

Building Science Vocabulary

Studying science involves learning specialized vocabulary terms that are unique to science. In addition, familiar, everyday words may have different meanings in science. One way to help students acquire new science vocabulary is to introduce word parts—roots, prefixes, and suffixes.

Roots, prefixes, and suffixes are the building blocks of language.

- **root** a word base, or the element that gives the word its core meaning
- **prefix** a word part added to the beginning of a root or word
- **suffix** a word part added to the end of a root or word

Knowing word parts and how they are combined can help students figure out the meanings of new science vocabulary.

The most common sources of English word parts are Latin or Greek words. Sometimes both ancient languages contribute roots that have the same meaning. For example, the Latin word for “earth” is *terra*, from which *terrain* and *terrestrial* are derived; the Greek word for “earth” is *geo*, which is the base of such English words as *geology* and *geography*. Our word *solar* is based on the Latin word for “sun,” *sol*; our word *helium* is based on the Greek word for “sun,” *helios*.

A **Building Science Vocabulary poster** is included in the kit. Display the poster in the classroom so that students may refer to it as needed. The word parts, meanings, and example words listed on the poster also appear on the copymasters on the following pages. Photocopy and distribute the Roots, Prefixes, and Suffixes copymasters for students to keep in their science notebooks. Space is provided for students to add other word parts they encounter in their reading and investigations. Encourage students to use their growing knowledge of word parts to construct definitions. Provide opportunities for students to share their vocabulary observations and discoveries.

Word Parts Copymasters are on the following pages.>

Word Parts: Roots

A **root** is a word base—the part that gives the word its core meaning. A root can appear at the beginning, middle, or end of a word.

Root	Meaning	Example
anthrop	human	anthropology
aqua	water	aquarium
aster, astro	star	astronomy
bio	life	biology
celer	fast	accelerate
cept	to take or hold	accept
chron	time	chronology
clin	to lean or bend	inclined
cosm	world, universe	cosmic
cycl	circle	cycle
dict	to say or speak	predict
dorm	to sleep	dormant
duc, duct	to lead or draw	conduct
fac	to make	artifact
flect, flex	to bend	flexible
flu	to flow	fluid
form	to shape	formation
fract	to break	fracture
geo	earth, land	geology
graph	to write	biography
grav	heavy	gravity
hab, habit	to live	habitat
helio	sun	helium
hydro	water	hydrometer
ject	to throw	reject
litho	rock	lithosphere
log	word, speech	dialog
luna	moon	lunar
mar	sea	marine

Root	Meaning	Example
miss, mit	to send	transmit
morph	form	metamorphic
noct, nox	night	nocturnal
nucl	nut, kernel	nucleus
pend	to hang	suspend
phon	sound	telephone
photo	light	photosphere
port	to carry	portable
rad	ray	radiant
sci	to know	science
scope	to see	microscope
scrib, script	to write	manuscript
sed	to sit or settle	sediment
sens, sent	to feel	sense
sol	sun	solar
spec	to look	specimen
sphere	ball, globe	atmosphere
spir	breath	respiration
stella	star	stellar
struct	to build	construct
tend	to stretch	extend
terra	earth, land	terrestrial
therm	heat	thermal
tract	to pull	attract
trib	to give	tributary
vert	to turn	invert
vid, vis	to see	visible
volv	to roll	revolve
vor	to eat	carnivore

Write words about this science topic that contain roots from the list. Also add new roots and example words that you discover as you read.

Word Parts: Prefixes

A **prefix** is a word part added to the beginning of a word or root. A prefix changes the meaning of the word.

Prefix	Meaning	Example
a-	without	abiotic
ab-	away	absent
ad-	toward	adhere
alt-	high	altitude
anti-	against	antibody
bi-	two	binoculars
circum-	around	circumference
co-, com-, con-	with, together	compare
de-	down, from, off	descend
dia-	through	diameter
dis-	not, apart	disappear
endo-	within	endoskeleton
equ-	equal	equinox
ex-, exo-	off, outside	exhale
hemi-	half	hemisphere
hetero-	different	heterogeneous
homo-	same	homogeneous
hyper-	over	hyperventilate
hypo-	under	hypodermic
im-, in-	not	impossible
inter-	between	interrupt
iso-	equal	isobar
mega-	large	megaton

Prefix	Meaning	Example
meta-	change	metamorphosis
micro-	very small	microorganism
multi-	many	multiply
non-	not	nonliving
omni-	all	omnivorous
paleo-	ancient	paleontology
para-	beside	parasite
per-	through	permeable
poly-	many	polygon
post-	after	postpone
pre-	before	prehistoric
prim-	first	primary
pro-	forward	produce
re-	again, back	reflect
semi-	half	semicircle
strat-	to spread or stretch	stratus
sub-	under, inferior to	submarine
super-	above	superior
tele-	distant, far	telescope
trans-	across	transfer
tri-	three	tripod
un-	not	unlike
uni-	one	universe

Write words about this science topic that contain prefixes from the list. Write the prefix, the root, and the word meaning. Also add new prefixes and example words that you discover as you read.

Word Parts: Suffixes

A **suffix** is a word part added to the end of a word or root. A suffix changes the meaning of the word and often changes the part of speech.

Suffix	Meaning	Example
-able, -ible	capable of	movable
-al	of, relating to	global
-ance, -ence	action, state, or condition	dependence
-ate	to act on or change	saturate
-d, -ed	past tense	formed
-er, -or	person who is or does	teacher
-ful	full of, having	careful
-gram	a written record	seismogram
-graph	something written or drawn	autograph
-ic	related to	seismic
-ify, -fy	to make or cause to become	solidify
-ism	the act, state, or theory of	magnetism
-ist	person who is or does	scientist
-ity, -ty	degree of	acidity
-ive	forms adjectives from verbs	active
-ize	forms verbs from nouns	hypothesize
-less	without	harmless
-logy	study of	meteorology
-ly	in the manner of	slowly
-ment	act or result of	measurement
-meter	to measure	thermometer
-oid	like, resembling	asteroid
-s, -es	plural, more than one	earthquakes
-sion, -tion	state of	erosion

Write words about this science topic that contain suffixes from the list. Write the root, the suffix, and the word meaning. Also add new suffixes and example words you discover as you read.
