

CHAPTER 2

Biology as a Science
Section 2-2

SKILL ACTIVITY
Applying definitions

Analyzing Science Terms

The study of biology requires an understanding of many technical terms. Sometimes you can find the meaning of an unfamiliar term by looking at its parts. In this activity you will analyze such parts to help you understand many of the terms you will encounter in biology.

Many words have prefixes and suffixes that provide clues to their meanings. The following table contains a list of prefixes and suffixes that are often part of biological terms. Look at the table and study it carefully.

Prefix	Meaning	Suffix	Meaning
Hydro-	Related to water	-logy	Study of
Intra-	Within	-phyll	Leaf
Bio-	Related to life	-plast	Organized living material
Proto-	First	-troph	Food
Chloro-	Greenish yellow	-cellular	Having to do with cells
Zoo-	Related to animals	-phyte	Plant
Ex-	Out	-synthesis	To put together
Hetero-	Different	-ation	Process
In-	Inside	-scope	Instrument for viewing
Micro-	Small	-lysis	A releasing or loosening
Photo-	Light	-cretion	The process of separating
Uni-	One	-gestion	To carry
Multi-	Many	-meter	Instrument used to measure
Auto-	Self-operating	-stasis	A stationary condition

Use the meanings of the prefixes and suffixes in the table to form words that will match these definitions.

1. _____ Removal of waste products from the body
2. _____ The study of small forms of life
3. _____ The study of animals
4. _____ Instrument used to measure water and other liquids
5. _____ A plant that grows in water
6. _____ The process of making something self-operating
7. _____ Small leaf
8. _____ Within a cell
9. _____ First organized particle

Each group of words listed below shares certain parts. The first two words in each group are defined for you. The part of the word and the part of the definition that correspond are underlined. Use these definitions to help you to define each word that follows the first two words.

10. Endospore: Inner layer of the wall of a seed
Microscope: Instrument used for looking at small objects
Microspore: _____
11. Phototropism: Response to light
Chemotherapy: Treatment that involves chemicals
Chemotropism: _____
12. Pesticide: An agent used to destroy pests
Herbaceous: Related to leafy plants
Herbicide: _____
13. Dermatology: The study of the structure and the diseases of skin
Sclerosis: Disease in which body tissues harden
Scleroderma: _____
14. Arthritis: Inflammation of the joints
Podiatrist: Doctor who treats and cares for the human foot
Arthropod: _____

Life Science Skills

Name _____

Date _____

Class _____

Use After Section 1:7.

The Language of Life Science

Life science words may seem difficult to understand at times. The following lists gives the meaning of prefixes, suffixes, and roots that are commonly used to form scientific terms. Whenever you find a new term in your study of life science, break it apart into suffixes, prefixes, and roots. Try to find these parts in the list below. Knowing what each part of a word means may help you remember what the entire word means.

Word Part	Meaning	Word Part	Meaning
a-	lacking; none	hiber-	winter
ab-	away from; out from	homo-	same; alike
alb-	white	hydr-	water
angio-	vessel	hypo-	beneath; under; less
anthropo-	humans	hyper-	above, over
arthro-	jointed	intra-	inside
-ate	used in forming verbs from nouns	-ism	a state or condition
-ation	used in forming nouns from verbs	-itis	inflammation; disease
audi-	hear	leuc-	white
auto-	self	-logy	study
bi-	two, twice, double	macro-	large
bio-	life, living	micro-	small
bronch-	windpipe	mono-	single
calor-	heat	multi-	many
carb-	carbon	non-	not
cardi-	heart	ocul-	eye
carn-	meat	odont-	tooth
cell-	storeroom; chamber	olf-	smell
cephal-	head	omni-	all
chlor-	green	opthal-	eye
chrom-	color	ov-	egg
coel-	hollow	phag-	eat
cyt-	cell	photo-	light
derm-	skin	-phyll	leaf
di-	two, double	plasm-	form
dia-	through; across	pneumo-	lungs
dors-	back	-pod	foot
echin-	spiny, prickly	pre-	before; ahead of time
ect-	outside	pseud-	fake, false
en-	in	scope	look; observe
encephal-	brain	sperm-	seed
epi-	on; above	therm-	heat
gastro-	stomach	trans-	across
gene-	origin; birth	tri-	three
glottis	mouth of windpipe	trop-	turning
gymno-	naked	ventr-	belly
hepat-	liver	zo-	animal
hetero-	different		

Word Meanings

Use the meanings of the word parts listed in the chart to determine the meaning of the following words. Write the meaning of each word in the space provided.

