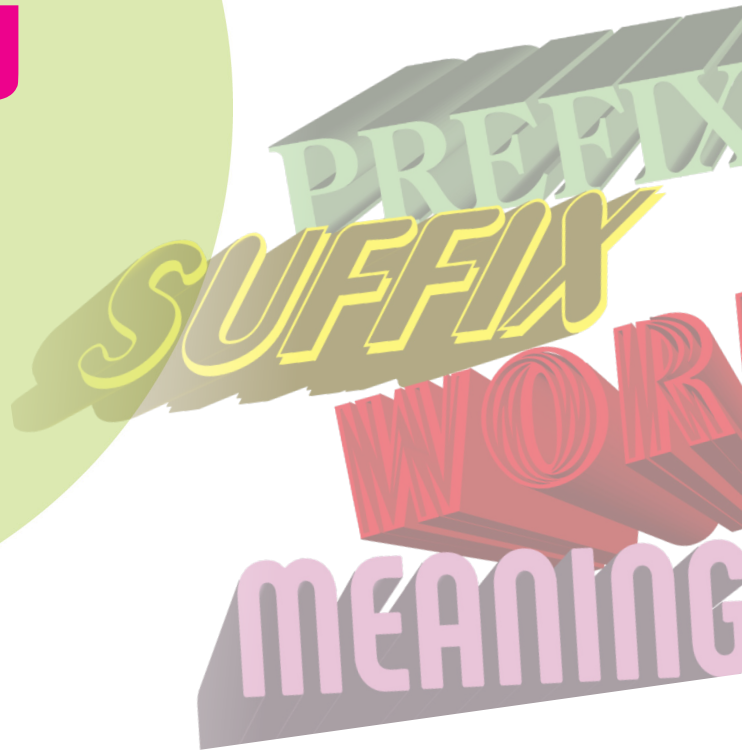
Developing literacy using science: prefixes and suffixes



Andy Markwick provides some helpful suggestions about the use of prefixes and suffixes in scientific words

Children absolutely love using unusual words and finding out what they mean. Science contexts can be effectively employed to explore what words mean and to compose sentences to develop children's literacy. Not only does science have a wonderfully rich vocabulary, which children find fascinating, science can be written in numerous genres. Children can write to discuss, recount, explain, instruct, persuade, argue a point or review, and there are different ways these types of writing can be achieved. For example, children might create a poster, give a presentation, compose a letter, write a formal report, use a cartoon, use annotated illustrations or write a story. This article provides some suggestions about the use of prefixes and suffixes in scientific words.

Understanding scientific vocabulary: key words

Before you can begin to unpick the meaning of many key scientific words you must first understand how the words are constructed. Many commonly used words are made up from a root word and an **affix**. An affix is a group of letters attached to either the beginning of the root word (**prefix**) or the end of the root word (**suffix**) that changes the meaning of that word. For example, the root word happy might be prefixed by un-; this would change happy to unhappy. Alternatively, happy might be suffixed by –ness, changing happy to happiness.

Many science words use prefixes and suffixes derived from the Greek and Latin languages. If you become familiar with the meanings of these affixes you can work out the meanings of most scientific words. For example, the prefix **photo** means light (Greek) and the suffix **synthesis** means putting together or making (Greek). Joining the prefix and suffix together makes the word **photosynthesis**. This word means **making from light**. The word **antiseptic** is made from the prefix **anti** and the suffix **septic**. Together this new word means **against infection**.

Tables 1 and 2 show some of the more common prefixes and suffixes used in science vocabulary.

Some of these affixes could be considered either prefix or suffix depending on their use. For example, **therm** is a suffix in **exothermic** (heat given out) or a prefix in **thermonuclear** (heat from a nuclear explosion).

Some examples of scientific key words

- **A microscope is a device used to examine small objects. When the first microscope was created and scientists needed a name for the new invention, they combined the prefix micro, which means small, and the suffix scope, which means examine.**
- **A cow is an herbivore that has a diet of only plants. We know this because the prefix is herb, which means plant, and the suffix is vore, which means to devour or swallow.**
- **We use a thermometer to measure how hot or cold something is. The prefix therm means heat and the suffix meter means to measure and so together the word means 'to measure heat'.**

Table 1 Common prefixes used in science words and their origin

Prefix	Meaning	Origin: G = Greek, L = Latin
an	against	G
aero	air	G
acou	sound	G
anti	opposite or against	G
bio	life or living	G
cardi	heart	G
carn	meat or flesh	L
centi	one hundred or one hundredth	L
centre	mid-point of a circle	L
chloro	green	G
chromo	colour	G
di	two or twice	G
dent	tooth	L
endo	within or in	G
exo	out	G
equi	equal	L
grav	heavy	G
homo	same	G
hem/heam	blood	G
herb/herba	plant	L
hetero	different	G
hydro	water	G
inter	between or amongst	L
macro	large	G
micro	small	G
mono	one or single	G
noct	night	L
phono	sound	G
photo	light	G
poly	many	G
pre	before	L
re	again or back	G
rhine	nose	G
semi	half	L
sub	under or part or up to	L
tele	far away or distant	G
therm	warm (heat)	G
tri	three	G/L

Table 2 Common suffixes used in science words and their origin

Suffix	Meaning	Origin: G = Greek, L = Latin
costal	rib	L
derm	skin	G
graph	record or write	G
meter	to measure	L
morph	shape	G
ology	the study of	G
phobic	fear	G
philic	love	G
phyll	leaf	G
pod	foot	G
scope	examine or to look at	G
septic	infection or decay or rot	L
sphere	globe or ball	L
synthesis	putting together	G
therm	heat	G
vore	swallow or devour	L

Try it out

Making key words

Try out the examples below by filling in the blank spaces.

Prefix	Suffix	Word	Meaning
photo	graph		
tri	pod		three foot
	costal	intercostal	
	phobic		not liking water
			Meat eating
		telescope	
		endothermic	

Understanding key words used in science

Try to work out the meaning of each of the key words highlighted in the sentences below. Use your knowledge of affixes to help you.

- **It was important to use antiseptic wash on the area.**
- **Insects have an exoskeleton, whereas reptiles have an endoskeleton.**
- **Photosynthesis could not occur without chlorophyll.**
- **Aerobic and anaerobic respiration mean the opposite to each other.**

Did you notice?

Prefix and **suffix** are also compound words that have two parts. **Pre-** means before, **suff-** means after and **-fix** means to attach. Older books sometimes call a suffix a **postfix**. What do you think **post-** means?

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