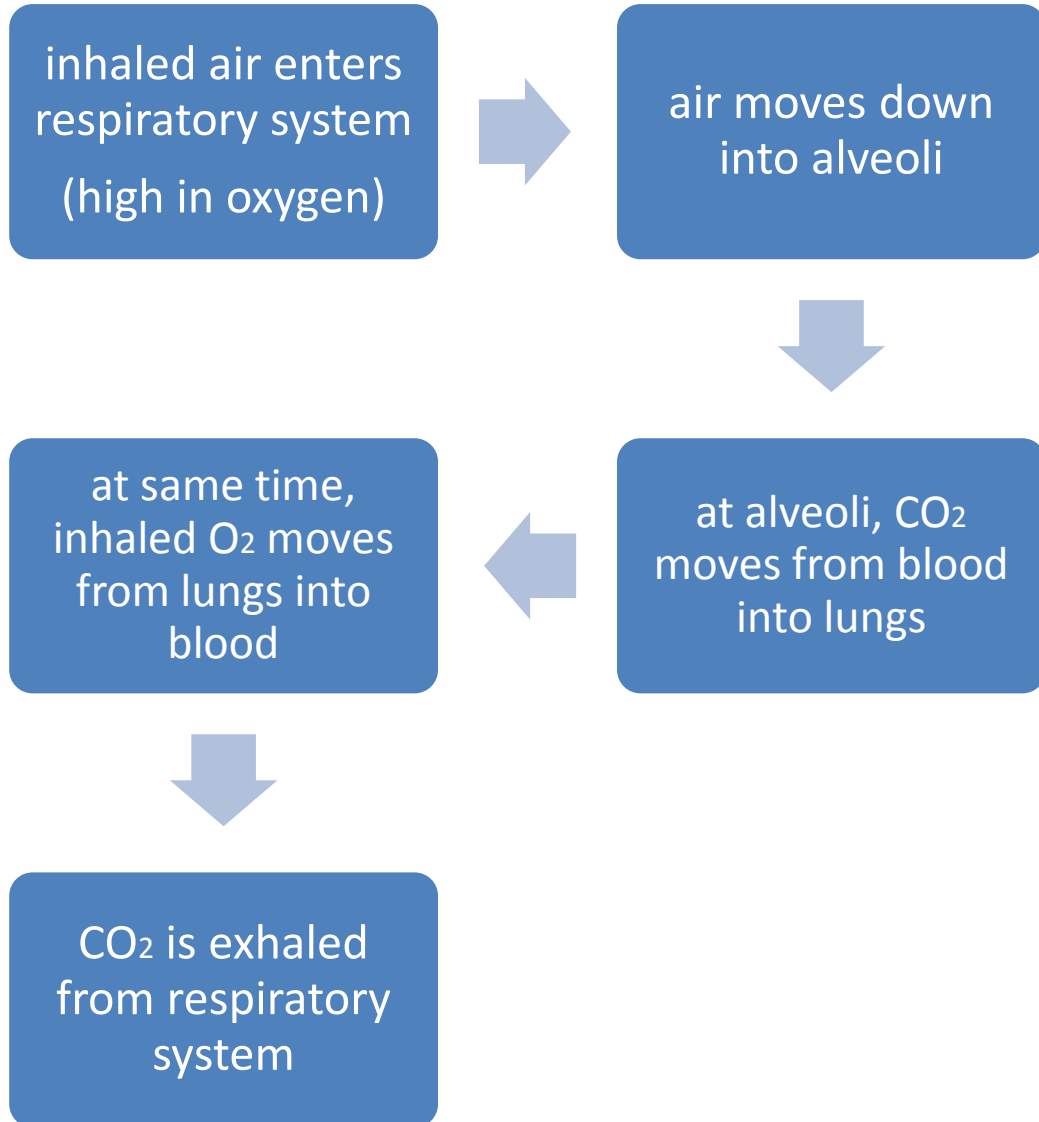
Sequence Map: Ventilation

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

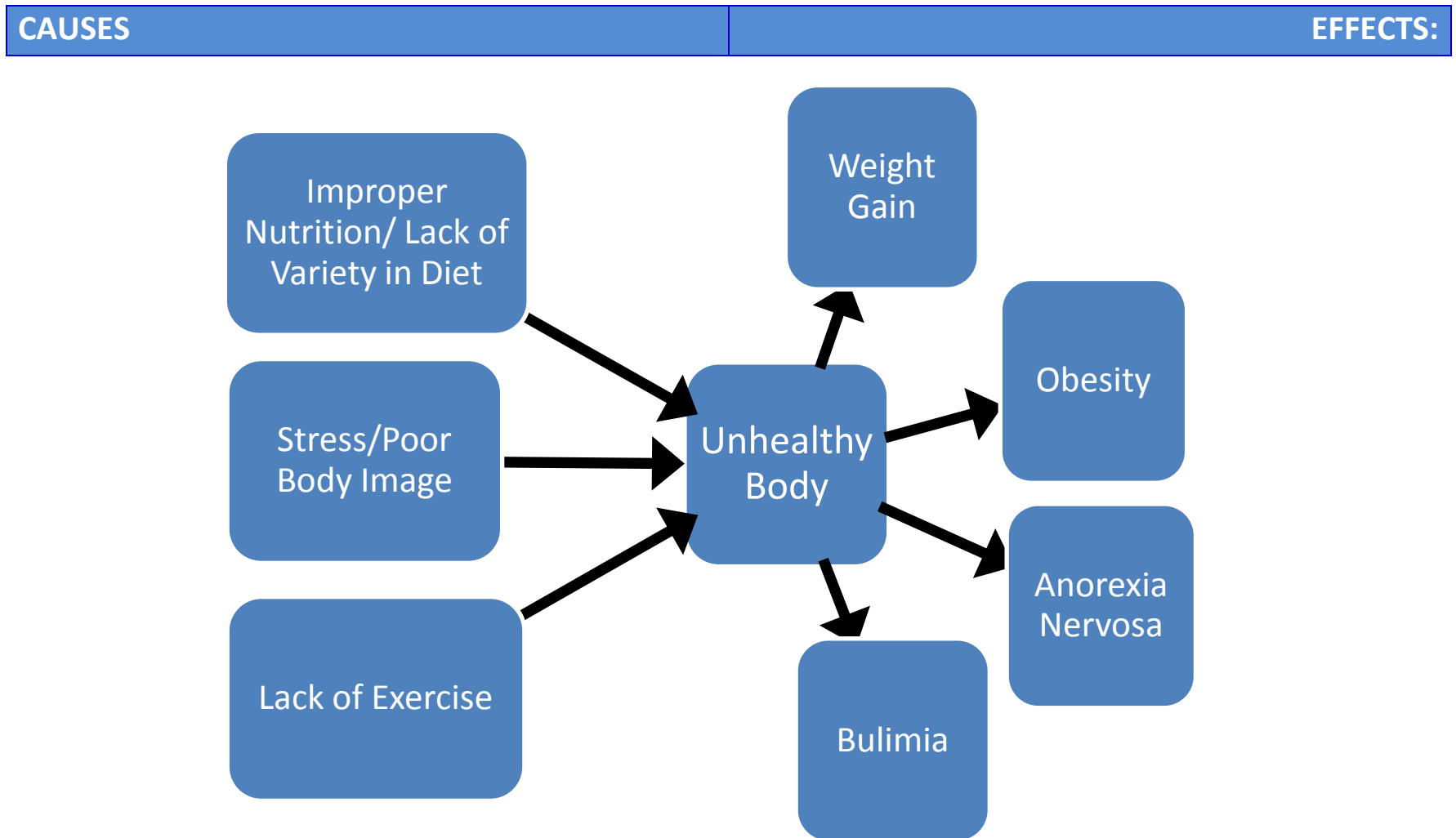
| Time Period | Food Selections | Grain | Veg. | Fruit | Oils | Milk | Meat | Other* |
|-------------------------|-----------------|-------|------|-------|------|------|------|--------|
| Breakfast (Morning) | | | | | | | | |
| Snack | | | | | | | | |
| Lunch (Early-Afternoon) | | | | | | | | |
| Snack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



