

TABLE 8.2 Generative Roots and Affixes in Science*

	INTERMEDIATE/MIDDLE GRADES	SECONDARY
<i>amphi-</i> (G) both	<i>amphibian</i>	
<i>cata-</i> (G) down, reverse, thoroughly	<i>cataclysm</i>	<i>catalyst</i> (loosen thoroughly)
<i>endo-</i> (G) within	<i>endothermic</i>	<i>endogenous</i>
<i>equ-</i> (L) equal	<i>equator</i>	<i>equilibrium</i> of ecosystems
<i>iso-</i> (G) same, equal	<i>isometric</i>	<i>isotope</i>
<i>syn-/sym-</i> (L) together, with	<i>photosynthesis</i>	molecular <i>synthesis</i> /organic compound <i>synthesis</i> /protein <i>synthesis</i>
<i>trans-</i> (L) across	<i>transform/transport/transfer</i> ("carry across")/ <i>transparent</i>	<i>neurotransmitter</i>
<i>proto-</i> (G) first	<i>prototype</i>	<i>protolithic</i>
<i>quadr</i> (L) four	<i>quadrant</i>	
<i>cent</i> (L) hundred	<i>centimeter/percent</i>	
<i>dec</i> (L) ten	<i>decimal/decimeter</i>	
<i>mill</i> (L) thousand	<i>millipede/millimeter</i>	
<i>kilo</i> (G) thousand	<i>kilogram/kilometer</i>	<i>kilowatt/kilohertz</i>
<i>anthr</i> (L) man	<i>anthropologist</i>	<i>anthropology/anthropoid</i>
<i>cult</i> (L) cultivate	<i>culture</i>	<i>culture/cultivate</i>
<i>cyto/cyte</i> (G) cell		<i>cytoplasm/lymphocyte</i>
<i>eco</i> (G) house	<i>ecosystem/ecology</i>	<i>equilibrium</i> of ecosystems
<i>hered/herit</i> (L) heir	<i>heredity</i>	<i>heritability</i>
<i>gen</i> (L) producing	<i>gene/genetics/generation</i>	<i>gene encoding/genetic diversity/</i> <i>phylogenetics/phylogeny</i>
<i>ign</i> (L) fire	<i>ignite/igneous rock</i>	
<i>hydro</i> (G) water, liquid	<i>hydrogen/hydraulic</i>	<i>hydrogen ion/hydroponics</i>
<i>aqu</i> (L) water	<i>aquarium/aquifer</i>	
<i>chrom/chrome</i> (G) color	<i>chromosome/monochrome</i>	<i>chromatography</i>
<i>chlor</i> (G) green	<i>chlorophyll</i>	
<i>leuko/leuco</i> (G) white	<i>leukemia</i>	<i>leukocyte</i>
<i>alb</i> (L)	<i>albumin</i>	
<i>magn</i> (L) great, large	<i>magnify/magnification</i>	
<i>meta</i> (G) beyond	<i>metamorphic/metamorphosis</i>	
<i>morph</i> (G) form, shape, structure	<i>metamorphic/metamorphosis</i>	<i>morphology</i>
<i>plasm</i> (G) to shape, mold	<i>plasma/cytoplasm/plastic</i>	
<i>plast</i> (G) small body, structure, particle	<i>chloroplast</i>	<i>leucoplast</i>
<i>som</i> (G) body	<i>chromosome</i>	
<i>ceph</i> (G) head	<i>cephalic</i>	
<i>card</i> (G) heart	<i>cardiovascular</i>	
<i>derm</i> (G) skin	<i>dermatology</i>	
<i>neuro</i> (L) nerve	<i>neuron/neurotransmitter</i>	
<i>ichthy</i> (G) fish	<i>ichthyology/ichthyosaur</i>	
<i>flu</i> (L) flow	<i>fluid/fluvial/fluctuate/influenza/</i>	
<i>rhea</i> (G)	<i>diarrhea</i>	

