

## Word Formation :

There are three main types of word-formation: **AFFIXATION** (adding prefixes or suffixes to a base: un-friend-ly, pre-determine), **CONVERSION** (a word is converted into a new class, release (noun) > release (verb)), and **COMPOUNDING** (the joining of two bases where the first usually subcategorizes the second: bottle-feed). In this book we will study affixation only but you may go to the references for more information on word formation.

### 1. AFFIXATION ;

In English we may build up words by adding morphemes before or after a root or base word. We call this prefixation and suffixation.

**1.1. PREFIXATION** is a productive resource in the language of science and technology since it allows the creation of new concepts which are also transparent enough to be generally understood by a professional community. The list below explains the meaning of common English prefixes that are used in scientific and technical texts.

**Common prefixes** are:

a = no, absence of, without	mono = one, single
ab = away from, off	morph = shape, form, appearance
ante = before, prior to	poly = many or much
aqua/hydr = water	pro = before, in favour of
bi = two, twice	re = do something again
circum = in a circle, around	sub = under, below
co = together, to the same extent	super = superior in size, quality or degree, exceeding the norm
de = undo, apart, away, do the opposite	syn = joined together
dis = in all directions, apart, away	trans = across or through
en = into, in, within	tri = three
ex = outside, out of	ultra = beyond, to an extreme degree
hyper = above, high	un = not
hypo = below, deficient, under	uni = same, one
infra = inferior, beneath	
isos = equal, uniform	

**Number:** some prefixes indicate number, for example:

1 – mono, one (as in one-fire)	9 – nona
2 – di, bis, bi	10 – deca
3 – tri(s)	100 – hectato

4 – tetra	1000 – kilia
5 – penta	100000 – myria
6 – hexa	nano – a billionth
7 – hepta	semi – half
8 – octa	multi – many

There are also time prefixes, like pre-, ante- (meaning before), post- (after). Negative, privative and pejorative prefixes are common to indicate the opposite meaning to that of the root word or to express a negative quality or process. Examples of negative prefixes are: anti-, dis-, il-, in-, mal-, mis-, non-, pseudo-, un- as in antifreeze, incomplete, malfunction, malware, misaligned

The prefixes ultra-, super-, over-, extra-, and hyper- are very frequent in science texts. They are used to convey a similar meaning: a high degree or amount of something (i.e., they may be paraphrased with expressions such as «very big», «extremely», «very» or «superior»). The lexicon of present-day English is changing rapidly and regularly. Prefixes can be attached to a noun, an adjective, past participle, or verb, in order to generate neologisms in scientific English. Observe the examples below:

SUPER-	EXTRA-	HYPER-	OVER-	ULTRA-
Super + Noun <i>super-computers</i>	Extra + Noun <i>extra-length</i>	Hyper + Noun <i>hypersystem</i>	Over + Verb [finite and non-finite verbs]	Ultra + Noun <i>ultrafiltration (technique)</i>
Super + Adj. <i>super-galactic</i>	Extra + Adj. <i>Extra-big</i>	Hyper + Adj. <i>hyper-accurate, hyper-dense</i>	<i>over-concerned, over-speeding, over-design</i>	Ultra + Adjective <i>ultra-pure, ultra-sharp</i>
Super + Past Part. <i>superheated</i>		Hyper + Past Part. <i>hyper-abbreviated</i>	Over + Adj. <i>over-stimulated</i>	Ultra + Adj. + N. <i>ultra-high-temperature (treatment)</i>
			Over + Noun <i>over-reaction</i>	<i>ultra-low-sulphur (diesel)</i>
			Over + Adverb <i>over-friendly, over-sixties</i>	

Some of the roots joined to these prefixes require a specific prefix+root combination. These specific usages do not accept the use of another prefix with the same meaning. Examples are: ultra-violet, ultra-sonic, or hyper-text.

**Example exercises** ;Combine the prefixes super-, extra-, ultra-, and over- with the following word bases to fill in the gaps in the sentences below:

**Large (2) production (1) fast (2) long (2) pricing (1) cold (2) high (2) sensitive (2) positive (1)**

- Because they are run on your PC rather than across the Internet they do not require a powerful computer and \_\_\_\_\_ connection.
- There will be new forms of military remote sensing equipment, and low cost instruments for analysing \_\_\_\_\_ chemical and biochemical reactions.
- Critique of what is claimed to be a new, \_\_\_\_\_ stereotype of ageing which denies its problems.
- Hotronic says the batteries were developed for \_\_\_\_\_ conditions.
- Researchers at the University of Innsbruck have done just that with \_\_\_\_\_ lithium atoms, chilled to within 200 millionths of a degree of absolute zero.
- Using an \_\_\_\_\_ Spf sunscreen that - according to conventional reason - can stave off skin tumours.
- Terrestrial television transmission is \_\_\_\_\_ frequency (uhf).
- This will be captured on \_\_\_\_\_ photographic film.
- naSa's \_\_\_\_\_ gamma-ray detector will ride on its Gamma-ray Large Area Space Telescope.
- Kipnis and Tsang (1984b) analysed the S&P500 index for the period from April 1982 to January 1983 and, after allowing for transaction costs, found a considerable number of departures from the no-arbitrage condition, with both \_\_\_\_\_ and under \_\_\_\_\_ being present.
- This was achieved by building an \_\_\_\_\_ cavern in Norway which goes back to the early 1970s.
- They jumped in size from 200 000 to 300 000 and even 400 000 tonnes, earning the title ulccs, for \_\_\_\_\_ crude carriers.
- This helped the animal to be active and healthy despite being handicapped by \_\_\_\_\_ feathers.

- naSa's \_\_\_\_\_ Duration Balloon (uldb) project.
- Oestrogen has a negative feed-back effect on the pituitary gland thus checking \_\_\_\_\_ of fSh-rh.

**1.2. SUFFIXATION**: Suffixes may be added to nouns, adjectives or verbs. It may be helpful to know the most common ones in order to recognise their meaning when you come across new words containing them. Have a look at the table below. In it you will see a list of suffixes that are added to different word classes. For each suffix, try to add an example:

<i>Suffix</i>	<i>Meaning</i>	<i>Example</i>	<i>your example</i>
<b>Verb Suffixes</b>			
-ate	become	eliminate	
-en	become	harden	
-ify, -fy	make or become	mummify	
-ize, -ise	become, make, do sth. with	synthesize	

<b>Noun Suffixes</b>			
-acy	state or quality	accuracy	
-al	act or process of	rehearsal	
-ance, -ence	state or quality of	protuberance	
-dom	place or state of being	freedom	
-er, -or	one who	worker, warrior	
-ism	doctrine, belief	journalism	
-ist	one who	chemist	
-ization	process or result of doing sth.	fossilization	
-ity, -ty	quality of	alkalinity	
-ment	condition of	development	
-ness	state of being	loneliness	
-ship	position held	scholarship	
-sion, -tion	state of being, action or process	intimidation	

<b>Adjective Suffixes</b>			
-able, -ible	capable, inclined to	breakable,	
-al	pertaining to, of the kind of, having the form of	fictional	
-ful	notable for	powerful	
-ic, -ical	relating to, having the characteristics of	biological, ethic	
-ious, -ous	characterized by, having the quality of, full of	religious, poisonous	
-ish	having the quality of	greenish	
-ive	performing, having the nature of	creative	
-less	without	odourless	
-morph	shape, form or appearance	allomorph	
-y	characterized by, condition	sleepy	

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Sources : Working with a Technical and Scientific English, Mari Carmen Campoy Cubillo, p 9-22