Key Vocabulary: The Digestive System

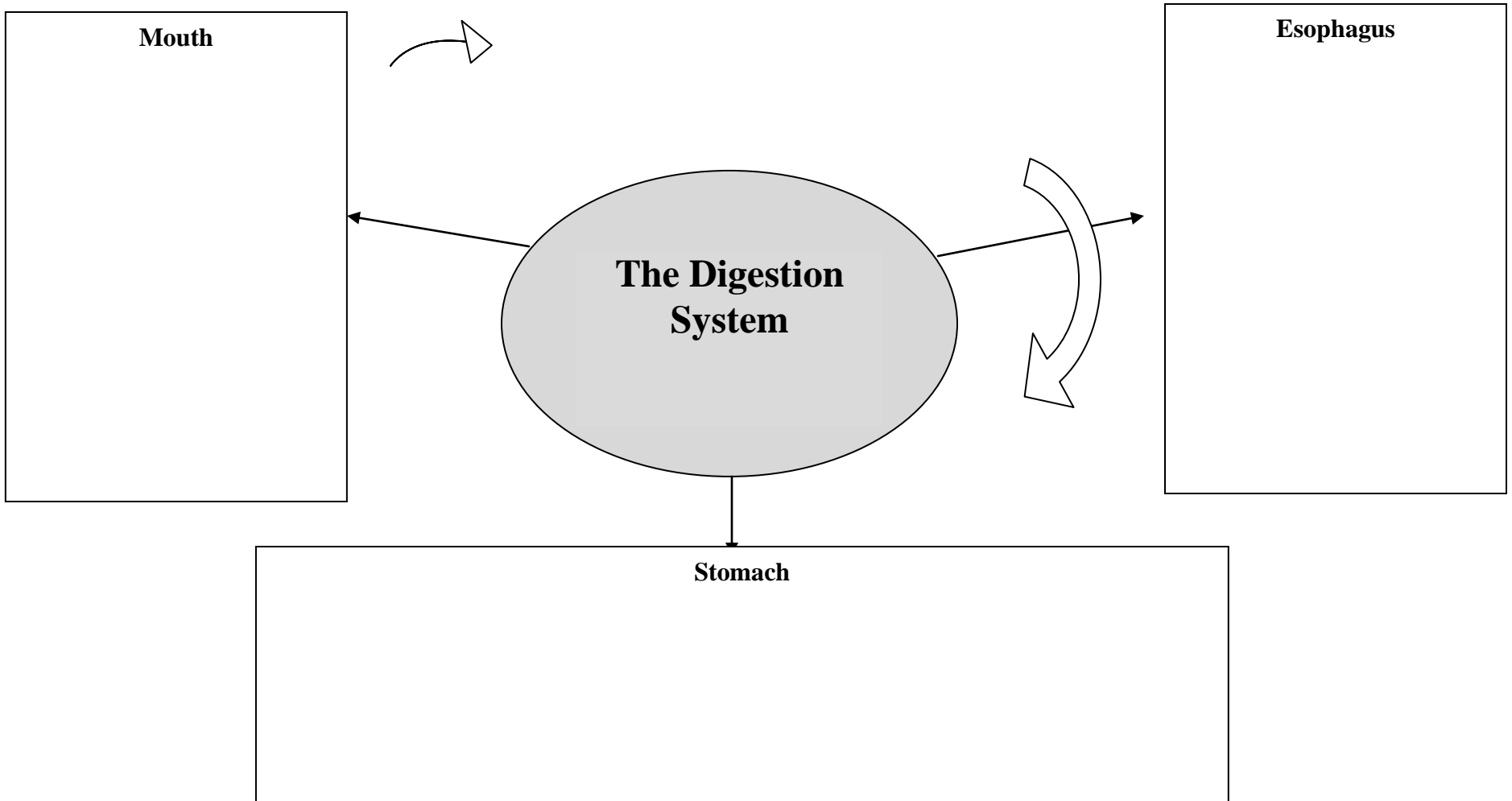
DIRECTIONS: *Rate your knowledge of the following words, and write the definition of each vocabulary word.*