1. phototropism _____
2. anthropology _____
3. gymnosperms _____
4. hypothermia _____
5. arthropods _____
6. cytology _____
7. echinoderm _____
8. pseudopods _____
9. microbiology _____
10. zoology _____
11. epiglottis _____
12. multicellular _____

Synonyms

Synonyms are words that have the same or nearly the same meanings. The list of words below are synonyms for words used in Chapter 1. Write the synonym used in Chapter 1 in the space provided.

1. necessary, required, essential, compulsory: _____
2. beginning, commencement, source: _____
3. liquid, vapor, juice, plasma: _____
4. regeneration, generation, propagation, multiplication: _____
5. environs, surroundings, neighborhood, setting: _____
6. attempt, investigation, trial, test, check: _____

Homonyms

Homonyms are words that sound alike but have different meanings. Underline the correct homonym in the sentences below.

1. The tree will (die, dye) if the cambium is cut off in a circle around the trunk.
2. The plants were (rooted, routed) in potting soil.
3. Birds (pray, prey) on caterpillars.
A microscope slide has (straight, strait) edges.
4. Your (wait, weight) is different on Earth from what it is on the moon.

Activity

The Human Body

CHAPTER

1

Medical Terminology Made Easy

Many medical terms refer to various parts of the body. By learning to recognize the "word roots" for some of these parts, you can understand complicated medical terms. The following is a list of word roots, many of them derived from Latin or Greek, for various structures of the body.

cardio- = heart
hepat- = liver
neuro- = nerve
oto- = ear

derm- = skin
myo- = muscle
odont- = tooth

gastro- = stomach
nephro- = kidney
osteo- = bone

Using the list of word roots as a guide, see if you can match each definition in Column I with the correct medical term in Column II. Knowledge of the following word endings, or suffixes, and word roots will also be helpful: *-itis* (infection, inflammation), *-ology* (the study of), *-ectomy* (surgical removal), *-osis* (abnormal or diseased), *-gram* (recorded), *electro-* (electricity), *tachy-* (swift), and *-algia* (pain).

Column I

- _____ 1. Inflammation of the stomach
- _____ 2. Branch of medicine concerned with the study of the nervous system
- _____ 3. Malfunction of the kidneys
- _____ 4. Inflammation of the liver
- _____ 5. Abnormally rapid beating of the heart
- _____ 6. Small mirror used by dentists to view the teeth
- _____ 7. Infection of the bone marrow by bacteria
- _____ 8. Pain in a muscle or muscles
- _____ 9. Surgical removal of a kidney
- _____ 10. Graph showing the heartbeat
- _____ 11. Destruction of bone by surgery or disease
- _____ 12. Disease in which pus forms at the roots of the teeth
- _____ 13. Injection of fluid medicine under the skin by means of a syringe

Column II

- A. Dermatologist
- B. Electrocardiogram
- C. Endocarditis
- D. Gastrectomy
- E. Gastritis
- F. Hepatitis
- G. Hypodermic
- H. Myalgia
- I. Myasthenia gravis
- J. Nephrosis
- K. Nephrectomy
- L. Neuralgia
- M. Neurology
- N. Odontoscope

- _____ 14. Fungus infection of the external ear and ear canal
- _____ 15. General inflammation of the peripheral nervous system
- _____ 16. Inflammation of the heart lining
- _____ 17. Surgical removal of a part of the stomach
- _____ 18. Severe pain along a peripheral nerve
- _____ 19. Disease in which the muscles are weak and tire easily
- _____ 20. Specialist in diagnosis and treatment of skin disorders

- O. Osteoclasia
- P. Osteomyelitis
- Q. Oomycosis
- R. Periodontitis
- S. Polyneuritis
- T. Tachycardia