	INTERMEDIATE/MIDDLE GRADES	SECONDARY
<i>radi</i> (L) ray	<i>radiate/radiation/radio</i> (clipped form; originally <i>radiography</i>)	<i>radio wave/radioactive</i>
<i>zym</i> (G) fermentation		<i>enzyme/lysozyme</i>
<i>ferm</i> (L)		<i>ferment</i>
<i>phen</i> (G) show, display	<i>phenomenon</i>	<i>phenotype</i>
<i>phyll</i> (G) leaf	<i>chlorophyll</i>	<i>heterophyllous</i>
<i>foli</i> (L)	<i>foliage</i>	<i>exfoliate</i>
<i>dent</i> (L) tooth	<i>dental</i>	
<i>dont</i> (G)	<i>orthodontist/pteranodon</i>	
<i>pter</i> (G) wing	<i>pterodactyl</i>	
<i>phy</i> (G) natural		<i>physics/physiology</i>
<i>phyl</i> (G) class		<i>phylum/phylogenetic</i>
<i>tom</i> (G) cut	<i>atom</i>	<i>anatomical</i>
<i>sect</i> (L) cut	<i>insect/dissect</i>	
<i>pathy/path</i> (G) disease, one who suffers from a disease	<i>osteopathy/osteopath</i>	<i>pathogen</i>
<i>sol</i> (L) sun	<i>solar system/solstice</i>	
<i>stel</i> (L) star	<i>stellar/constellation/interstellar</i>	<i>stelliform</i>
<i>aster/astr</i> (G)	<i>asteroid/astronomy</i>	
<i>therm</i> (G) heat	<i>thermometer/geothermal/endothemic</i>	
<i>calor</i> (L)	<i>calorie</i>	
<i>pyr</i> (G) fire, heat	<i>pyrite</i>	
<i>phag</i> (G) eat	<i>carnivore/herbivore/omnivore</i>	<i>bacteriophage</i>
<i>vor</i> (L)		
<i>algia/alg</i> (G) pain	<i>neuralgia/analgesic</i>	
<i>emia</i> (G) blood, condition of the blood		<i>leukemia</i>
<i>-ician</i> (L) specialist in	<i>physician/dietician</i>	
<i>ate</i> (L) having, characterized by	<i>vertebrate/invertebrate/hydrate</i>	
<i>-ide</i> (L) related or similar chemical compounds or elements		<i>monosaccharide/sodium chloride</i>
<i>-ine</i> (L) chemical substance		<i>chlorine</i>
<i>-ite</i> (G) rock, mineral, fossil	<i>hematite/trilobite</i>	
<i>-itis</i> (G) inflammation		<i>appendicitis/bronchitis</i>
<i>-ic</i> (G) the higher of two valences		<i>stannic chloride (SnCl₄)</i>
<i>-ous</i> (L) the lower of two possible valences		<i>stannous chloride (SnCl₂)</i>
<i>-on</i> (G) unit of	<i>electron/proton/neutron</i>	<i>photon</i>
<i>-logy/-logist</i> (G) science of, scientist	<i>geology</i> (science of the earth, studying the earth)/ <i>geologist</i> (one who studies the earth)	
<i>-phobia</i> (G) abnormal fear	<i>claustrophobia</i>	

*(L) = Latin (G) = Greek

TABLE 6.9 Generative Roots and Affixes in History/Social Studies*

	INTERMEDIATE/MIDDLE GRADES	SECONDARY
<i>trans-</i> (L) across	transportation	
<i>neo-</i> (G) new	Neolithic	neoclassical
<i>arche</i> (G) ancient	archeology/archaic	
<i>anthr</i> (L) man	anthropology/anthropologist/ philanthropist ("love for mankind")	
<i>nat</i> (L) to be born	nation/international/national	
<i>bel</i> (L) war	rebel/rebellion	antebellum period
<i>cap</i> (L) head	capital/capitalism/per capita	
<i>civ</i> (L) citizen	civic/civil rights/civil war/city	civilization
<i>crit</i> (G) judge	critic/critique	
<i>cult</i> (L) cultivate	culture/multicultural/agriculture ("cultivate a field")	culture/cultivate
<i>demo</i> (G) people	democracy	demographic
<i>ethn</i> (G) people	ethnic/ethnography	
<i>popul/pub</i> (L) people	population/populace/public/republic	
<i>dic</i> (L) say, speak	dictator	
<i>dom</i> (L) home	domestic	
<i>eco</i> (G) house	economy/economics	
<i>eval</i> (L) age	medieval	primeval
<i>greg</i> (L) gather	segregation/integrate	
<i>jud</i> (L) judge	judicial/prejudice/judicial	
<i>jur/jus</i> (L) law, just	jury/justice	
<i>leg</i> (L) law	legal/legislate	
<i>liber</i> (L) free	liberty/liberate/liberation	
<i>mono</i> (G) one	monarchy/monastery	
<i>urb</i> (L) city	urban/suburb/exurb	
<i>poli</i> (G) city	metropolis/cosmopolitan/politics	
<i>port</i> (L) carry	transportation/import/export	
<i>sen</i> ** (L) old	senate/senator	
<i>soc</i> (L) companion	social/society	sociology
<i>terra</i> (L) earth	territory	
<i>geo</i> (G)	geography	
<i>vol</i> (L) roll, turn	American Revolution	French Revolution/Russian Revolution
<i>-crat/-cracy</i> (G) rule	democracy	autocrat/autocracy
<i>-ism/-ist</i> (L) belief in/one who believes		communism/communist/ capitalism/ capitalist

*(L) = Latin (G) = Greek

**In Roman times, the meaning of the root *sen* also connoted "elder," which the word *senator* more directly meant.