| 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

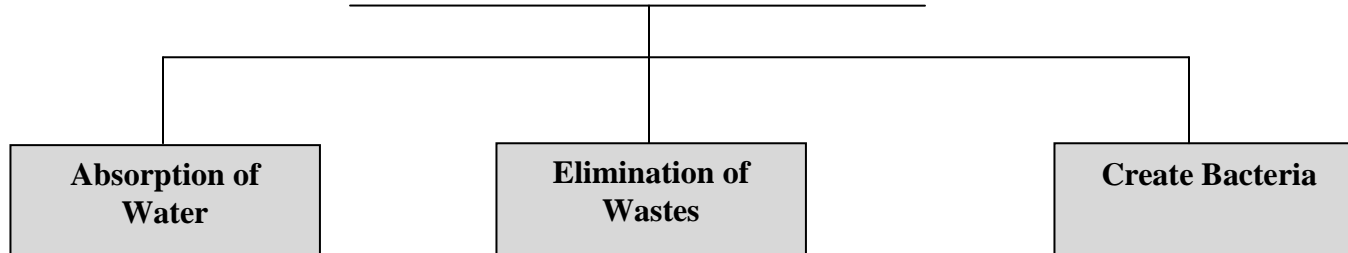
Directions: *For each organ (mouth, esophagus, stomach), describe the role it plays in helping the body digest its food.*



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.

The Functions of the Large Intestine



| 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 | | | |

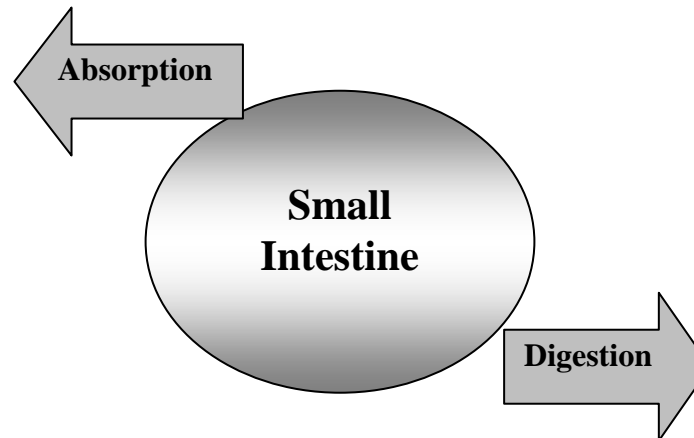
Graphic Organizer:
The Absorption and Digestion of the Small Intestine

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.

Purpose:

Accessory Organs:

What happens in the small intestine to help the body absorb nutrients?



Purpose:

Accessory Organs:

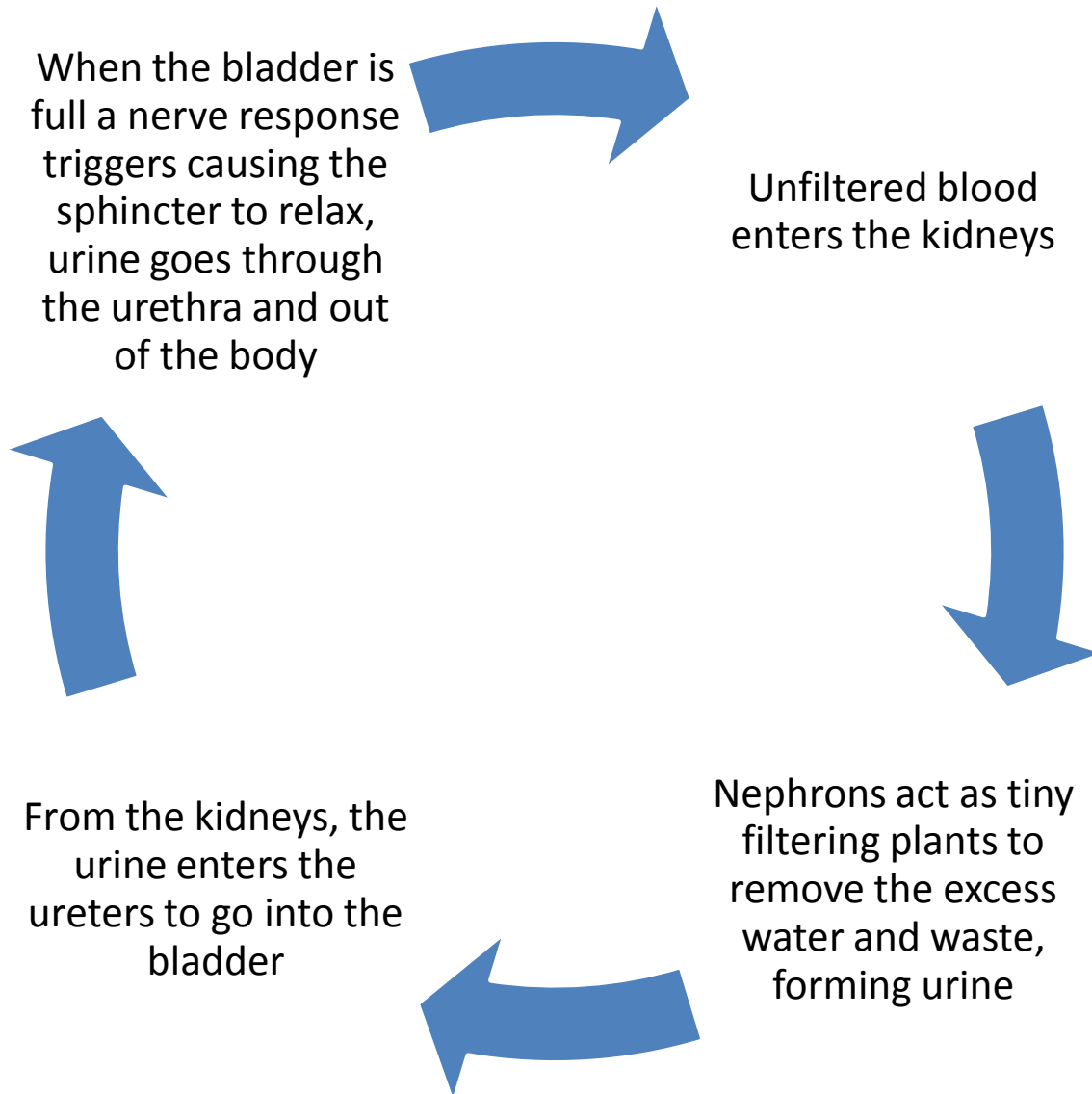
What happens in the small intestine to help the body digest food?

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 | | | |

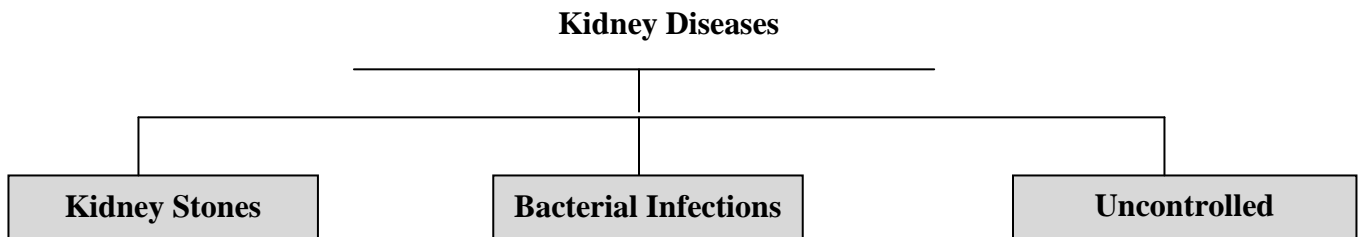
Graphic Organizer:
The Urinary Filtering System



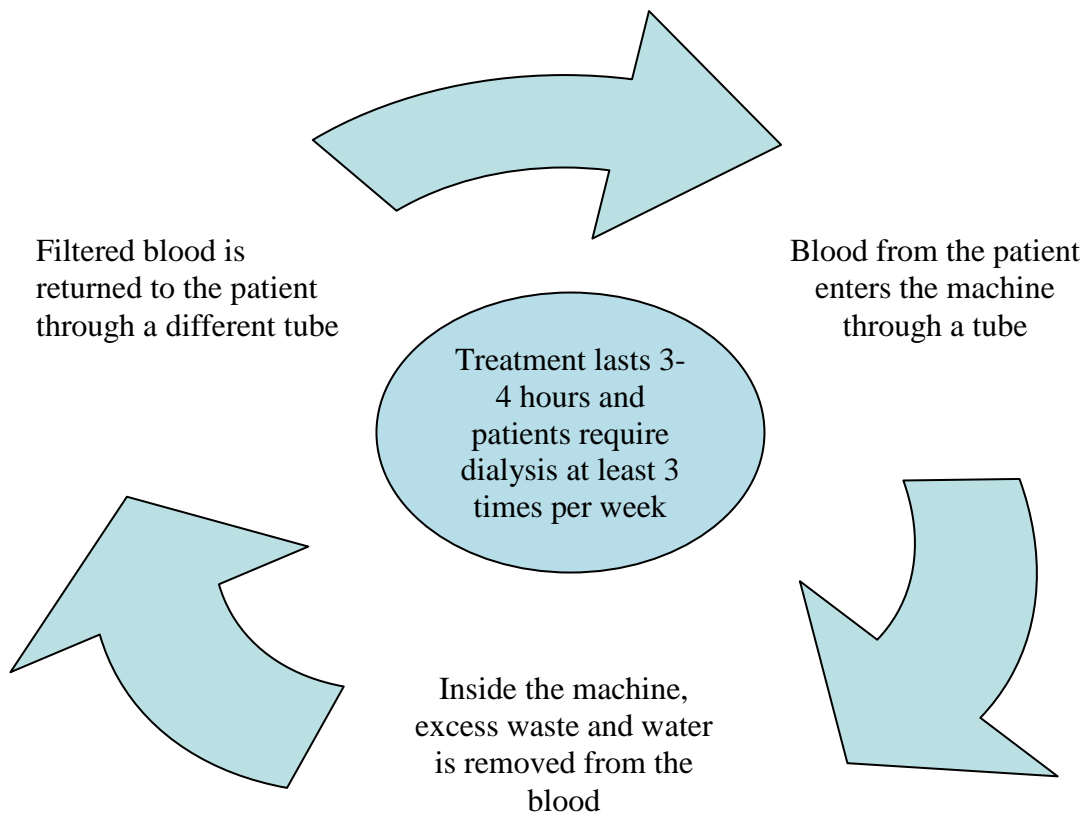
Think- Pair-Share: Why is it important for the body to rid itself for excess water and waste? What would happen if the body kept these in the blood?

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 macronutrients micronutrients minerals balanced | function carbohydrates proteins vitamins obesity | lipids water processes MyPyramid 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 accessory organs peristalsis chemical digestion mechanical digestion feces | eliminate stomach small liver substances elimination | absorb gastrointestinal tract esophagus gall bladder large 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 nephrons urine ureter | excretory system kidneys liver skin dialysis | large intestine skin bladder urethra 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.